

General

The accuracy of diaphragm metering pumps is affected by the back pressure, especially in the range between no pressure and 1 bar. In pressureless (open) systems, excessive metering occurs due to the mass moment of inertia of the accelerated liquid. Furthermore, metering pumps must be protected against excessive pressure, and undesired flow rates resulting from siphoning must be avoided. The JESCO multifunction valve PENTABLOC has been designed to solve the aforementioned problems. With its five functions, the optimum operation of small metering pumps is ensured.

Installation

The multifunction valve PENTABLOC is mounted directly on the discharge valve of the metering pump.

Technical Data

Housing material: PP, PVC or PVDF
 Packing material: Viton or Hypalon / EPDM
 Diaphragms: Viton or Hypalon
 Threaded connection: input side: union nut G 5/8 or G 3/4
 output side: plug G 5/8 or 3/4

Response pressure of the safety valve: approx. 11 bar
 Back pressure: approx. 3 bar
 Weight: approx. 210 g (PVC version)
 Application range: Metering pumps with up to 45 l/h at viscosities of up to 20 mPa·s

Other materials and connections upon request.

One valve ... 5 functions

1st function

Back pressure function to optimize the metering accuracy. At the same time, the valve prevents excessive metering in pressureless systems.

2nd function

Antisiphon function to avoid undesired siphoning.

3rd function

Safety valve to protect the pump against excessive pressure.

4th function

Pressure relief of the feed pipe by returning the medium to the supply tank (important for maintenance).

5th function

Metering monitoring by a jumping ball in a transparent pipe (only for PVC version).

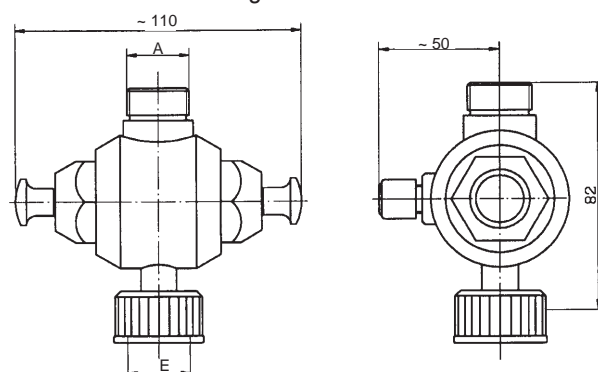


Selection Table

Material			Connection A + E	
Housing	Diaphragm	Packing	G 5/8	G 3/4
PVC	Viton	Viton	12601001	12601011
	Hypalon	Hypalon/EPDM	12601025	12601026
PP	Viton	Viton	12601003	12601013
	Hypalon	Hypalon/EPDM	12601007	12601008
PVDF	Viton	Viton	12601005*	12601015

* Screw-on thread matching JESCO metering pumps with PVDF head.

Dimension Drawing



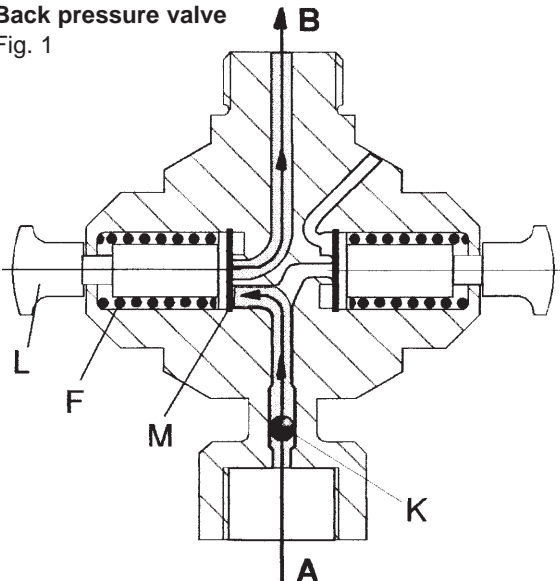
Functions
Back pressure valve
 Fig. 1


Fig. 1 shows the back pressure function which is realized as follows. The liquid entering through A pushes diaphragm M to the left against tappet L loaded with spring F and can then escape upwards through connection B. The pressure required for the diaphragm to move is approx. 3 bar. The pulsating stream of liquid entering the metering pump causes ball B to jump visibly.

