

## **KAITE SPRAY DRYING SPARES** Rev.01

Innovative high quality nozzles and spares,  
from the very engineers who spawned  
the original designs



versatility in design...

## Follow Us.....

Being a modern company with a fresh outlook, we often share media and stories of our products and projects. Follow us and you will get access to how to videos, some of our more unusual enquiries and get to ask us and our community technical queries.



## Our Brand.....

What do you do when you feel your ideas aren't being listened to? When your head is bursting with innovation and creations that you aren't being given the opportunity to show the world? You break away and start KAITE LTD. Founded by the very engineers who developed this technology, KAITE not only offer quantity interchangeable Nozzles and Spares, but Hoses, Manifolds, Lances, and the developments keep on coming.

Our business model is built around sustainability and building relationships with the customer. Our pricing strategy offers better value for money than our competition, offering the same components at a more attractive price. Where we stand out from the crowd is our ability to design and manufacture unique solutions for your plant in rapid time.

We don't just do the nozzles! We also produce high pressure spray drying lances. high pressure hose, manifolds and control, Kwik Check gauges, accessories and light fabrications. This allows us to offer our customers a much more integrated and considered solution, with all components of your fluid delivery system working in harmony.

We may be the new kid on the block, but we have over 15 years of Spray Drying expertise in our blood sweat and tears.



**KAITE**®

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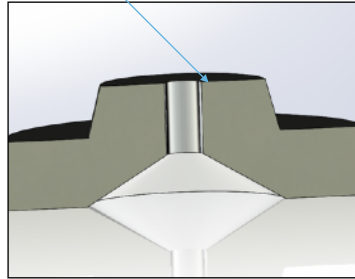
# Nozzle Care

## Handling

### Orifice Discs

Avoid clashing these components together. The quality of the spray pattern relies on the condition of the Orifice itself. This needs to remain a sharp corner. When the discs 'clash' together in washer processes etc, they can 'chip' this shape corner causing a streak in the spray pattern.

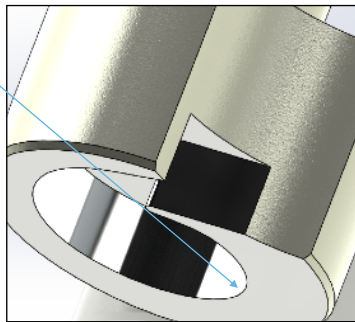
Sharp Edge



Sharp Edge

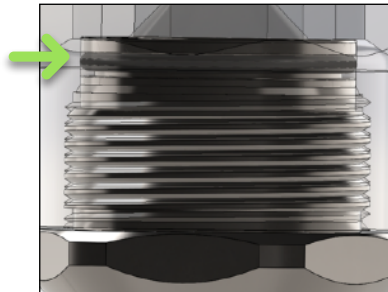
### Swirl Chamber

Again avoid clashing these components together. Breakage in the sharp internal edge will disrupt the internal structure of the flow path effecting the quality of the spray pattern and increasing the wear rate.

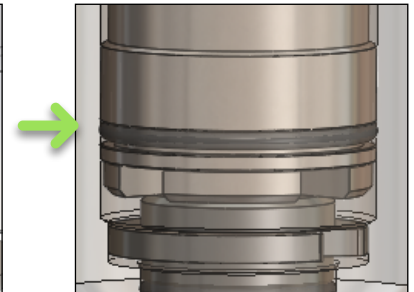


### Body

**SDIII and SDV are HAND TIGHT ONLY!** Using any more force literally does nothing towards improving the pressure integrity. The body and adaptor are assembled utilising a cylinder profile O Ring arrangement. Simply screw the components together by hand until it stops. This will be good to 1000bar just as it is!



SDV



SDIII

### O Rings

Use lubricant! The tolerances applied to the nozzle design are designed for assembling with a lubricant applied to the O Ring seals. Although without you will not effect the pressure integrity of the unit, you may however damage the seals, shear them etc, and find it more difficult to put together.



## Cleaning and Maintenance

### *Before disassembling*

Before removing the nozzle assembly from the end of the lance, flush the unit with warm water. Remove then the nozzle from the lance and in its assembled state bathe in a warm organic solution such as citric cleaner. Allow to soak for 30 minutes, remove from the bath and disassemble.

**DO NOT** use hard metal tools to disassemble except for aluminium removal tools provided by the manufacturer

### *Once disassembled*

Remove all O Ring Seals and discard. Place parts in an ultrasonic bath for 30 minutes, hot setting, using an organic citric cleaner. Parts must be kept separate using a separation tray (please enquire) or simply taking care. Once this cycle is complete, remove from the bath and using a soft bristle brush (toothbrush) clean the components individually under a warm tap or pale of water.

