New Product Information

Benefits:

- Saving up to 70 % air consumption
- Maintenance free – no moving parts
- Simple and easy to operate

Air Amplifier
ZH-X185 Series

ENERGY SAVING SOLUTIONS™

SMC®

Air Amplifier

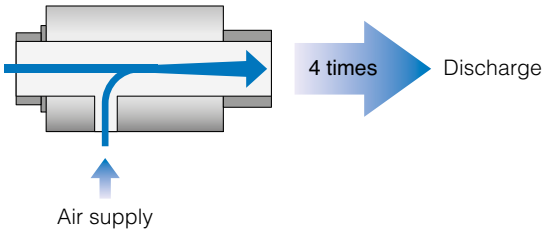
■ What is an Air Amplifier?

It is a simple, light, cost effective tool that takes energy from a small volume of compressed air to produce high velocity, high volume, low pressure output airflow.

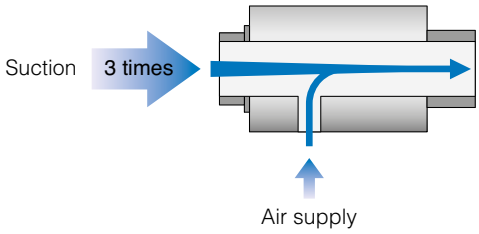
■ How does it work?

In simple terms: it multiplies the flow. For one unit of air you feed into the device, it creates output flow 4 times greater.

Blowing is possible at a flow rate quadruple that of the supplied air.



Suctioning is possible at a flow rate triple the supplied air.



The Air Amplifier uses the Coanda effect, the phenomena in which a jet flow attaches itself to a nearby surface and remains attached when the surfaces curves away from the initial jet direction. Using a small amount of compressed air as their power source, Air Amplifiers pull in large volumes of surrounding air to produce high volume, high velocity outlet flow.

■ Features

- Energy efficiency – 1:4
- Instant on-off control
- Air driven – no electrical supply required
- It is a flow amplifier not a pressure booster
- It can replace a fan/s

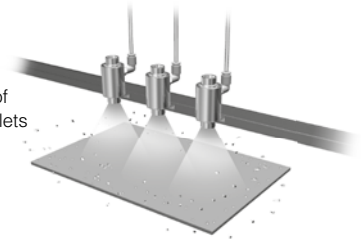
■ Benefits

- Air consumption saving – reduces air consumption for air blows by 70 %
- Maintenance free – no moving parts
- Simple and easy to operate
- Quiet
- Safe

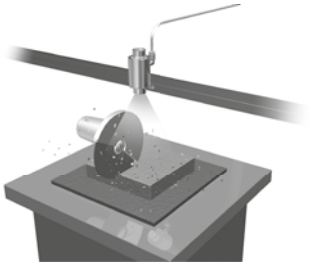
Application examples

Blow

Dispersal of water droplets

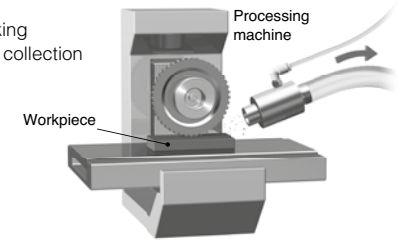


Blowing off cutting chips



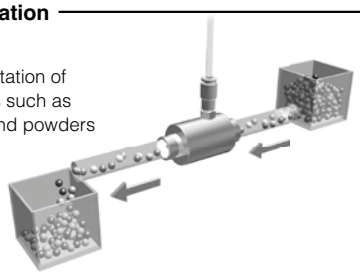
Vacuum

Resin part marking system powder collection



Transportation

Transportation of materials such as pellets and powders



Air Amplifier – technical details at a glance

RoHS

ZH 20 – B □ – X185

Passage diameter

10	13 mm
20	21.6 mm
30	30 mm
40	42 mm

Bracket

–	No bracket
B	With bracket

Dust bag

–	Without dust bag
D*	With dust bag (Supplied with product)

* Hose band attached

⚠ Warning

① Objects that have been sucked in may be discharged with the exhaust air, so make sure the exhaust port is not facing towards people or equipment.

