MVBA-2100 series

BOOSTER REGULATOR

Features

- Increase factory air pressure by up to twice as much.
- Air-only operation requires no power supply, reduces heat generation, and allows easy installation.

Specification

Model	MVBA-2100
Port size	Rc3/8
Medium	Air
Pressure increase rate	Twice
Operating pressure range	0.2~1 MPa
Supply pressure range	0.1~1 MPa
Proof pressure	1.5 MPa
Max. flow rate (*)	1000 ℓ/min
Ambient temperature	+2~+50°C
Installation	Horizontal
Lubrication	Grease (Non-lube)
Attachment	Pressure gauge (PG-25)
Option	Silencer (MSLT-03)
Weight	3900 g

* Max. flow rate at In=Out=0.5 MPa.

Order example

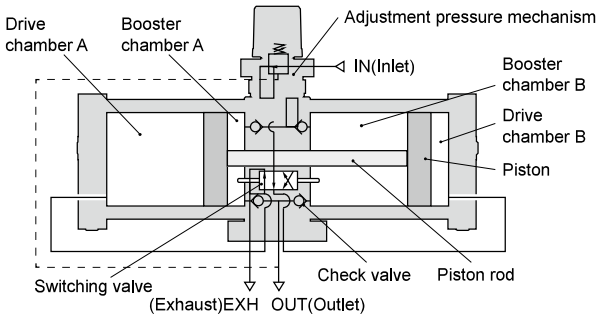
MVBA — 2100 — S — □

- MODEL
- SILENCER
- PORT THREAD
  - Blank: Rc thread
  - **G**: G thread
  - **NPT**: NPT thread

Caution

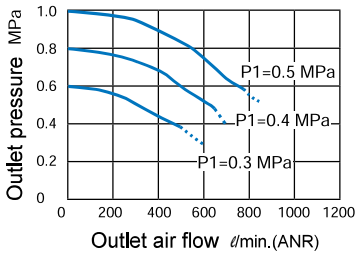
- If the outlet capacity is undersized, pulsation may occur.
- Make sure to install a mist separator at the inlet side of the booster regulator.
- The booster regulator has a sliding part inside, and it generates dust. Also, install a cleaning device such as an air filter or a mist separator on the outlet side as necessary.
- Provide a dedicated pipe to release the exhaust air from each booster regulator. If exhaust air is converged into a pipe, the back pressure that is created could cause improper operation.
- Depending on the necessity, install a silencer on the exhaust port of the booster regulator to reduce the exhaustion sound.
- Allow the sufficient space for maintenance and inspection.

Working Principle

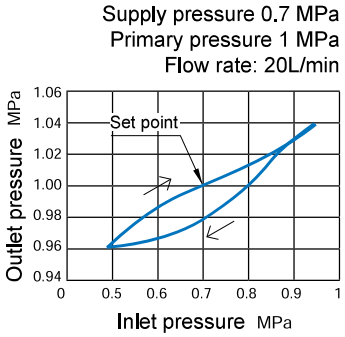


- The IN(Inlet) air passes through the check valve to booster chamber A and B. Meanwhile, air is supplied to drive chamber B via the governor and the switching valve. Then, the air pressure from drive chamber B and booster chamber A are applied to the piston, boosting the air in booster chamber B. As the piston travels, the boosted air is pushed via the check valve to the OUT(Outlet) side. When the piston reaches the switching valve to touch, so that drive chamber B is in the exhaust state and drive chamber A is in the supply state respectively. Then, the piston reverses its movement, this time, the pressures from booster chamber B and drive chamber A boosts the air in booster chamber A and sends it to the OUT side.
- The process described above is repeated to continuously supply highly pressurized air from the IN to the OUT side. The governor establishes the outlet pressure by handle operation and pressure adjustment in the drive chamber by feeding back the outlet pressure.

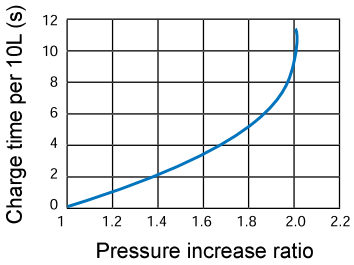
Flow features



Pressure characteristics



Charge characteristics



* When filling tank with air, where Primary side air pressure P_0, air pressure in tank before filling P_1, air pressure after filling P_2, boosting ratio before filling $K_1=P_1/P_0$ and after filling $K_2=P_2/P_0$. Find K_1 and K_2 at first, then read filling time t_1 and t_2 according to graph where boosting ratio K_1, K_2, Finally filling time for tank capacity Q is obtained with

$$T = \frac{Q}{10}(t_2 - t_1).$$

(Each characteristics are just reference, but not assured conditions)

Dimensions