KOGANEI
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No.BK-P405-③

NEW Products

Energy-saving for air blowing processes
Pulse blow series

Compressed air is not for free!!

No electricity required!

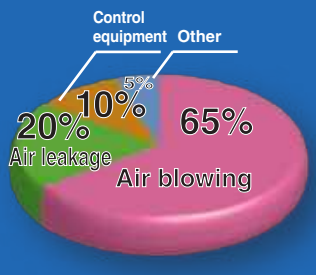
Air consumption can be reduced nearly 50%

Generates pulse air without using electricity!

NEW Small-size pulse blow type

Pulse blow air gun PAG Series

Pulse blow unit PAU Series



Measures to reduce factory air consumption!

Air compressors are said to use about 20% of a factory's overall electric power. About 65% of that compressed air is usually consumed by blowing air. Pulse blow air gun can reduce the amount of compressed air consumption and help save energy.

World's first!

Pulse blow air gun

PAG Series

No electricity required!

Pulse air generator is built in

PAT. PEND.

Trimmer: Pulse frequency adjustment
Enables you to adjust the frequency with a flat blade screwdriver

Light weight design

194 g [6.84 oz]

* Main unit only

No electricity required

Valve built in

Pulsed air generation unit built in
You only need to connect compressed air

● Pulse blow flow rate guideline: 80 to 145 L/min [2.826 to 5.121 ft³/min]

Nozzle variations

Air amplifier nozzle

● The air volume is nearly 4.5 time larger (The flow consumption is the same as that of the standard nozzle ϕ 3 [0.118].)

● Standard nozzle orifice diameters
ϕ 2 mm [0.079 in.], ϕ 3 mm [0.118 in.], ϕ 4 mm [0.157 in.]

● Long nozzle (orifice diameter: ϕ 2.3 [0.091])
170 mm [6.693 in.],220 mm [8.661 in.]

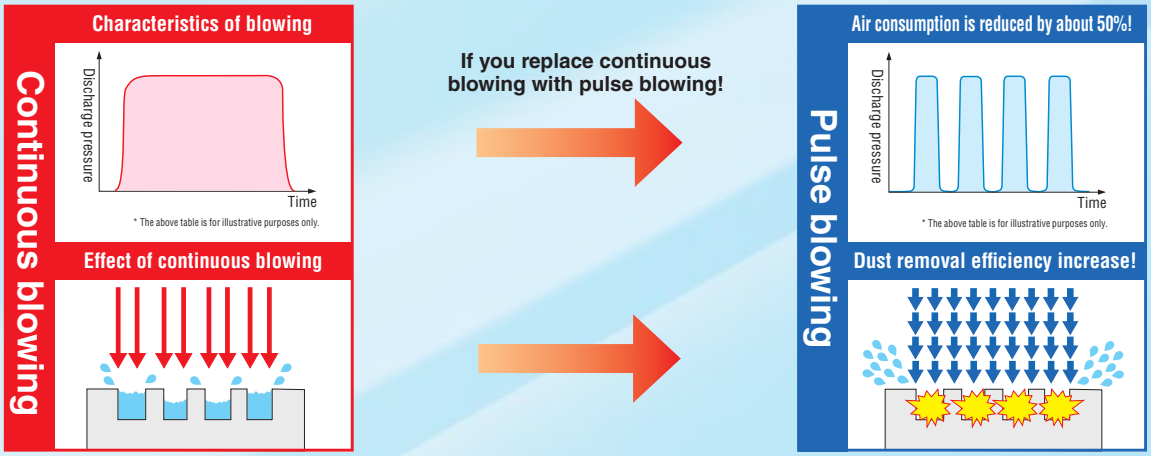
CO_2 reduction

We will help you in your CO_2 reduction activities (compressor electricity charge reduction).

	Pulse blow air gun Per PAG-2 unit	Standard Per PAU unit	Large flow rate type Per PAU-30 unit	Small-size type Per PAU-05 unit
Electricity amount kWh	2368 ➡ 1184	3068 ➡ 1534	7437 ➡ 3718	794 ➡ 397
CO_2 kg	1028 ➡ 514	1332 ➡ 666	3228 ➡ 1614	345 ➡ 172
Cost	Reduction of 5,960 yen/year	Reduction of 7,723 yen/year	Reduction of 18,718 yen/year	Reduction of 3,996 yen/year

Remarks: <<Conditions for the above calculations>> The values of "Electricity amount kWh" and "CO_2 kg" , show the total amount within the product life.
Daily operating hours: 2 hours, yearly operating days: 240 days, CO_2 emission factor (TEPCO value in 2020): 0.434kg-CO_2/kWh
Cost of compressed air per m³: 2.5 yen, * "Value for continuous blowing" ➡ "pulse blowing" according to our test conditions

Advantages of pulse blowing



More efficient dust removal!