② Do not use in an environment containing corrosive gases, chemicals, organic solvents, sea water or steam, or where it will come into contact with these fluids.

⚠ For safety precautions and common precautions for vacuum equipment, refer to "SMC Product Handling Precautions" (M-E03-3B).

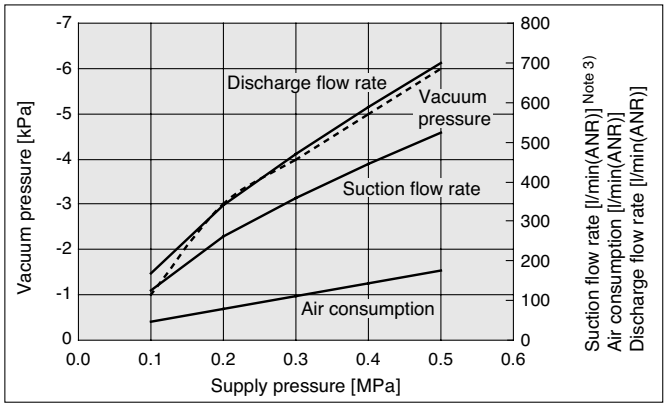
Specifications

Model	ZH10-X185	ZH20-X185	ZH30-X185	ZH40-X185
Body material	Aluminum alloy			
Seal material	NBR			
Bracket material	Steel			
Hose band material	Stainless steel			
Dust bag material	Polyester			
Dust bag filtration	10			
Passage diameter	ø13	ø21.6	ø30	ø42
C [dm³/(S·bar)] (Effective area [mm²]) Note 1)	0.49 (2.46)	1.04 (5.19)	1.97 (9.86)	3.69 (18.47)
Fluid	Air			
Supply pressure range	0 to 0.7 MPa			
Ambient and fluid temperature (°C)	–5 to 80 (with no freezing or condensation)			
Weight (g) Note 2)	92 (101)	417 (436)	929 (990)	1847 (1966)
Bracket assembly	ZH-BK1-10-A	ZH-BK1-20-A	ZH-BK1-30-A	ZH-BK1-40-A
Dust bag assembly	ZH-DB1-10-A	ZH-DB1-20-A	ZH-DB1-30-A	ZH-DB1-40-A

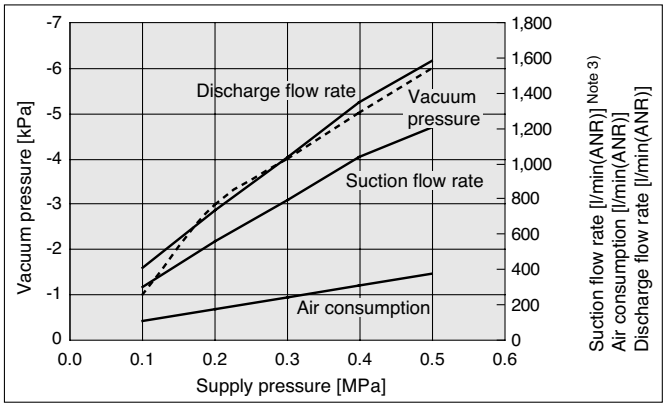
Note 1) The C value as well as the effective area is a theoretical value. Note 2) ( ): Weight including the bracket