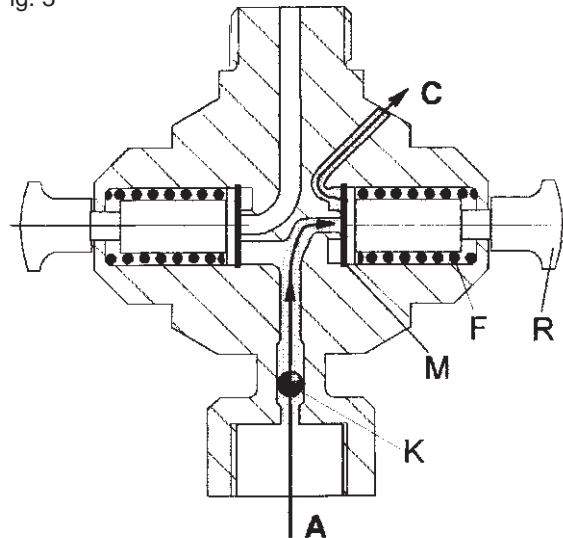
Safety valve
 Fig. 3


Fig. 3 shows the function of the safety valve. If the system pressure exceeds approx. 11 bar, e.g. as a result of a shut valve, a pressure develops below the diaphragm which moves diaphragm M to the right against spring tension F. The liquid can be returned from connection C to the supply tank.

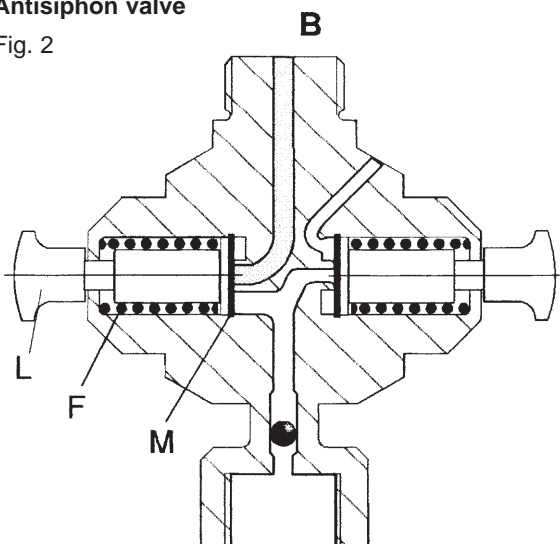
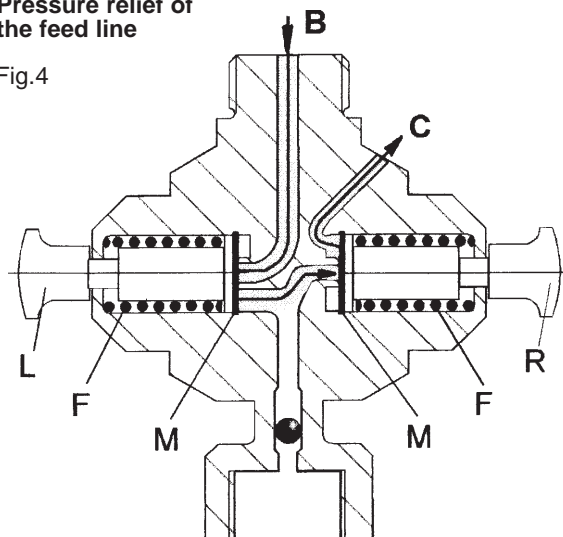
Antisiphon valve
 Fig. 2


Fig. 2 shows the function of the antisiphon valve. As in addition to the spring load, the vacuum forces the diaphragm to remain on the seat, undesired chemical cannot be sucked in from discharge side B neither by a system-dependent vacuum nor by siphoning.

Pressure relief of the feed line
 Fig. 4


It is possible to use the valve to take pressure from the feed line (see fig. 4). If the metering pump is switched off and both tappets L and R are removed, the liquid can escape from the discharge line via connection B to connection C.