300 Series

Automatic Hydraulic Control Valves

FLOW RATE CONTROL VALVE

FR

30-6-FR

DOROT model "FR" is an automatic, pilot controlled, rate-of-flow control valve, activated by the pressure of the pipeline.

The valve maintains a preset, steady flow rate in the network, regardless of pressure variations and flow demand.

The valve fully opens when the flow demand is below the preset maximum value or when the system pressure cannot supply the required flow. In such cases the head loss of the valve is negligible.

An orifice plate is assembled on the upstream flange of the valve, creating a small pressure differential when the required flow rate passes through it.

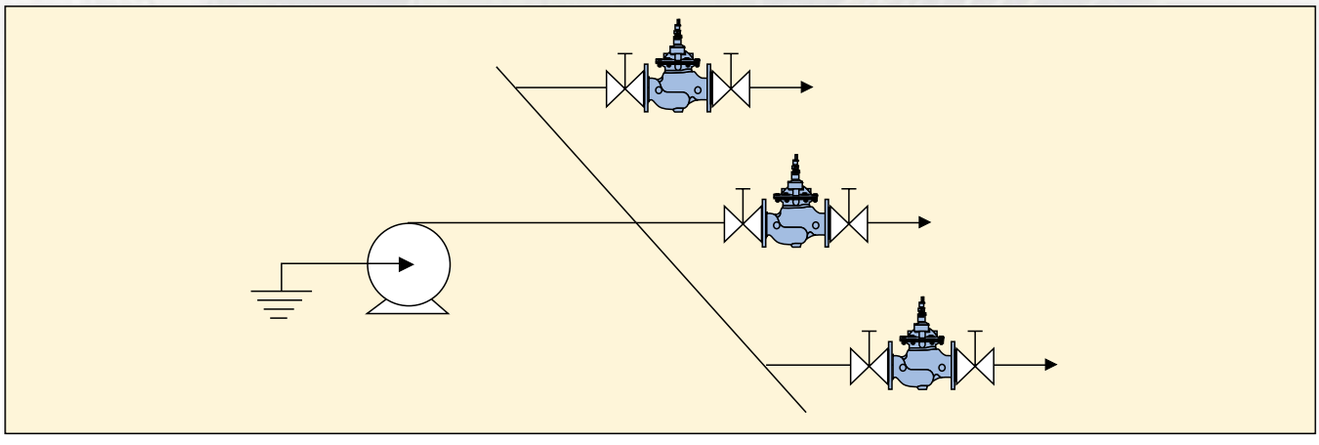
A 3-way differential pilot valve, sensing the pressure on both sides of the orifice plate, is set to maintain the preset differential, hence the flow rate.

The pilot opens the main valve only if the flow is below the preset value, or closes it, when the flow exceeds the preset value.

The main valve is supplied in two models:
Model 30, 30A for medium pressures (up to 16 bar / 230 psi)
Model 31, 31A for high pressures (up to 25 bar / 350 psi).

For further information see p. G5; and graph #2 on page G5-b.
For pilot data refer to p. G6- d.

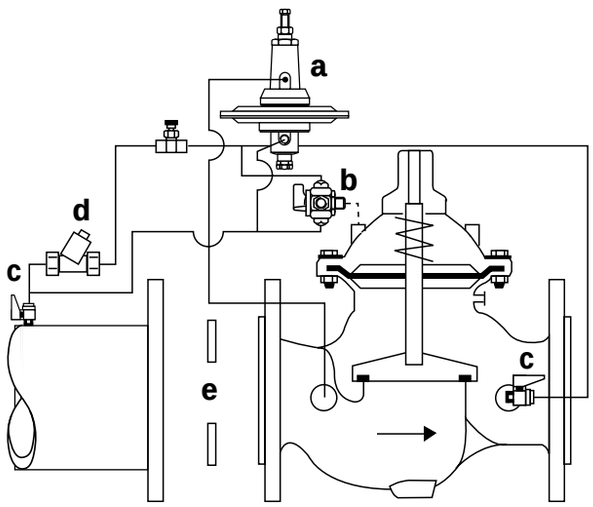
Typical Application:



The "FR" Valves, installed in independent outlets of a pressure system, limit the flow of each outlet to the preset value.

KIBBUTZ DOROT Mobile Post HOF ASHKELON 79175 ISRAEL.
Export Dept.: Tel. 972-8-6808848 Fax. 972-8-6808751 • E-mail: dorotexp@netvision.net.il • Web-site: http://www.dorot.com

Schematic Control Diagram



a. 2-Way Differential Pilot Mod. 76-600

b. Manual Selector Valve Mod. SY3

c. 1/2" Ball Valve Mod.34-1/2

d. 1/2" Filter
(assembled upstream of the valve)

e. Orifice Plate

Purchase Specifications

(Insert value)

- The valve will limit the flow rate to *(value)* regardless of varying pressure or demand.
- The valve will be controlled by a differential pilot valve, sensing pressure differentials created by an orifice plate.
- The valve will be a hydraulically operated, diaphragm actuated, Globe Type.
- The main valve will consist of a removable SST seat and resilient Rubber seal fully supported by a seal disc.
- The stem will be guided at the top by a replaceable guide bearing in the valve bonnet, and at the bottom by a Bronze centering device, connected to the seal disc and moving freely inside the seat.
- No bottom guide bearing is permitted.
- The diaphragm will be fully supported, top and bottom, by rigid discs and will be connected to the stem in a way which enables fast and easy replacement on site.
- No external packing gland and piston activation is permitted.
- Face-to-face length dimension meets ISO 5752(S-1) Standard.
- Flange standard will be to *(network standard)*.

The control system will consist of:
- 2-Way Differential Pilot Valve
- Orifice Plate
- Manual Override Selector Valve
- Self-Flushing, Removable, Internal Filter.

The valve shall be DOROT mod. 30 *(31)* - *(size)* - FR or equal in all aspects.

Design Notes

The orifice plate is calculated to create 2-2.5m (3-3.5 psi) pressure loss at the designed flow rate.

A pressure sensing port, 1/2" minimum size, should be provided upstream of the valve.

A predesigned flow rate may be modified by pilot adjustment in limited (-10%, +40% approx.) range. A larger change will require a new orifice plate.

Operating Data Checklist

(Please fill out and send to the distributor when ordering)

Required Flow Rate: _____

Maximum Upstream Pressure: _____

Optional Features

Electric On-Off Control *(add code "**EL**").*
When ordering specify "normally open" (N.O.) or "normally closed" (N.C.).
See p. 1A-1 for further information.

Hydraulic Check Valve Function *(add code "**CV**").*
See p. 1B-1 for further information.

Pressure Reduction *(add code "**PR**").*
See p. 2A-1 for further information.

How To Order

Please specify the requested valve in the following sequence (see example below):

Model	**Size**	**Connection Standard**	**Control Function**	**Additional Features**	**Special Instructions**
30, 30A 31, 31A [D]	(Inch): 1 1/2" - 20"	ISO, ANSI, JIS etc.		Electric On-Off Control	
30 —	6 —	ISO PN16 —	FR	/ EL (N.O.) —	Position Indicator