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Analytical Products and Solutions

MAXUM edition II

Model 20 Diaphragm Valve Specifications

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Basic Description

The Model 20 is an air actuated, diaphragm-plunger type valve for use in the Siemens line of Process Gas Chromatographs (PGCs) as part of sample introduction technology. It can be applied to vapor and liquid samples. The valve is an air actuated 6 port valve and comes with 6 inch (15.25cm) leads for port connection. It is designed to operate for over 1 million cycles before maintenance may be needed.

Function

The Model 20 valve is used for the injection of vapor (external sample loop) or liquid (internal sample loop) samples into the "column train" of the analyzer. It is especially well suited for higher pressure applications than the standard Model 50 or 11 valves. The valve is available for low pressure up to 200 psi (1380 kPa) and high pressure up to 1500 psi (10350 kPa) versions.



Model 20 Valve Specifications

Body Dimensions	2.75" (70 mm) diameter x 2.75" (70 mm) high.
Installation	Clamp type. Typically mounts in the over of the analyzer.
Number of Ports	6
Sample Filter	5 micron recommended (not furnished with valve).
Internal Loop Sample Size	2 microliters standard. (Other sizes are available on special request).
External Loop Sample Size	170 microliters standard. (Other sizes are available on special request).
Maximum Operating Temperature	250°F (122°C) standard.
Maximum Sample Pressure	200 psi (1380 kPa) gage instrument air standard. 1500 psi (10350 kPa) gage with 2 80 550 kPa (80 psi) gage air signals. Higher operating pressure available on special request.
Minimum Sample Pressure	5 psig (34.5 kPa).
Maximum Leak Rate Between Ports	Less than 1 microliter per minute between ports.
Material In Contact With Sample	316 stainless steel and Teflon, standard. Other materials are available on special request.
Connection Size And Type	1/16" (1.6 mm) O.D. tubing, with Swagelok fittings.
Actuating Air	50 to 80 psig (345 kPa to 550 kPa) instrument air standard. 80 psig (550 kPa) maximum. Helium or nitrogen may be substituted for air.
Total Switching Time	50 psig (345 kPa) instrument standard. Helium or nitrogen may be substituted. 20 milliliters (at standard temperature and pressure) of actuating air required for each valve operation.
Mounting	Clamp type
Other	A carrier purge (helium, hydrogen, or nitrogen) may be used (an eternal low-pressure gas supply is required).

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