It is said that pulse air blowing has higher dust removal efficiency than continuous air blowing because it applies impact to the dust removal target intermittently.

No electricity required!

Just attach a pulse blow unit to your air gun to use it as a pulse blow air gun

Small-size type PAU-05

● Pulse blow flow rate guideline: 10 to 55 L/min [0.353 to 1.943 ft³/min]

NEW

- **Small size, light weight**
  Entire length: 33.8 to 46.6 mm [1.331 to 1.835 in.], mass: 14 g [0.49 oz],15 g [0.53 oz]
- **Wide pipe variations** For details, refer to page ⑩ .
  IN piping: M5 internal thread, φ 4 [0.157] quick fitting, φ 6 [0.236] quick fitting, Rc1/8, R1/8, G1/8

-M5 (IN piping, M5 internal thread) | -J4 (IN piping, φ 4 quick fitting) | -J6 (IN piping, φ 6 quick fitting) | -01A (IN piping, Rc1/8 internal thread) | -01B (IN piping, R1/8 external thread) | -01C (IN piping, G1/8 external thread)

Standard PAU

● Pulse blow flow rate guideline: 80 to 125 L/min [2.826 to 4.415 ft³/min]

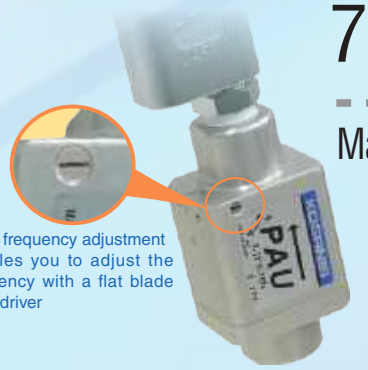
Light weight design

73 g [2.57 oz]

Main unit: Aluminum material

Mountable on a device

Can be mounted and used in air blowing processes by installing an additional mounting bracket.



Trimmer: Pulse frequency adjustment
Enables you to adjust the frequency with a flat blade screwdriver

Large flow rate type PAU-30

● Pulse blow flow rate guidelines: 160 to 270 L/min [5.651 to 9.536 ft³/min]

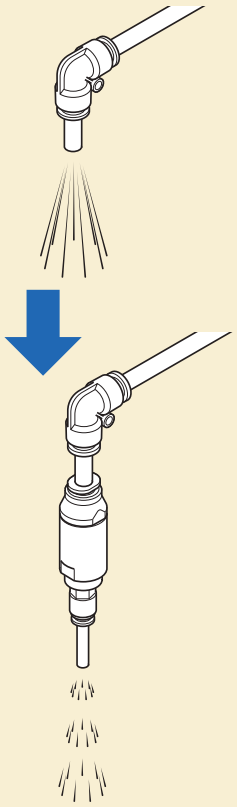
Direct mounting type

Double the flow rate!!

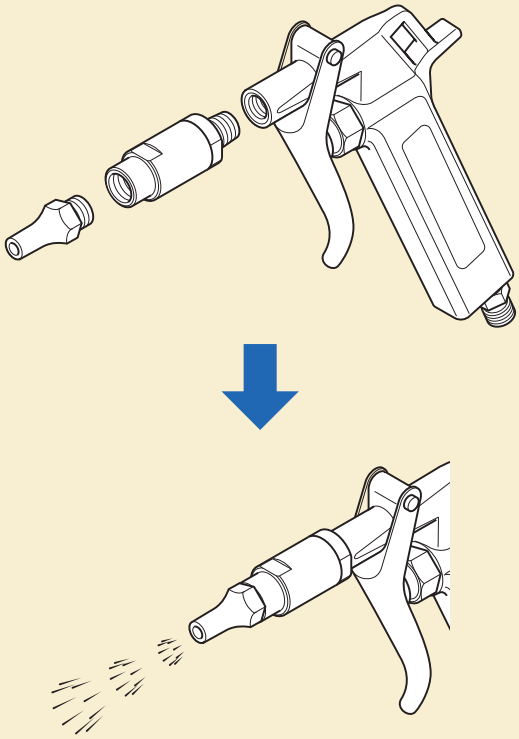
- **Doubled the flow rate for an improved performance of dust removal compared to PAU!**
- **Improved space economy by a volume of 130% (compared to PAU) despite giving 2 times the flow rate!**
- **Direct mounting makes it ideal for installation on your equipment! Brackets not required**

