

# SIEMENS

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Analytical Products and Solutions

## MAXUM edition II

### Model 11 Diaphragm-Plunger Valve Specification

[usa.siemens.com/processanalytics](http://usa.siemens.com/processanalytics)

#### Basic Description

The Model 11 is an air actuated, diaphragm-plunger type valve available for use in the Siemens line of Process Gas Chromatographs (PGCs) as part of sample introduction and column switching technology. It is available in standard and low dead volume (LDV) versions both of which are supplied in either 6-port or 4-port configurations. The standard version comes with 6 inch (15.25cm) leads for port connection while the LDV version allows for direct connection to the valve cap via Valco port connections.

#### Function

The 6-port versions fill two analytical needs. The first is for use with an external sample loop for injection of vapor sample into the analytical application while the second fills the need of column switching techniques such as backflush, heartcut or trap-bypass. The 4-port versions primarily are used as a sample valve with a fixed internal volume that can be used for the introduction of either vapor or liquid samples. Both 6-port and 4-port Model 11s come in low dead volume (LDV) versions for applications that require a reduction in system dead volume or smaller sample injection size.



Body Dimensions	2.25" (6 cm) diameter x 3" (7 cm) high.
Installation	Clamp type. Typically mounts in the oven of the analyzer.
Number of Ports	4 or 6
Sample Filtration	5 micron recommended. Filter not supplied with the valve.
External Sample Loop Size	Standard Model 11: 50 microliters and larger. 170 microliters standard. LDV Model 11: 9 microliters and larger. User must specify loop size. External 6 inch adapter leads available.
Internal Sample Loop Size	Standard Model 11: 2 & 5 microliter valves. 10 & 20 microliter caps. Other sizes on special request. LDV Model 11: 0.5, 2 & 5 microliter valves. 10 & 20 microliter caps. Other sizes on special request.
Maximum Operating Temperature	250°F (122°C) standard. The Model 20 HT Sample Valve is recommended for higher temperatures.
Maximum Sample Pressure	300 psig (2068 kPa) standard. The Model 20 Sample Valve is recommended for higher operating pressures.
Maximum Leak Rate	Less than 1 microliter per minute between ports.
Sample Wetted Material	316 Stainless Steel and Teflon standard. Monel and Teflon or Hastelloy and Teflon available on request.
Connection Size	Standard Model 11: 1/16in (0.16cm) OD tubing with Swagelok® fittings. LDV Model 11: 1/16in (0.16cm) tube Valco fittings
Actuating Air	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.
Total Switching Time	150 milliseconds (total time from initiation to completion of change of valve state).
Purging	Valve body can be optionally purged with helium. Requires external source of low pressure helium at 5 cc/min.

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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-00010-0218  
Printed in USA  
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