Exhaust characteristics

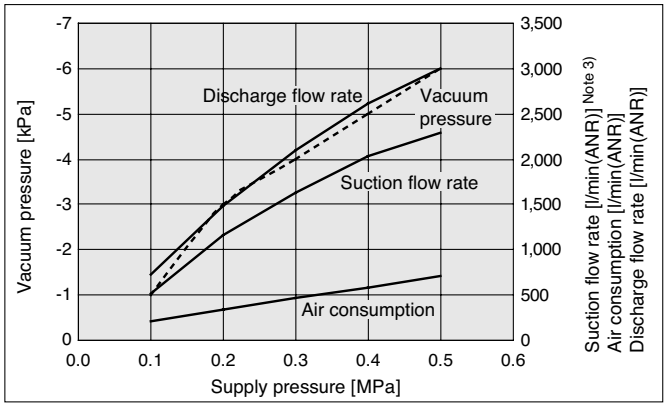
ZH10-X185



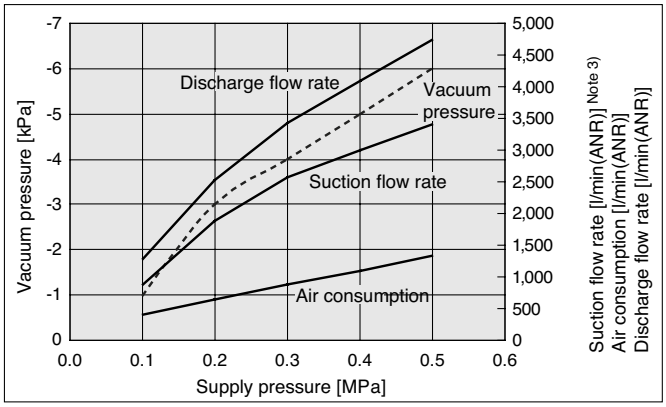
ZH20-X185



ZH30-X185



ZH40-X185

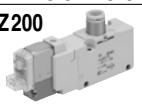


Note 3) Suction flow rate is a theoretical value.

Note 4) The above characteristics are when the discharge outlet is under atmospheric pressure.

Note 5) Back pressure increase should be avoided if you mount a filter or some devices to catch the suctioned particles on the suction outlet side of this product.

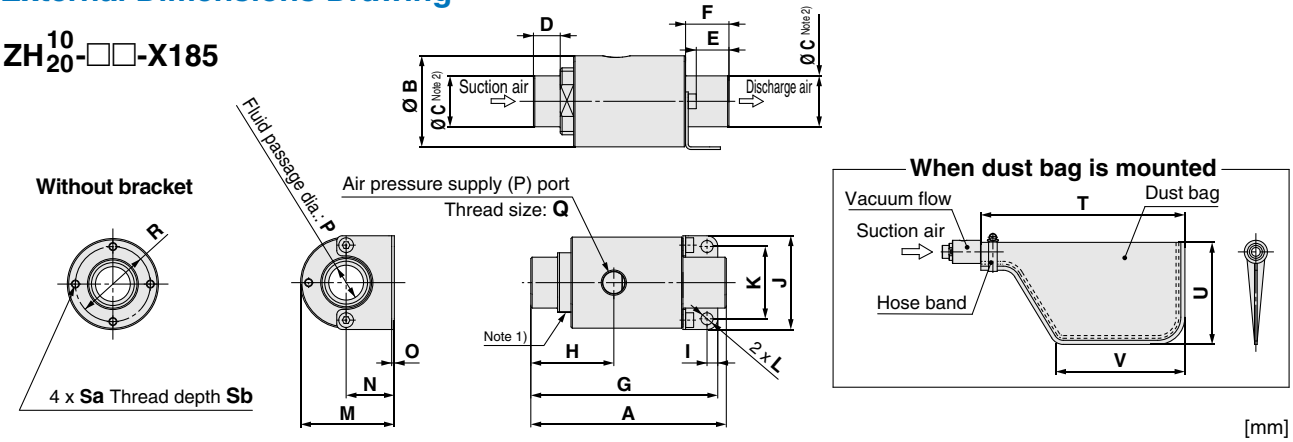
Recommended Sonic Conductance and Solenoid Valves (Reference)

Model	ZH10-□-X185	ZH20-□-X185	ZH30-□-X185	ZH40-□-X185
C [dm³/(s·bar)] Note 6)	1.48 or more	3.12 or more	5.92 or more	11.08 or more
Solenoid valve (Reference)	**VQZ200**  Sonic conductance C [dm³/(s·bar)]: 1.7	**VP300**  Sonic conductance C [dm³/(s·bar)]: 4.2	**VP500**  Sonic conductance C [dm³/(s·bar)]: 8.9	**VP700**  Sonic conductance C [dm³/(s·bar)]: 15.3

Note 6) This is the total recommended value for all devices on the upstream side including the piping to the valve and vacuum flow.