Applicable examples

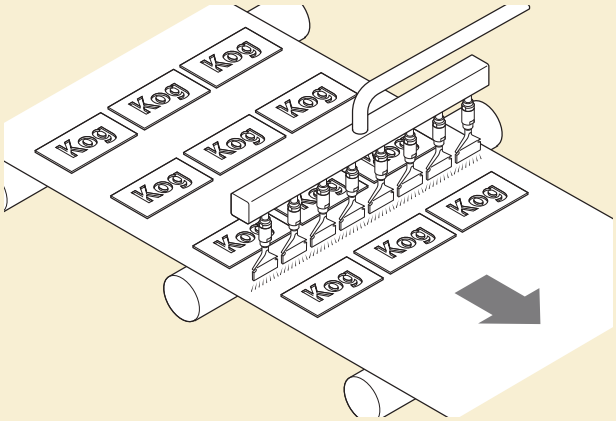
● Mount a small-size pulse blow unit at the tip of a piping tube.



● Mount a small-size pulse blow unit between an air gun and the tip of a nozzle.

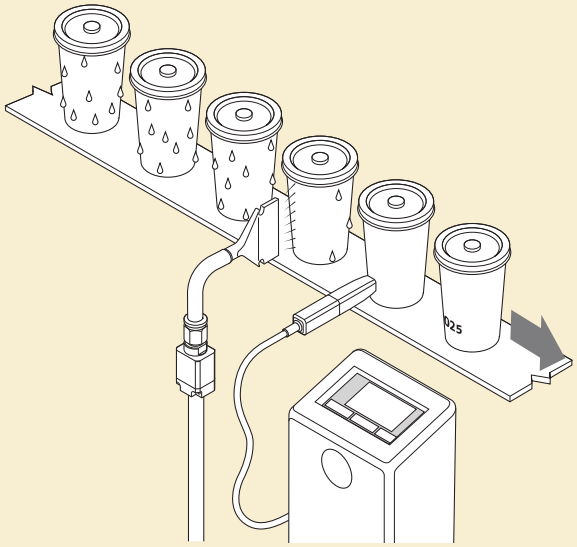


● To remove the dust adhering to the workpieces on a conveyor, mount multiple nozzle-attached small-size pulse blow units.

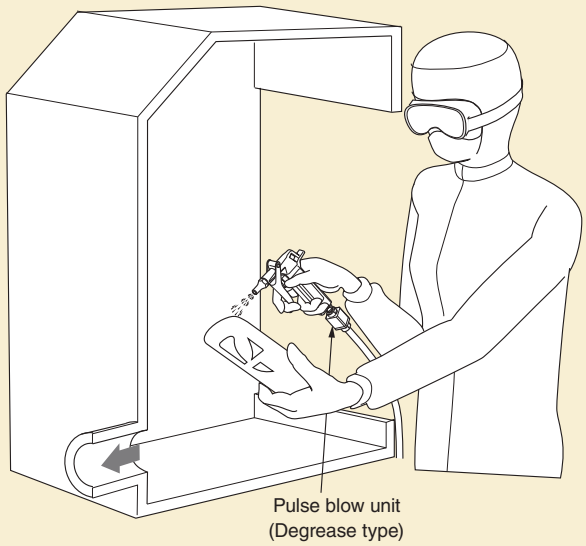


Applicable examples

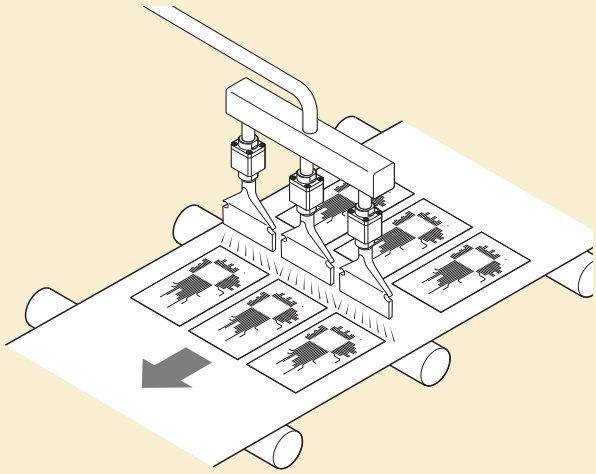
● To laser-print on workpieces on a conveyor after removing water drops adhering to them, use a nozzle-attached pulse blow unit.