### *Re-assembly*

Obtain new O Ring seals and fit. Measure Orifice Disc and Swirl Chamber to confirm they are still within your allowed limits and reassembly the Nozzle. Ensure a lubricant is applied to the O Ring seals to aid assembly.

### *Noteworthy*

**DO NOT** use caustic solution or other high PH chemical compounds. Standard carbide grades are produced with a cobalt binder holding the material together. High PH chemical compounds break the binder down, destroying the material and reducing its working life.

**DO** establish your own wear limits for the nozzle in accordance with your product's specifications. Every plant is different.

**DO** inspect the sharp edges of the orifice disc and swirl chamber as discussed on *page.6* and replace if imperfections are identified.

**DO** use a Kwik Check Hole Gauge to measure and record the orifice disc dimensions each time you assemble the nozzle to monitor the wear rate. Periodically take measurements of the orifice disc at 2 to 3 different positions, or use a shadow graph to determine the wear profile.



## What to watch for...

### *Streaking*

Damage to the parts is reflected in the quality of your spray pattern. Chips in the Orifice Disc, not assembled correctly, Swirl Chamber wear - all can cause issues.



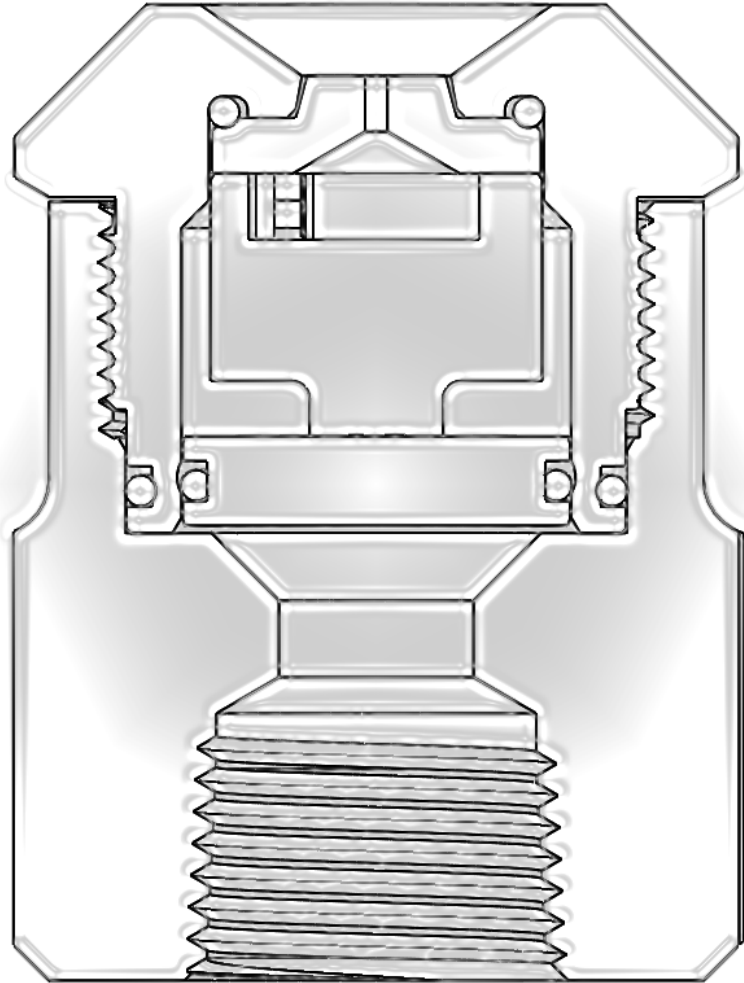
### *Build Up*

Build up is preventable with the correct combination of parts. Build up on the end of the nozzle can lead to fire or explosion.

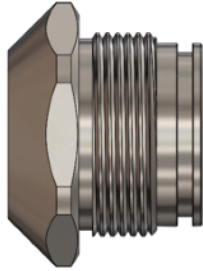
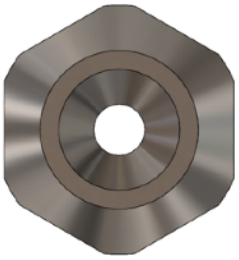




SDV Nozzle

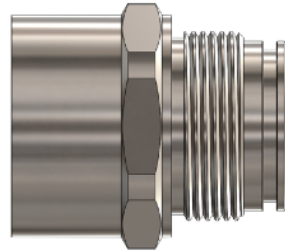
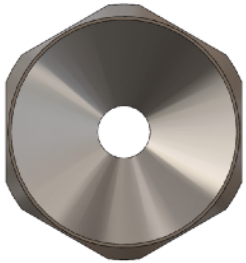