External Dimensions Drawing

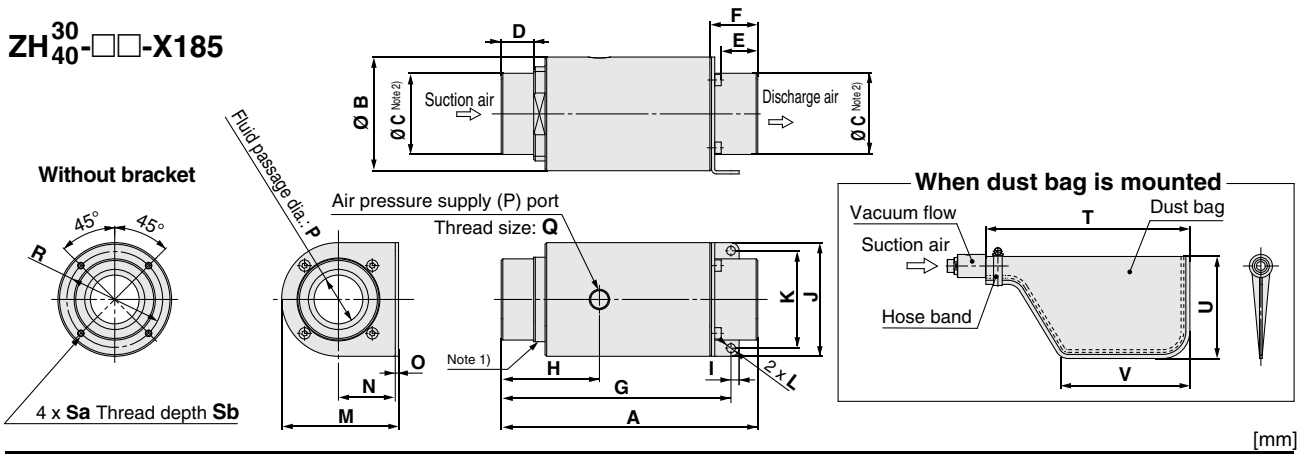
ZH^{10}_{20}-□□-X185



[mm]

Model	A	Ø B	Ø C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	Sa	Sb	T	U	V
ZH10-□-X185	73	34	19	10	12.2	16.2	69.8	31	4	35	27	4.5	35	18	1	13	Rc1/8	28	M3 x 0.5	5	300	150	190
ZH20-□-X185	119.5	55	32	15	18.5	23.5	111	48		56	48	4.5	56.5	29		21.6	Rc1/4	44	M4 x 0.7	8	400	200	250

ZH^{30}_{40}-□□-X185



[mm]

Model	A	Ø B	Ø C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	Sa	Sb	T	U	V
ZH30-□-X185	158	70	50	20	22.5	28.5	146.5	60.5	5	70	60	5.5	72	37	2	30	Rc1/4	59	M4 x 0.7	10	500	250	310
ZH40-□-X185	203	90	64	25	27.2	33.5	196.8	74.5	6	90	78	6.5	92	47	2.3	42	Rc3/8	76			500	250	310

Note 1) This thread portion is intended for use in manufacturing processes. Applying rotational torque to the thread or using it for mounting may result in a change in the characteristics of the product at the time of shipment. Therefore, do not apply rotational torque to the thread or use it for mounting.

Note 2) It is recommended that you use hoses that have an I.D. of Ø C and are made of a soft material as the hoses to be connected to the suction port and the discharge port. Please note that the characteristics of the suction flow and discharge flow may change according to hose length.

We love energy-saving products that save money and help the environment!

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