● To remove the dust adhering to the workpieces in a clean box in a simple cleanroom, use a pulse blow unit-attached air gun.



● To remove the dust adhering to the workpieces on a conveyor, mount three nozzle-attached pulse blow units.



Pulse blow air gun

PAG Series

Specifications

Item \ Model		PAG - □
Medium		Air[Note 1]
Lubrication		No
Operating pressure range MPa [psi]		0.35 to 0.7 [51 to 102]
Operating temperature range °C [°F]		5 to 50 [41 to 122]
Pulse frequency Hz		5 to 15
Port size		Piping side: Rc1/4 Nozzle side: G1/8
Nozzle diameter[Note 2] mm [in.]		Standard nozzle: ϕ2 [0.079], ϕ3 [0.118], ϕ4 [0.157]/long nozzle: ϕ2.3 [0.091]/air amplifier nozzle: ϕ3 [0.118]
Mass g [oz]		194 [6.84] (main unit only)
Material	Main unit cover	PBT resin
	Lever	POM resin

Note 1: Air that is used should be clean air that contains no oil, solids, or other contaminants.
If drainage water, dust, and other contaminants get into the pulse blow air gun, they could cause defective operation.
Note 2: This product is equipped with a nozzle when shipped. Wrap sealing tape around the threads of the nozzle when assembling the product.
Note 3: This product uses grease internally.

Order codes

● Main unit

PAG- □

Nozzle diameter
N: No nozzle
2: ϕ 2 mm [0.079 in.] standard nozzle
3: ϕ 3 mm [0.118 in.] standard nozzle
4: ϕ 4 mm [0.157 in.] standard nozzle

● Additional parts (individual nozzles)

・Standard nozzle

PAGZ- □

Nozzle diameter
2: ϕ 2 mm [0.079 in.] standard nozzle
3: ϕ 3 mm [0.118 in.] standard nozzle
4: ϕ 4 mm [0.157 in.] standard nozzle

(Standard nozzle)

・Air amplifier nozzle (ϕ 3 mm [0.118 in.])

PAGZ-ZN3

(Air amplifier nozzle)