## SDV Nozzle - Body Options



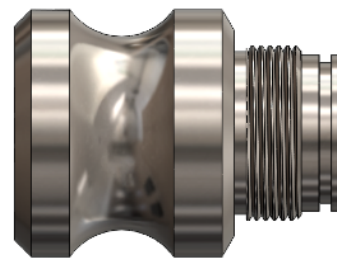
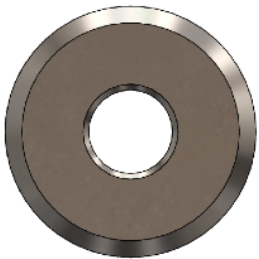
### SDV Standard *One Size Fits All*

*K0047 - Standard SDV Body SS316*



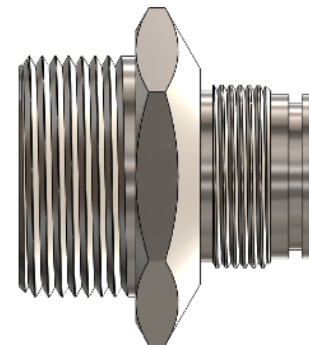
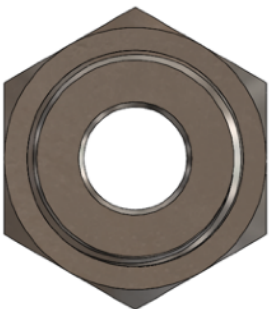
### SDV Cone Face *Anti Bearding Design*

*K0065-01 - SDV Cone Face Body SS316 (70°)*  
*K0065-02 - SDV Cone Face Body SS316 (80°)*  
*K0065-03 - SDV Cone Face Body SS316 (90°)*  
*K0065-04 - SDV Cone Face Body SS316 (60°)*  
*K0065-05 - SDV Cone Face Body SS316 (65°)*  
*K0065-06 - SDV Cone Face Body SS316 (75°)*  
*K0065-07 - SDV Cone Face Body SS316 (85°)*



### SDV CIP *Interface Solution*

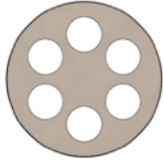
*K0458 - SDV 1 1/4" CIP Interface body, SS316*



### SDV Accessories Body *Interface Solution*

*K0456 - SDV 1 1/4" Adaptor for Accessories*

## SDV Nozzle - Retaining Disc Options



**SDV Standard**  
*Reversible*

*K0048 - SDV Retaining Disc, Standard SS316*



**SDV Cross Milled**

*High Flow - Perfect for Dairy (flat back Swirl)*

*K0092 - Cross Milled SDV Retaining Disc, SS316*

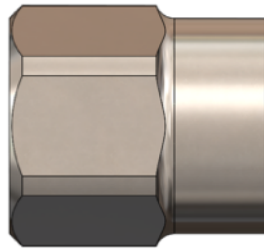
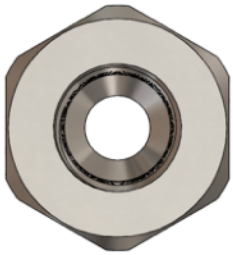
*K0432 - Cross Milled SDV Retaining Disc, HSS440*



**SDV Hi Flow**  
*Reversible*

*K0116 - SDV Retaining Disc, Hi Flow SS316*

## SDV Nozzle - Adaptor Options



### SDV Standard

*Threaded*

*K0090-01 - SDV Adaptor Thr'd SS316 (1/4 BSPT)*

*K0090-02 - SDV Adaptor Thr'd SS316 (3/8 BSPT)*

*K0090-03 - SDV Adaptor Thr'd SS316 (1/2 BSPT)*

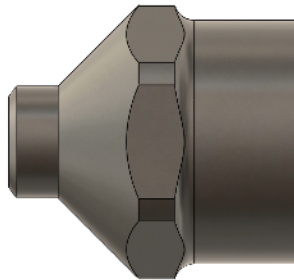
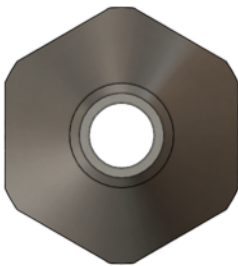
*K0090-04 - SDV Adaptor Thr'd SS316 (3/4 BSPT)*

