

# KITZ SCT

## XD Series

### Diaphragm Valve



## Features

- Developed in pursuit of minimizing the weight and the footprint of valve while maintaining the same performance with our legacy diaphragm valve series.
- For ultra high purity application, efficient purging design and minimal particle generation

## Specifications

|                               |                                       |                                                                                  |                                               |                                               |
|-------------------------------|---------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Size                          |                                       | XD4 (1/4")                                                                       | XD8 (1/2")                                    | XD12 (3/4")                                   |
| Cv                            |                                       | 0.27                                                                             | 0.7                                           | 1.7                                           |
| Maximum Operation Pressure    |                                       | 142psig(0.98 MPa(G))                                                             |                                               |                                               |
| Wetted Area Volume            |                                       | 0.083in <sup>3</sup><br>(1.36cm <sup>3</sup> )                                   | 0.445in <sup>3</sup><br>(7.3cm <sup>3</sup> ) | 2.11in <sup>3</sup><br>(34.6cm <sup>3</sup> ) |
| Fluid Temperature             | PCTFE                                 | -10°C~80°C                                                                       |                                               |                                               |
|                               | PI / PFA                              | -10°C~150°C                                                                      |                                               |                                               |
| Atmospheric Temperature       |                                       | -10°C~60°C                                                                       |                                               |                                               |
| Leak Rates                    | Across the Seat<br>He Leak Test Rates | $\leq 1 \times 10^{-9}$ sccs<br>( $\leq 1 \times 10^{-10}$ Pa·m <sup>3</sup> /s) |                                               |                                               |
|                               | Inboard He Leak<br>Test Rates         | $\leq 1 \times 10^{-9}$ sccs<br>( $\leq 1 \times 10^{-10}$ Pa·m <sup>3</sup> /s) |                                               |                                               |
| Actuation Pressure(Pneumatic) |                                       | 58-102psig(0.4-0.7MPa(G))                                                        |                                               |                                               |
| Cycle Life *1                 | Manual Valve                          | 100,000 cycles                                                                   |                                               | 30,000 cycles                                 |
|                               | Pneumatic Valve                       | 4 million cycles                                                                 |                                               | 300,000 cycles                                |

|                   |                                                                             |    |                                                                            |
|-------------------|-----------------------------------------------------------------------------|----|----------------------------------------------------------------------------|
| Grade             | STD                                                                         | EP | SEP                                                                        |
| Body Material     | SUS316L                                                                     |    | SUS316LE<br>(Double melt material)                                         |
| Surface Roughness | $\leq R_z$ 126 $\mu$ in(3.2 $\mu$ m)<br>$\leq R_a$ 20 $\mu$ in(0.5 $\mu$ m) |    | $\leq R_z$ 28 $\mu$ in(0.7 $\mu$ m)<br>$\leq R_a$ 5 $\mu$ in(0.13 $\mu$ m) |
| Polish            | Mechanical Polished                                                         |    | Electro Polished                                                           |
| Cleaning          | Degreasing + Precision Cleaning                                             |    |                                                                            |
| Packaging         | Single bagged Package                                                       |    | Double bagged Package                                                      |

|           |                   |
|-----------|-------------------|
| Body      | SUS316L, SUS316LE |
| Seat      | PCTFE, PI, PFA    |
| Diaphragm | Cobalt alloy      |

\*1 Test Condition / Gas : N2 Pressure : 142psig (0.98 MPa(G))

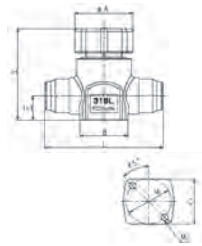
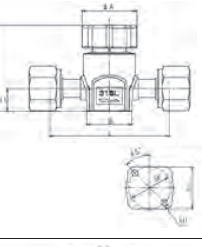
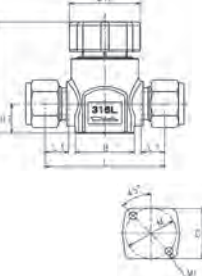
## Product Code Table

| Model                           | Size                                          | Operation                               | Valve Shape  | Connection                                         | Seat Material                  | Handle Color                                                                                                                 | Grade + Body Material                                                                                                                                        |
|---------------------------------|-----------------------------------------------|-----------------------------------------|--------------|----------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XD                              | 4                                             | M                                       | S            | V                                                  | C                              |                                                                                                                              | EP-316L                                                                                                                                                      |
| XD :<br>XD Type Diaphragm Valve | 4 : 1/4"<br>6 : 3/8"<br>8 : 1/2"<br>12 : 3/4" | M : Manual Valve<br>C : Normally closed | S : Straight | V : CVC male<br>VF : CVC female<br>S : Compression | C : PCTFE<br>A : PFA<br>P : PI | Not Shown : Blue(Standard)<br>RD : Red<br>GR : Green<br>SL : Silver<br>BK : Black<br>YE : Yellow<br>BR : Brown<br>WH : White | STD-316L : Mechanical Polished+SUS316L<br>EP-316L : Electro Polished+316L<br>SEP-316LE : Electro Polished+316LE*<br><br>*SEP-316LE: 1/4", 1/2" are available |

