



## Carten CMDH and CMDAH Series Valves High Purity High Pressure Springless Diaphragm Valves

### Ultra-High Purity High Performance Springless Diaphragm Valves for High Pressure Applications

#### Product Features...

- Vacuum to 3000PSIG working pressure
- Manual and Pneumatic operation
- 100% Helium leak tested for high leak integrity and containment
- 100% Clean room welded and assembled for high purity
- 100% DI-Water cleaned for ultra-cleanliness
- Springless, packless design to support high purity applications

#### UHP High Performance High Pressure Diaphragm Valves

#### Carten CMDH Series – Manually Operated

The Carten CMDH series manually operated diaphragm valves are designed for high performance gas and chemical distribution in high pressure applications. The manual multi-turn model supports superior media purity and safety through its springless packless design delivering high performance at high pressure ratings. The CMDH series handle is supplied with a open/close indicator which provides a visual reference for the valve position. All Carten UHP valve are assembled and tested in a class 10 cleanroom which support the final cleanliness and purity for Carten CMDH range of products. The CMDH series delivers superior performance and lower overall operating costs for high pressure applications in the semiconductor, photovoltaic, flat panel display, LED, fibre-optic and other high technology industries.

Applications for the CMDH series regulator include:

- Gas Cabinets
- Gas Chambers
- Gas Panels
- Gas Sticks
- Valve Manifold Boxes and Valve Manifold Panels
- Gas Isolation Boxes
- Processing tools
- Bubbler Systems and Canister Isolation Valves

For further information contact: [Carten Controls Ltd. sales@cartencontrols.com](mailto:sales@cartencontrols.com) or [www.cartencontrols.com](http://www.cartencontrols.com)  
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- High Pressure Gas and Solvent Systems

## CMDH and CMDAH Series Key Performance Data

Size (inch)	Maximum Working Pressure	Pneumatic Air Supply Pressure (CMDAH series)	Temperature Range	Leak Rate (atm cc/sec)	Cv	Grade
1/4"	3000 PSIG (207Bar)	58~100 PSIG (4~7Bar)	-10°C ~ 80°C	1 x 10 <sup>-9</sup>	0.10	EP, BA

## Carten CMDAH Series – Pneumatically Operated Normally Closed

The Carten CMDAH series pneumatically operated diaphragm valves are designed for high performance gas and chemical distribution in high pressure applications. The pneumatically operated model facilitates automatic and remote isolation of high pressure media and supports superior media purity and safety in the gas system. All Carten UHP valve are assembled and tested in a class 10 cleanroom which support the final cleanliness and purity for Carten CMDAH range of products. The CMDAH series delivers compliments the manually operated series and supports superior performance and lower overall operating costs for high pressure applications in the semiconductor, photovoltaic, flat panel display, LED, fibre-optic and other high technology industries.

Applications for the CMDAH series regulator include:

- Gas Cabinets
- Remote and Automated Isolation
- Gas Chambers
- Gas Panels
- Gas Sticks
- Valve Manifold Boxes and Valve Manifold Panels
- Gas Isolation Boxes
- Processing tools
- Bubbler Systems and Canister Isolation Valves
- High Pressure Gas and Solvent Systems

## Product Specifications – CMDH and CMDAH Series

### Pressure Rating (per criteria of **ANSI/AME B31.3**)

- Maximum rated working pressure: 3000 PSIG (204 Bar)
- Pneumatic air supply pressure: 58~100 PSIG (4~7 Bar) [CMDAH series]
- CMDH burst pressure: (940 Bar)
- CMDAH burst pressure: (824 Bar)

### Materials of Construction (Wetted Area)

- Body: 316L Stainless Steel (Electropolished or BA)
- Seat: PCTFE (Vespel® optional for 3500 PSIG model only)
- Diaphragm: Nickel-Cobalt Alloy for high durability and corrosion properties

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## High Purity High Pressure Springless Diaphragm Valves

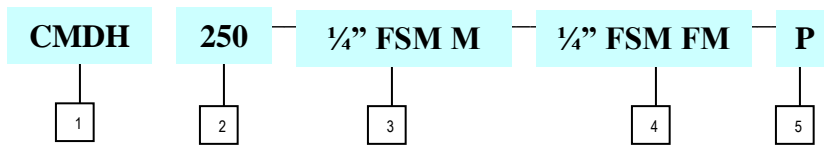
- Handle: Aluminium
- Pneumatic Actuator: Aluminium [CMDAH series]

### Key Performance Parameters

- Flow coefficient: CV = 0.10 (3000 PSIG)
- Maximum inboard leak rate:  $1 \times 10^{-9}$  atm cc/sec He
- Internal surface finish: 10Ra or 5Ra microinch (0.25 $\mu$ m or 0.13 $\mu$ m)
- Operating temperature:
  - PCTFE seat: +14°F to +176°F (-10°C to +80°C)
  - VespeI® seat: +14°F to +350°F (-26°C to +177°C)
- Particle Inspection: 0 particles of 0.1 $\mu$ m and larger at 60~80 PSIG of N<sub>2</sub> gas flowing (EP grade)

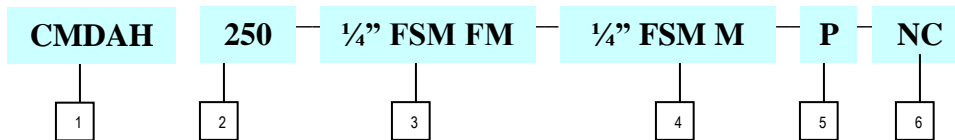
### Product Selection and Ordering Information

Product example #1



### Product Selection and Ordering Information

Product example #2



(1) Product Series	(2) Body Size	(3) Inlet Connection
CMDH = Manual Multi-Turn High Pressure CMDAH = Pneumatic High Pressure	250 = 1/4"	-035 = 1/4" OD x 0.035" W/T Tube Stub 1/4" FSM M = 1/4" Face Seal Male 1/4" FSM FM = 1/4" Face Seal Female 1/4" C/LOK = 1/4" Twin Ferrule Compression
(4) Outlet Connection	(5) Surface Quality	(6) Actuator Type
<b>If different to the inlet then specify...</b> -035 = 1/4" OD x 0.035" W/T Tube Stub 1/4" FSM M = 1/4" Face Seal Male 1/4" FSM FM = 1/4" Face Seal Female 1/4" C/LOK = 1/4" Twin Ferrule Compression	Blank = BA Standard (20Ra) P = Electropolishing (10Ra)	NC = Normally Closed
(7) User Option		
Customisation		

Please contact Carten Controls Ltd. for further information to support flow capabilities, valve selection and media compatibility applications.

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## **Quality, Engineering and Performance**

Carten Controls is committed to providing the highest quality products, service and support for our clients that meets customer expectations. Carten's commitment to our customers and quality is demonstrated through our ongoing membership and compliance to the IS EN ISO9001:2008 QMS programme and by the implementation of continuous improvement initiatives throughout the company.

It is Carten's intention to provide specific customer drawings for each UHP valve configuration ordered by our customers. This will ensure that you – our customer – will receive a detailed dimensional drawing including the UHP valve performance data for the exact product ordered thus ensuring clarity and transparency for customer orders.

Carten Controls are part of the Fujikin Group of companies.

Carten Controls Ltd. and its products comply with the requirements of Pressure Equipment Directive (ref.# 97/23/EC) and sound engineering practices (ref. CE040).

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