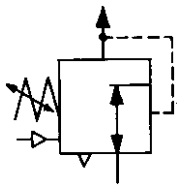
Precision Volume Booster / Differential Pressure Regulator — Type 53.20

Description	Volume boosting air-relays permit precise remote control of regulated pressures with minimal air usage. The normal operating mode produces a direct 1:1 relationship between signal and regulated pressure. Provision can also be made for positive or negative bias between pilot signal and outlet pressure.
Differ.pressure reg.	Manually adjusted differential pressure between pilot signal and outlet pressure remains constant.
Media	Air or dry gases, oil-free and filtered to over 25 µm.
Supply pressure	max. 10 bar / 150 psi at least 0.2 bar / 3 psi above outlet pressure
Flow capacity	280 l/min / 10 scfm, at 7 bar / 100 psi supply and 1.4 bar / 20 psi set pressure
Relieving	Excellent with respect to flow and sensitivity, exhaust valve 6 times bigger than main valve
Air consumption	0.14 - 1.7 bar: 0.5 l/min / 1 scfh, 0.14 - 4 bar: 1 l/min / 2 scfh, 0.14-8 bar: 2 l/min / 4 scfh
Accuracy	Pressure change at mid-range outlet: 0.1% at 0.14-1.7 bar, 0.05% at 0.14-4 bar, 0.02% at 0.14-8 bar
Hysteresis	< 0.05% setting at mid-range outlet — **Repeatability:** < 0.05% setting at mid-range outlet
Sensitivity	< 0.3 mbar / 0.05 psi — **Response speed:** < 0.2 s to 50% load flow change
Flow effect	< 0.7 mbar / 0.01 psi — inlet / relief at 1% flow
Temperature effect	< 1% change over full range -20 °C to 70 °C / -30 °F to 160 °F
Temperature range	-20°C to 70 °C / -4 °F to 160 °F
Materials	Zinc die-casting, passivated and epoxy painted, beryllium copper capsule, NBR (Buna N) diaphragm



¼″ NPT, 280 l/min*

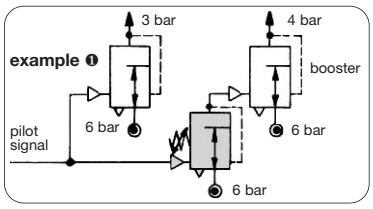
Adjusting by	Flow rate l/min *	Connection thread NPT	Pressure range bar	Order number
Volume booster / differ. press. regulator		K_v: 0.15 (m³/h) supply max. 10 bar		**53.20**
handwheel	280	¼″	0.2 …1	**53.2201.00**
			0.14…8	**53.2204.00**
tapped exhaust	280	¼″	0.2 …1	**53.2401.00**
			0.14…8	**53.2404.00**
screw	280	¼″	0.2 …1	**53.1901.00**
			0.14…8	**53.1904.00**
tapped exhaust	280	¼″	0.2 …1	**53.2101.00**
			0.14…8	**53.2104.00**

53.2204.00

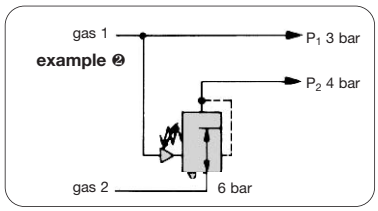
53.1904.00

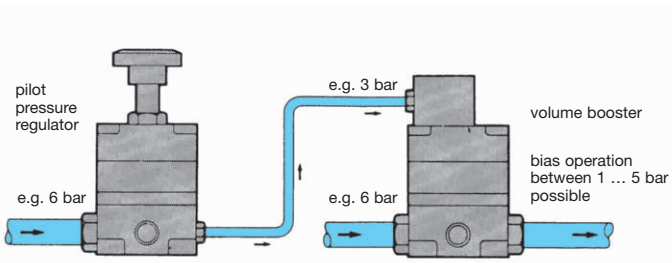
Diaphragm repair kit

diaphragm	nozzle and flat-type gasket	0.2 …1	**53.1000.95 R**
		0.14…8	**53.1000.98 R**

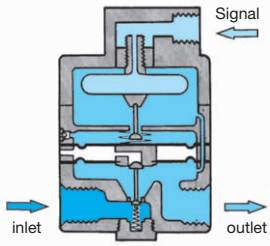


pressure difference $P_1 - P_2$ = constant e. g. 1 bar

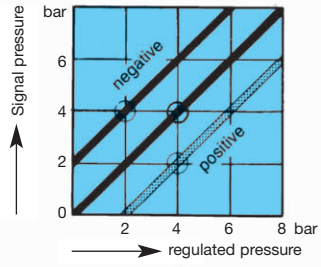




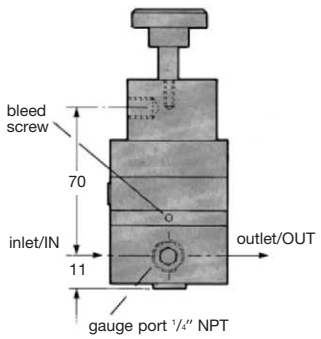
Control of volume booster



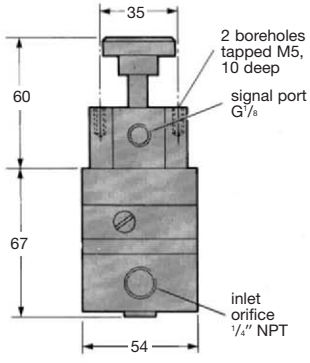
cross-section of booster



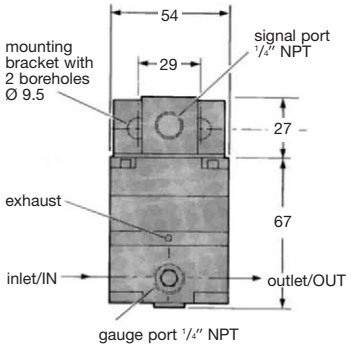
Bias adjustment



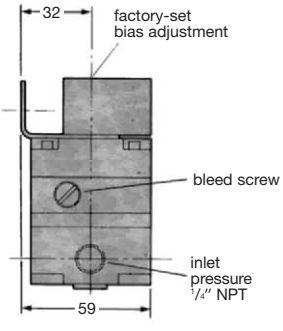
53.22 and 53.23



53.22 and 53.23



53.19 and 53.20



53.10 and 53.20

*1 at 7 bar supply pressure and 1.4 bar outlet pressure

For your information:	1 bar: 14.8 psi	1 l/min: 0.035 scfm	1 mm: 0.039 inch	Pressure gauge: Please consult chapter "Gauges"
	1 psi: 0.069 bar	1 scfm: 28.3 l/min	1 inch: 25.4 mm	

Order example: 53.2204.00