・Long nozzle

PAGZ-45× □

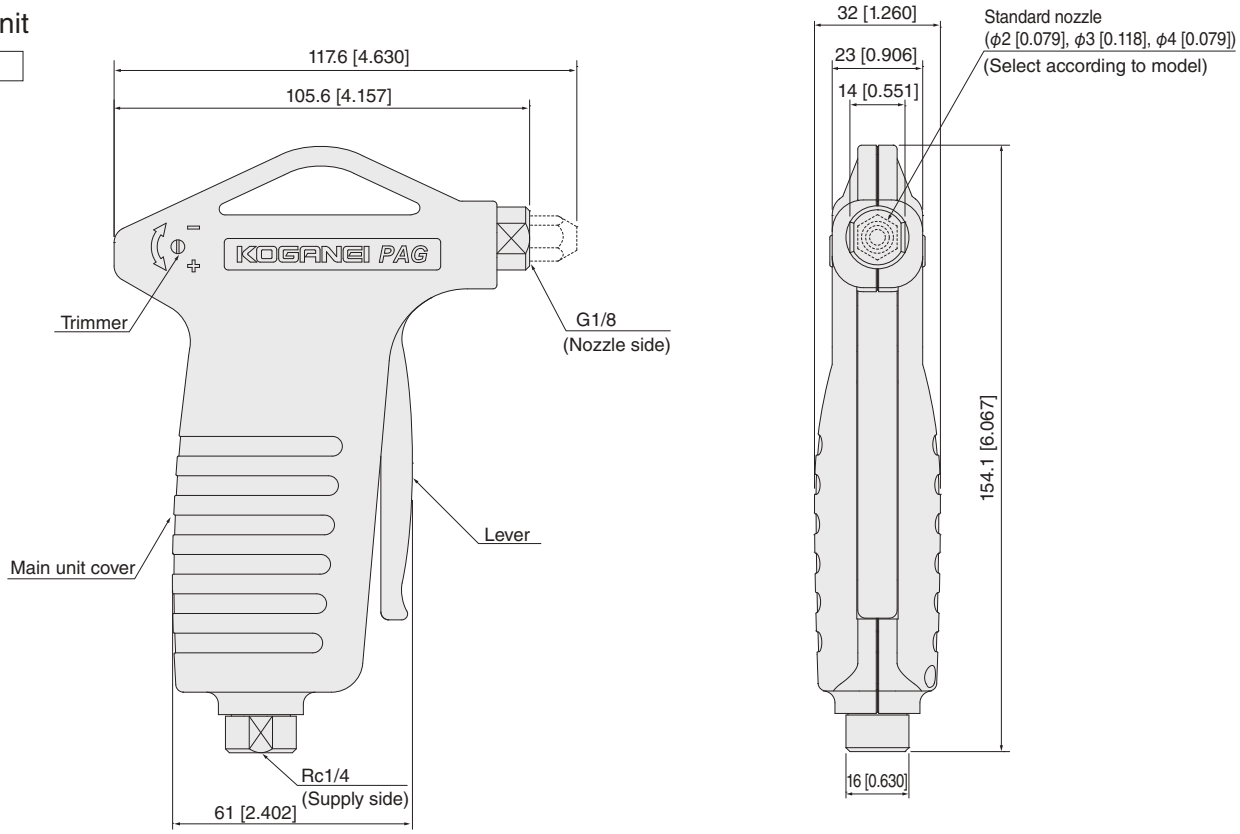
Nozzle length
150: ϕ 2.3 mm [0.091 in.] long nozzle with a length of 170 mm [6.693 in.]
200: ϕ 2.3 mm [0.091 in.] long nozzle with a length of 220 mm [8.661 in.]

(Long nozzle)

Dimensions (mm [in.])

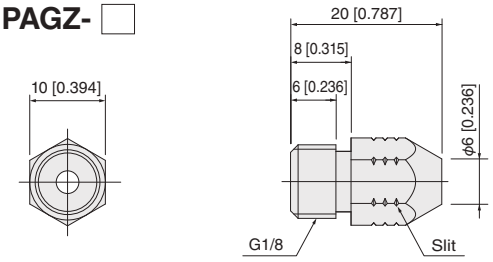
● Main unit

PAG-□



● Standard nozzle (identifier: number of slits)

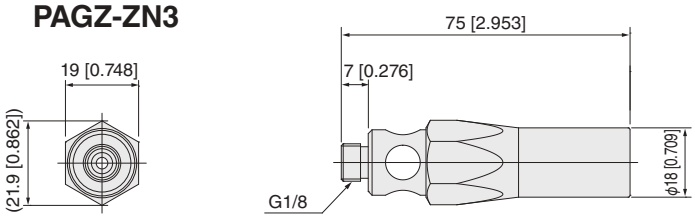
PAGZ-□



Number of slits	Nozzle diameter (mm [in.])
2	ϕ 2 [0.079]
3	ϕ 3 [0.118]
4	ϕ 4 [0.157]

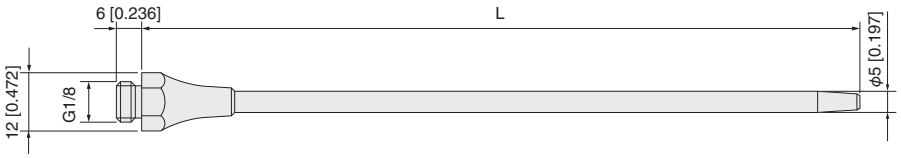
● Air amplifier nozzle

PAGZ-ZN3



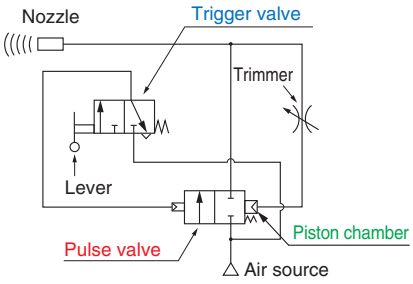
● Long nozzle

PAGZ-45×□



Model	L(mm [in.])
PAGZ-45×150	170 [6.693]
PAGZ-45×200	220 [8.661]

