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Analytical Products and Solutions

MAXUM edition II

Model 20 HT Diaphragm-Plunger Valve Specifications

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Basic Description

The Model 20 HT is the High Temperature version of the Model 20 valve. It 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 (15.25 cm) leads for port connection. It is especially well suited for higher temperature applications than the standard Model 20 or 11 valves. The valve is designed to operate for over 1 million cycles before maintenance may be needed.

Function

The Model 20 HT valve is used for 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 application than the standard Model 50 or 11 valves. The valve can be applied to pressures up to 500 psi (3450 kPa) at 300°F (152°C) or up to 100 psi (690 kPa) at 450°F (234°C).



Model 20 HT Valve Specifications

Dimensions	2.75" (70 mm) diameter x 2.75" (70 mm) high.
Installation	Clamp type. Typically mounts in the oven of the analyzer.
Number of Ports	6
Sample Filtration	5 micron recommended. Filter not supplied with the 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 Conditions	300°F (152°C) and 500 psi (3450 kPa). 450°F (234°C) and 100 psi (690 kPa) maximum for special applications.
Maximum Leak Rate	Less than 1 microliter per minute between ports
Sample Wetted Material	316 stainless steel and Teflon, standard. Other materials are available on special request.
Connection Size	1/16" (1.6 mm) O.D. tubing, with Swagelok fittings
Actuating air	50 psig (345 kPa to 550 kPa) instrument standard. 80 psig (550 kPa) required for operating pressure above 200 psig (1380 kPa). An additional actuating airline is needed for high pressure applications above 200 psig (1380 kPa). Helium or nitrogen may be substituted for air. 20 milliliters (at standard temperature and pressure) of actuating air required for each valve operation.
Total Switching Time	150 milliseconds (total time from initiation to completion of change in valve state).
Purging	Valve body can be optionally purged with helium. Requires external source of low pressure helium at 5 cc/min.
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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Siemens Product Data Sheet
February 2018

Published by
Siemens Industry, Inc.
Process Automation
Process Industries and Drives
100 Technology Drive,
Alpharetta, GA 30005
1-800-964-4114
info.us@siemens.com

Subject to change without prior notice
Order No.: PIASS-00012-0218
Printed in USA
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