

Biffi Pneumatic Volume Booster Valve

Low Pressure Pneumatic Component

Biffi volume boosters is a low-pressure pneumatic component that converts a low volume pressure signal into a 1:1 ratio high volume output. It is designed for modulating and "on-off" pilot pressure signals and to provide fast response and stability to the pneumatic control system.



Product Data Sheet

PDS-03-09-89-3061-EN Rev. 5 Page 1 of 4
March 2022

Pneumatic Volume Booster Valve

Product Overview

Pneumatic Booster provide a versatile selection with a wide range of signal to output pressure ratios, pipe sizes from 3/8" to 1" NPT, and flow capacities from 1 lt/s to 30 lt/s.

Supply pressure is maximum 12 bar, accepting air, nitrogen or sweet gas. Standard ambient temperature range is from -20 °C to +100 °C, special versions are available on request.

Booster compares pilot pressure to the cylinder pressure (PORT 2) and if the pilot pressure is higher than cylinder pressure, the supply poppet valve opens and the cylinder pressure increases up to pilot pressure. When the cylinder pressure exceeds the pilot pressure, the exhaust poppet valve opens and the cylinder pressure decreases down to pilot pressure.

Bypass puts in communication to the air cylinder port with the pilot port. The Bypass function is to minimize hunting on the actuator operation. Bypass can be excluded.

General Application

Pneumatic actuators and related control systems.

Approvals

- (IEC 61508-1 to 7:2010) - suitable for use in SIL 3
CU TR 012/2011 - certification for the safety of the equipment in explosionproof environment
- CU TR 010/2011 - certification for the safety of machinery

Machinery Directive 2006/42/EC

PED Directive 2014/68/EU

ATEX Directive 2014/34/UE



Technical Data

Supply Pressure:	0 - 12 barg
Pilot pressure:	0.5 - 12 barg
Working Media:	Instrument air, sweet gas Special version for sour gas

Seal Materials according to DIN/ISO 1629:

FKM/FPM (Viton®)	with a working temperature from -20 °C to +100 °C
MFQ (Fluorosilicone)	with a working temperature from -60 °C to +100 °C
Special version	(ask to factory)

Performances

Table 1. CV Values in Accordance to EN1267 Performed with Water

Model/Size	CV Supply	CV Exhaust
3/8"	1.54	3.25
3/4"	4.53	6.62
1"	10.83	14.70

Table 2. Exhaust and Supply Capacity

Size	Exhaust time (s) 500 l tank (from 6 to 0.5 bar)	Supply time (s) 500 l tank (from 6 to 0.5 bar)
25	80 s	60 s
45	39 s	32 s
55	13 s	20 s



Product Data Sheet

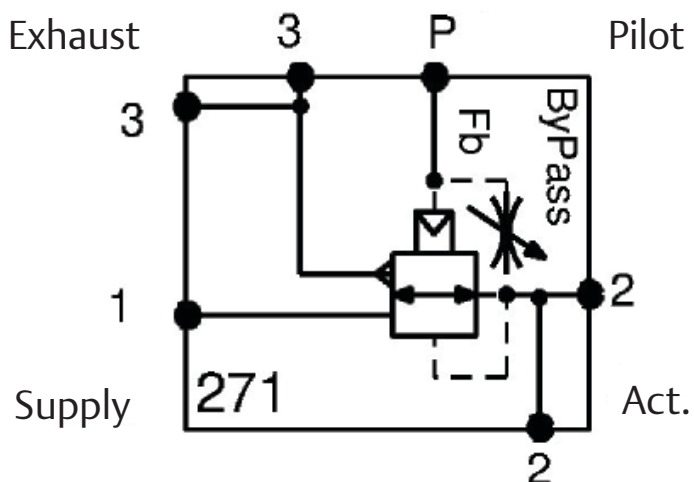
PDS-03-09-89-3061-EN Rev. 5 Page 2 of 4
March 2022

Pneumatic Volume Booster Valve

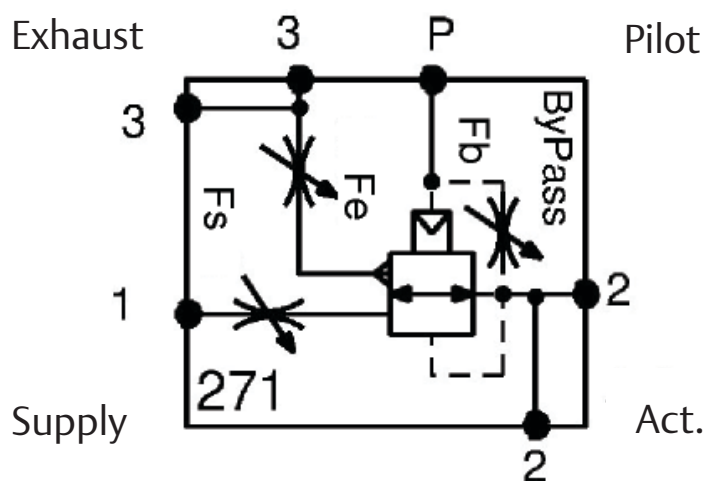
Accessories

Pneumatic volume booster can be supplied, on request, with dust excluder and/or with flow regulators.