*K0090-05 - SDV Adaptor Thr'd SS316 (1/4 NPT)*

*K0090-06 - SDV Adaptor Thr'd SS316 (3/8 NPT)*

*K0090-07 - SDV Adaptor Thr'd SS316 (1/2 NPT)*

*K0090-08 - SDV Adaptor Thr'd SS316 (3/4 NPT)*



### SDV Butt Weld

*Butt Weld Profile for Fabrication*

*K0257-01 - SDV Adaptor B/W SS316 (1/4Sch.40)*

*K0257-02 - SDV Adaptor B/W SS316 (3/8Sch.40)*

*K0257-03 - SDV Adaptor B/W SS316 (1/2Sch.40)*

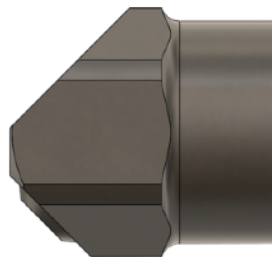
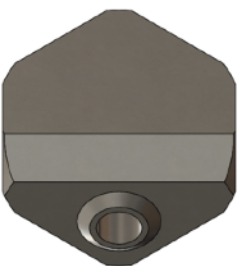
*K0257-04 - SDV Adaptor B/W SS316 (3/4Sch.40)*

*K0257-05 - SDV Adaptor B/W SS316 (1/4Sch.80)*

*K0257-06 - SDV Adaptor B/W SS316 (3/8Sch.80)*

*K0257-07 - SDV Adaptor B/W SS316 (1/2Sch.80)*

*K0257-08 - SDV Adaptor B/W SS316 (3/4Sch.80)*



### SDV 45° Butt Weld

*Butt Weld Profile for Fabrication*

*K0240-01 - SDV Adap' 45° B/W SS316 (1/4Sch.40)*

*K0240-02 - SDV Adap' 45° B/W SS316 (3/8Sch.40)*

*K0240-03 - SDV Adap' 45° B/W SS316 (1/2Sch.40)*

*K0240-04 - SDV Adap' 45° B/W SS316 (3/4Sch.40)*

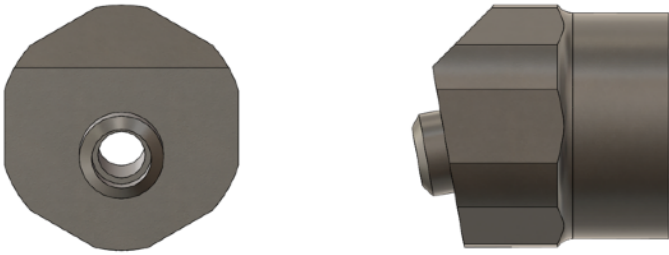
*K0240-05 - SDV Adap' 45° B/W SS316 (1/4Sch.80)*

*K0240-06 - SDV Adap' 45° B/W SS316 (3/8Sch.80)*

*K0240-07 - SDV Adap' 45° B/W SS316 (1/2Sch.80)*

*K0240-08 - SDV Adap' 45° B/W SS316 (3/4Sch.80)*

## SDV Nozzle - Adaptor Options



### SDV 10° Butt Weld

*Butt Weld Profile for Fabrication*

*K0445-01 - SDV Adap' 10° B/W SS316 (1/4Sch.40)*

*K0445-02 - SDV Adap' 10° B/W SS316 (3/8Sch.40)*

*K0445-03 - SDV Adap' 10° B/W SS316 (1/2Sch.40)*

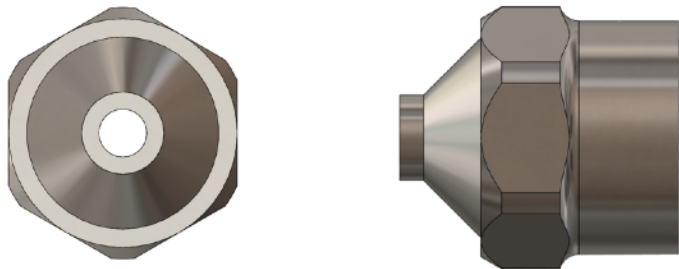
*K0445-04 - SDV Adap' 10° B/W SS316 (3/4Sch.40)*

