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World First Vacuum+ Pneumatic Shock Absorber (with Sensor)

Suitable for use in semiconductor, food and pharmaceutical production processes that do not permit the leakage of oil
- Also useful for HACCP and ISO14001

Prevents Problems with Product Defects and Environmental Contamination

The use of an internal structure combining vacuum and compression without using oil eliminates any concerns over complaints arising from serious product defects of environmental contamination caused by leakage of oil.

Accommodation of Both Clean Environments and Harsh Environments

The IP67 protective construction enables these shock absorbers to be used in both environments requiring a high degree of cleanliness where conventional oil-based shock absorbers were unable to be used, as well as harsh environments where coolant is used.

Three Jobs with One Device, Reduced Equipment Size and Less Space

As a result of containing a built-in sensor and stopper within the shock absorber body, three jobs can be performed with a single device, realizing shock absorption, stopper function and sensing.

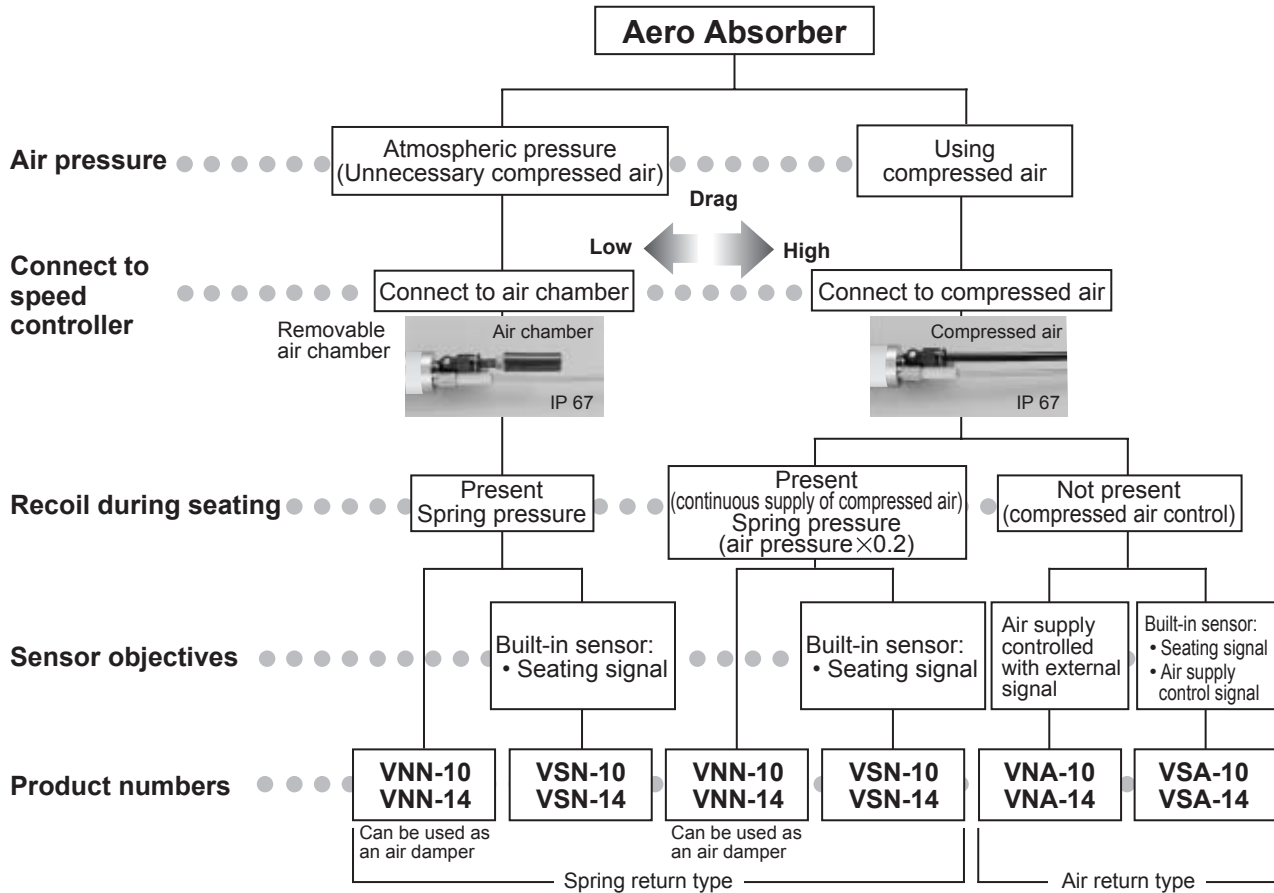
Improved Operating Rates and Reduced Maintenance Costs

The longer service life (3 million operations) and MTBF (mean time between failure) as compared with oil-based shock absorbers enable increased equipment operating rates and reduced maintenance costs.

Improved Productivity

- Since the air return design (connected to compressed air source) eliminates any recoil during seating, there is no need to press in twice.
- The rapid return speed of the piston rod contributes to shortened tact time.
- The low initial impact during collision eliminates the need for a slowdown step.

Model Selection



Specifications

Product No.	Sensor [※]	Recoil during seating	Piston rod return force	Working air pressure (MPa)	Maximum absorbed energy (J)	Maximum equivalent mass (Kg)	Maximum drag value (N)
Spring return	VNN-10	Present Spring pressure	Spring pressure	18N	—	1	105
	VSN-10			20N	—	2	131
	VNN-14		Air pressure	0.3	2.4	7.2	250
	VSN-14			0.5	3.2	9.6	400
Air return	VNA-10	Not present When air supply open	Air pressure	0.7	4	12	570
	VSA-10			0.3	5	15	450
	VNA-14			0.5	7.2	23	720
	VSA-14			0.7	10.8	30	1000
	VSA-14			—	—	—	—

※ A sensor can be installed later for models VNN and VNA.

Mechanical Specifications

Stroke	10mm
Protective structure	IP67
Body material	SUS
Cap material	SUS HRc45 ~
Service life	3,000,000 times (P41 Precaution of use) Available for repair service*
Speed controller	Flexible type Hose nipple with quick coupler Applicable tubes: $\phi 4 / \phi 2.5$
Accessories	Nut $\times 2$ Material : BsBM Nickel plate

* Repair and maintenance services
The following parts can be replaced.

- O-ring
- Spring
- Sensor
- Speed controller

Electrical Specifications (Sensor)

Sensor specs	product No. KS50AL Cartridge type
Type	Contact type
Mode	Normally open : NO
LED lamp	Normally Unlit, Push lit
Cable	2m Oil-resistant $\phi 3$ Min. bending radius: 7mm
Operating point	0.5mm from stopper surface
Repeatability	0.02mm
Contact life	10,000,000 times
Contact rating	DC24V 20mA MAX (10mA recommended) resistance load
Insulation resistance	100M Ω with a 250V DC megger
Withstand voltage	AC500V 50/60Hz for 1 min between each terminal and case

Circuit Diagram