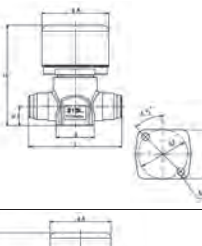
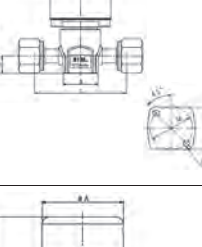
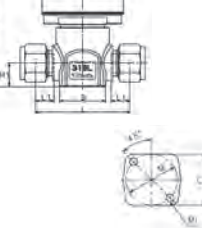
## Dimensions

Unit : inch(mm)

### Manual

| Model                                                                              | Model      | Connection      | L               | L1             | H              | H 1            | A              | B              | C              | M              | M 1                         |
|------------------------------------------------------------------------------------|------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------------------|
|   | XD4MS-V□   | 1/4"CVC Male    | 2.24<br>(57.0)  | —              | 1.93<br>(49.0) | 0.43<br>(11.0) | 1.50<br>(38.0) | 1.10<br>(28.0) | 0.98<br>(25.0) | 1.00<br>(25.4) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                    | XD8MS-V□   | 1/2"CVC Male    | 3.03<br>(77.0)  | —              | 2.38<br>(60.0) | 0.63<br>(16.0) | 1.50<br>(38.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | 1.10<br>(28.0) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                    | XD12MS-V□  | 3/4"CVC Male    | 4.21<br>(107.0) | —              | 3.27<br>(83.0) | 0.91<br>(23.0) | 1.50<br>(38.0) | 1.89<br>(48.0) | 1.81<br>(46.0) | 1.38<br>(35.0) | 2-M5<br>Depth<br>0.31 (8.0) |
|   | XD4MS-VF□  | 1/4"CVC Female  | 2.78<br>(70.6)  | —              | 1.93<br>(49.0) | 0.43<br>(11.0) | 1.50<br>(38.0) | 1.10<br>(28.0) | 0.98<br>(25.0) | 1.00<br>(25.4) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                    | XD8MS-VF□  | 1/2"CVC Female  | 3.27<br>(83.0)  | —              | 2.38<br>(60.0) | 0.63<br>(16.0) | 1.50<br>(38.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | 1.10<br>(28.0) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                    | XD12MS-VF□ | 3/4"CVC Female  | 7.06<br>(179.2) | —              | 3.27<br>(83.0) | 0.91<br>(23.0) | 1.50<br>(38.0) | 1.89<br>(48.0) | 1.81<br>(46.0) | 1.38<br>(35.0) | 2-M5<br>Depth<br>0.31 (8.0) |
|  | XD4MS-S□   | 1/4"Compression | 1.89<br>(48.0)  | —              | 1.93<br>(49.0) | 0.43<br>(11.0) | 1.50<br>(38.0) | 1.10<br>(28.0) | 0.98<br>(25.0) | 1.00<br>(25.4) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                    | XD6MS-S□   | 3/8"Compression | 2.52<br>(64.0)  | —              | 2.38<br>(60.0) | 0.63<br>(16.0) | 1.50<br>(38.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | 1.10<br>(28.0) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                    | XD8MS-S□   | 1/2"Compression | 2.52<br>(64.0)  | 0.31<br>(7.9)  | 2.38<br>(60.0) | 0.63<br>(16.0) | 1.50<br>(38.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | 1.10<br>(28.0) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                    | XD12MS-S□  | 3/4"Compression | 4.96<br>(126.0) | 0.50<br>(12.7) | 3.27<br>(83.0) | 0.91<br>(23.0) | 1.50<br>(38.0) | 1.89<br>(48.0) | 1.81<br>(46.0) | 1.38<br>(35.0) | 2-M5<br>Depth<br>0.31 (8.0) |