Operation principle



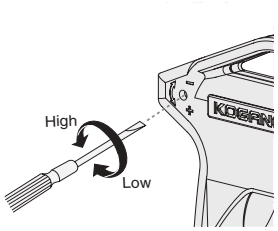
1. Pulling the lever sends a signal from the trigger valve to open the pulse valve.
2. The pulse valve opens, and air is output from the nozzle.
3. Some of the air that is output from the pulse valve goes through the trimmer to accumulate in the piston chamber.
4. When some air has accumulated, the pulse valve closes so that air output from the nozzle stops and at the same time the air in the piston chamber is exhausted.
5. A certain amount of air is exhausted from the piston chamber, the pulse valve opens again, and air is output from the nozzle.
   Steps 3 to 5 are then repeated. * The pulse frequency can be adjusted by using the trimmer.

Frequency adjustment method

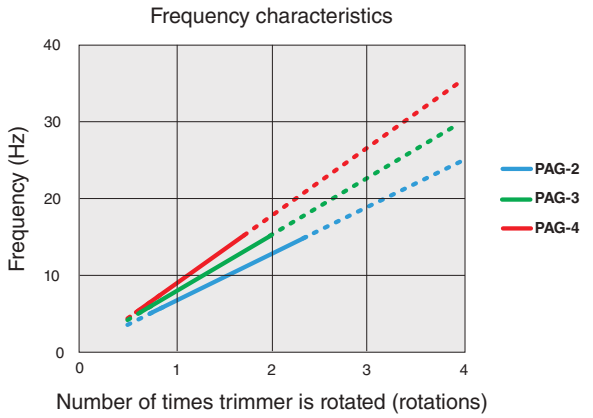
The pulse frequency can be adjusted by rotating the frequency adjustment trimmer, as shown in the figure at right.
Use a precision flat blade screwdriver for adjustments.

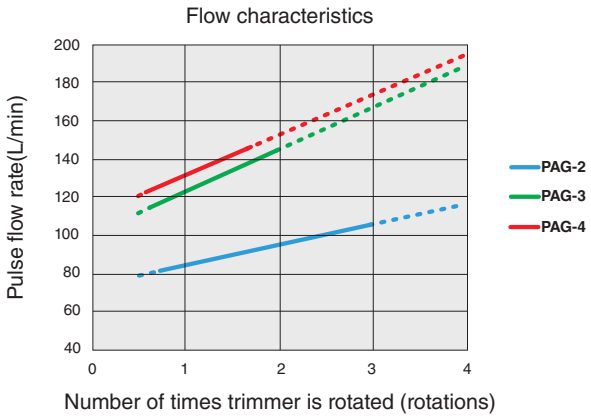
Toward + (counterclockwise): Increases frequency.
Toward - (clockwise): Decreases frequency.

Note: Turning the trimmer counterclockwise raises the frequency and turning it clockwise lowers the frequency. However, turning the trimmer further than needed, after fully opening or closing it, may damage component parts.



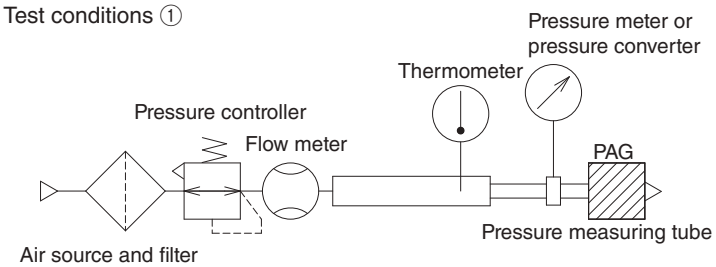
Characteristics of the frequency and flow according to the number of rotations of the trimmer (standard nozzle)





Note 1: According to our test conditions ① .
Note 2: The characteristics of the frequency and the flow vary depending on the piping conditions and the nozzle used.
Note 3: Use devices within the pulse frequency ranges (5 to 15 Hz) shown in the specification tables.
Note 4: Contact us regarding the long nozzle and air amplifier nozzle.