315502T010 without Flow Regulators



315502T01R with Flow Regulators



Product Data Sheet

PDS-03-09-89-3061-EN Rev. 5 Page 3 of 4
March 2022

Pneumatic Volume Booster Valve

Overall Dimensional

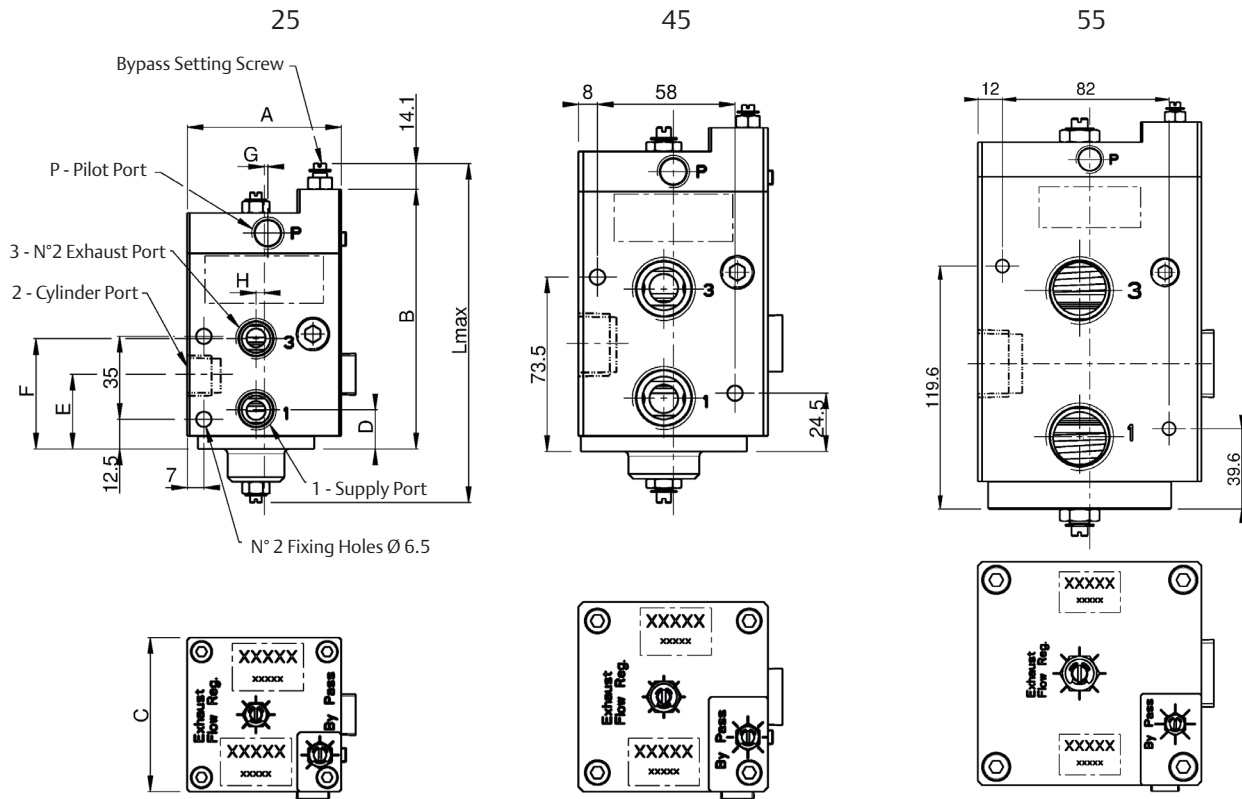


Table 3.

Size	1	2	3	P	A	B	C	D	E	F	G	H	Lmax
25	3/8" NPT	3/8" NPT	3/8" NPT	1/4" NPT	65	109.5	65	16.5	31.5	46.5	1.5	3.5	149.6
45	3/4" NPT	3/4" NPT	3/4" NPT	1/4" NPT	80	136.5	80	22.5	45.5	68.5	0	4	176.2
55	1" NPT	1" NPT	1" NPT	1/4" NPT	110	190.6	110	35.6	71.6	107.6	0	5	221.4

Table 4.

Size	Aluminum Body	SS316/316L Stainless Steel Body
25	1.8 kg	3.2 kg
45	2.8 kg	5.1 kg
55	7.1 kg	13.4 kg



Product Data Sheet

PDS-03-09-89-3061-EN Rev. 5 Page 4 of 4
March 2022

Pneumatic Volume Booster Valve

Ordering Code

Model 2P271-X-YY-Z-V

X - Body: SS316/SS316L Stainless steel B - Body: Aluminium	←
25 - 3/8" NPT Connections 45 - 3/4" NPT Connections 55 - 1" NPT Connections	←
O - Standard R - Supply/exhaust flow regulators ** - Special versions on request	←
1 - MFQ (Fluorosilicone) 2 - FKM/FPM (Viton®) Seals ** - Special versions on request	←

Note:

When it is requested an air inlet flow rate ≤ 0.5 l/s (pressure range 4 to 6 barg), please contact factory.