### Pneumatic

| Model                                                                               | Model      | Connection      | L               | L1             | H               | H 1            | A              | B              | C              | P     | M              | M 1                         |
|-------------------------------------------------------------------------------------|------------|-----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|-------|----------------|-----------------------------|
|  | XD4CS-V□   | 1/4"CVC Male    | 2.24<br>(57.0)  | —              | 2.54<br>(64.0)  | 0.43<br>(11.0) | 1.56<br>(39.7) | 1.10<br>(28.0) | 0.98<br>(25.0) | Rc1/8 | 1.00<br>(25.4) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                     | XD8CS-V□   | 1/2"CVC Male    | 3.03<br>(77.0)  | —              | 3.31<br>(84.0)  | 0.63<br>(16.0) | 2.17<br>(55.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | Rc1/8 | 1.10<br>(28)   | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                     | XD12CS-V□  | 3/4"CVC Male    | 4.21<br>(107.0) | —              | 5.79<br>(147.0) | 0.91<br>(23.0) | 2.17<br>(55.0) | 1.89<br>(48.0) | 1.81<br>(46.0) | Rc1/8 | 1.38<br>(35.0) | 2-M5<br>Depth<br>0.31 (8.0) |
|  | XD4CS-VF□  | 1/4"CVC Female  | 2.78<br>(70.6)  | —              | 2.54<br>(64.0)  | 0.43<br>(11.0) | 1.56<br>(39.7) | 1.10<br>(28.0) | 0.98<br>(25.0) | Rc1/8 | 1.00<br>(25.4) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                     | XD8CS-VF□  | 1/2"CVC Female  | 3.27<br>(83.0)  | —              | 3.31<br>(84.0)  | 0.63<br>(16.0) | 2.17<br>(55.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | Rc1/8 | 1.10<br>(28)   | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                     | XD12CS-VF□ | 3/4"CVC Female  | 7.06<br>(179.2) | —              | 5.79<br>(147.0) | 0.91<br>(23.0) | 2.17<br>(55.0) | 1.89<br>(48.0) | 1.81<br>(46.0) | Rc1/8 | 1.38<br>(35.0) | 2-M5<br>Depth<br>0.31 (8.0) |
|  | XD4CS-S□   | 1/4"Compression | 1.89<br>(48.0)  | 0.31<br>(7.9)  | 2.54<br>(64.0)  | 0.43<br>(11.0) | 1.56<br>(39.7) | 1.10<br>(28.0) | 0.98<br>(25.0) | Rc1/8 | 1.00<br>(25.4) | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                     | XD6CS-S□   | 3/8"Compression | 2.52<br>(64.0)  | 0.50<br>(12.7) | 3.31<br>(84.0)  | 0.63<br>(16.0) | 2.17<br>(55.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | Rc1/8 | 1.10<br>(28)   | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                     | XD8CS-S□   | 1/2"Compression | 2.52<br>(64.0)  | 0.50<br>(12.7) | 3.31<br>(84.0)  | 0.63<br>(16.0) | 2.17<br>(55.0) | 1.24<br>(31.5) | 1.10<br>(28.0) | Rc1/8 | 1.10<br>(28)   | 2-M5<br>Depth<br>0.20 (5.0) |
|                                                                                     | XD12CS-S□  | 3/4"Compression | 4.96<br>(126.0) | 0.56<br>(14.3) | 5.79<br>(147.0) | 0.91<br>(23.0) | 2.17<br>(55.0) | 1.89<br>(48.0) | 1.81<br>(46.0) | Rc1/8 | 1.38<br>(35.0) | 2-M5<br>Depth<br>0.31 (8.0) |

\* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.



## Caution

Product specifications and performance values described in this catalog are based on our design calculations, in-house testing, product usage performance and public standards and specifications, and are posted as a user's guide under general usage conditions of the product. If the product is used outside of the described usage conditions or under special usage conditions, you should receive our technical advice in advance or it will be necessary to first conduct research and evaluation for performance verification at the users' own responsibility. Even if physical or personal damage occurs without use of the procedure, we shall assume no responsibility. Although this catalog has been edited with the utmost care possible, contact us if there are any unclear points if you come across any questionable matter. In addition, information described in this catalog will be revised without notice due to reasons that include correction of errors, supplement/improvement of insufficient content, improvement in product performance design change, and discontinuation of production of products, etc., when deemed necessary. This invalidates the product catalog of the previous version. The issue code is described in the back of your catalog. For product selection, contact us to confirm whether your catalog is the latest version. In addition, when exporting our products, exporters should obtain an export permit from the Ministry of Economy, Trade and Industry based on the provisions of the Export Trade Control Order of the "Foreign Exchange and Foreign Trade Act." Contact us regarding any unclear points.

### ■ Sales Office

KITZ SCT HEADQUARTERS : +81-3-6404-2171

KITZ SCT AMERICA CORPORATION : +1-408-747-5546

KITZ SCT CORPORATION TAIWAN  
REPRESENTATIVE OFFICE : +886-3-542-0110

KITZ SCT CORPORATION OF KUNSHAN,  
SHANGHAI BRANCH COMPANY : +86-21-5243-5025

### ■ Factory

KITZ SCT CORPORATION OF KUNSHAN : +86-512-5735-0700

For information on our locations, please visit the following website.



KITZ SCT corporation Headquarters  
Tokyo Shiodome Building, 1-9-1, Higashi-Shimbashi, Minato-ku,  
Tokyo 105-7305, Japan  
<https://en.kitzsct.com/>



WebSite