Test conditions ①

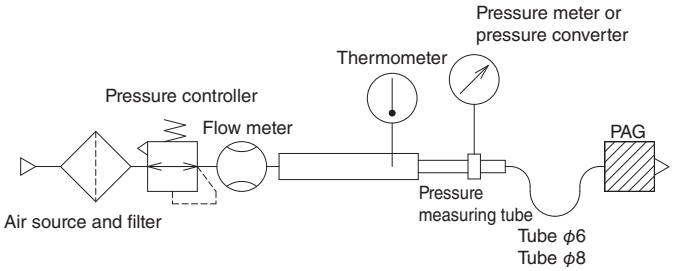


Operations according to piping conditions for pulse blow air guns (standard nozzle)

Operations may be unstable, depending on the piping conditions on the supply side. See the following table.

Model	Operating pressure	Tube ϕ 6 [0.236]			Tube ϕ 8 [0.315]		
		1000 mm [39.370 in.]	3000 mm [118.1 in.]	5000 mm [196.9 in.]	1000 mm [39.370 in.]	3000 mm [118.1 in.]	5000 mm [196.9 in.]
PAG-2	0.35 MPa [51 psi]	○	○	○	○	○	○
	0.5 MPa [73 psi]	○	○	○	○	○	○
	0.7 MPa [102 psi]	○	○	○	○	○	○
PAG-3	0.35 MPa [51 psi]	○	×	×	○	○	○
	0.5 MPa [73 psi]	○	×	×	○	○	○
	0.7 MPa [102 psi]	○	○	×	○	○	○
PAG-4	0.35 MPa [51 psi]	○	×	×	○	○	○
	0.5 MPa [73 psi]	○	×	×	○	○	○
	0.7 MPa [102 psi]	○	×	×	○	○	○

Test conditions ②



Note 1: ○ : Stable operations ×: Unstable operations (according to our test conditions ②)
Note 2: Operations will be unstable if the piping conditions cause pressure drops or insufficient flow.
Note 3: Contact us regarding the long nozzle and air amplifier nozzle.

Handling precautions

⚠ Warning

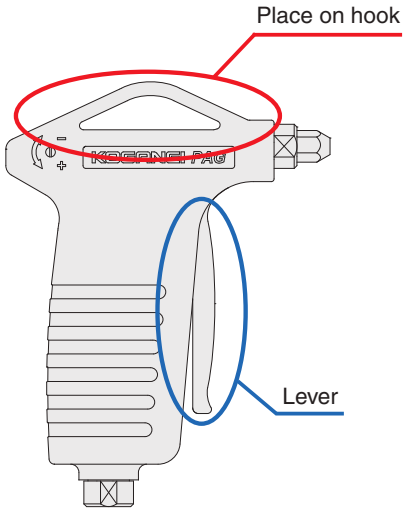
- Do not point the tip of the nozzle at a person.
- Use safety glasses and earplugs because blowing air could blow objects into people's eyes or cause hearing loss.
- Install a cutoff valve on the supply side to ensure safety in case of leaks or damage.

⚠ Caution

- Air containing oil or solids cannot be used. Use cleaned air for the medium (use a filter that has a filtration rating of 40 µm or less). If drainage water, dust, and other contaminants get into this product, they could cause defective operation.
- Pass the medium through a device, such as a freeze-type air dryer or after cooler, to lower the dew-point temperature of the medium to below the ambient temperature so condensation or frost does not occur when the products are blowing.
- Use this product within the pulse frequency ranges shown in the specification tables.
- This product operates on a balance of pressure, so supply enough pressure and volume to keep the pulse operation steady.
- Use a wrench to hold down the flat part of the product, and then tighten within the following torque ranges when piping the supply port and screwing the nozzle.

  Supply side recommended tightening torque: 7 to 9 N·m [61.957 to 79.659 in·lbf]
  Nozzle side recommended tightening torque: 4.5 to 6.5 N·m [39.830 to 57.532 in·lbf]

- Use tubing with an exterior that is not damaged. Do not allow tubing to become severely bent or twisted near the supply port. Doing so could cause air leakage.
- If you leave the product in a location where there is a lot of dust in the air or in a location where dust can be scattered, dust could get inside the product and cause defective operation.
- Do not subject the tip of the nozzle to excessive external force. Doing so could result in damage.
- Applying pressure from the nozzle side could cause defective operation or damage.
- Do not drop, step on, or dump the product. Doing so could result in damage.
- After using this product, put it on a hook or something to store it. Hooking it by the lever could cause defective operation or damage.



⚠ Caution * Read "Safety precautions" on the general catalog website before using this product.