*K0445-05 - SDV Adap' 10° B/W SS316 (1/4Sch.80)*

*K0445-06 - SDV Adap' 10° B/W SS316 (3/8Sch.80)*

*K0445-07 - SDV Adap' 10° B/W SS316 (1/2Sch.80)*

*K0445-08 - SDV Adap' 10° B/W SS316 (3/4Sch.80)*



### SDV Butt Weld, Shroud

*For Liquid Cooled Lances with Shroud*

*K0470-01 - SDV Shroud B/W SS316 (1/4Sch.40)*

*K0470-02 - SDV Shroud B/W SS316 (3/8Sch.40)*

*K0470-03 - SDV Shroud B/W SS316 (1/2Sch.40)*

*K0470-04 - SDV Shroud B/W SS316 (3/4Sch.40)*

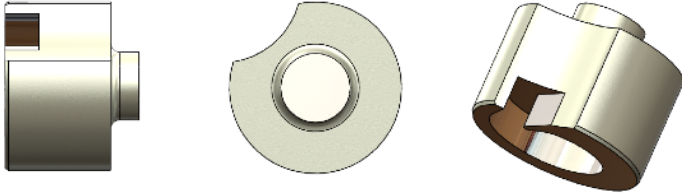
*K0470-05 - SDV Shroud B/W SS316 (1/4Sch.80)*

*K0470-06 - SDV Shroud B/W SS316 (3/8Sch.80)*

*K0470-07 - SDV Shroud B/W SS316 (1/2Sch.80)*

*K0470-08 - SDV Shroud B/W SS316 (3/4Sch.80)*

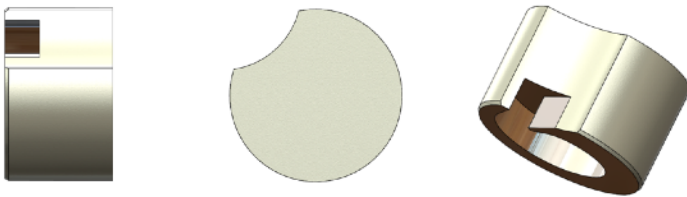
## SDV Nozzle - Swirl Chambers



### SDV Standard

*Standard Grade Tungsten Carbide*

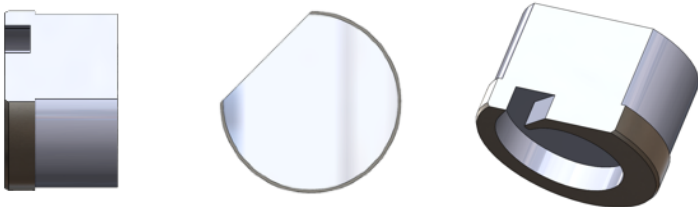
K0045-SA.P1 - SDV Swirl Chamber, TC **SA.P1**  
K0045-SB.P2 - SDV Swirl Chamber, TC **SB.P2**  
K0045-SC.P3 - SDV Swirl Chamber, TC **SC.P3**  
K0045-SD.P4 - SDV Swirl Chamber, TC **SD.P4**  
K0045-SE.P5 - SDV Swirl Chamber, TC **SE.P5**  
K0045-SF.P6 - SDV Swirl Chamber, TC **SF.P6**  
K0045-SG.P7 - SDV Swirl Chamber, TC **SG.P7**  
K0045-SH.P8 - SDV Swirl Chamber, TC **SH.P8**  
K0045-SI.P9 - SDV Swirl Chamber, TC **SI.P9**



### SDV Flat Back

*Standard Grade Tungsten Carbide*

K0193-SA.P1 - SDV Swirl Chamber FB, TC **SA.P1**  
K0193-SB.P2 - SDV Swirl Chamber FB, TC **SB.P2**  
K0193-SC.P3 - SDV Swirl Chamber FB, TC **SC.P3**  
K0193-SD.P4 - SDV Swirl Chamber FB, TC **SD.P4**  
K0193-SE.P5 - SDV Swirl Chamber FB, TC **SE.P5**  
K0193-SF.P6 - SDV Swirl Chamber FB, TC **SF.P6**  
K0193-SG.P7 - SDV Swirl Chamber FB, TC **SG.P7**  
K0193-SH.P8 - SDV Swirl Chamber FB, TC **SH.P8**  
K0193-SI.P9 - SDV Swirl Chamber FB, TC **SI.P9**

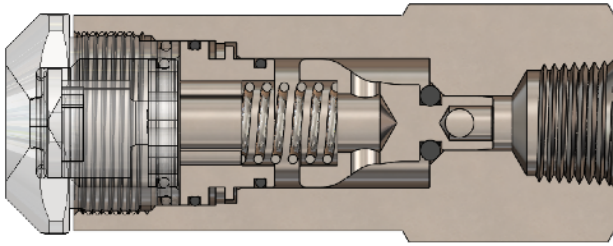


### SDV Premium

*Premium Grade Tungsten, Lasts 4-10 times longer!*

K0430-SA.P1 - SDV Swirl Chamber FB, TC **SA.P1**  
K0430-SB.P2 - SDV Swirl Chamber FB, TC **SB.P2**  
K0430-SC.P3 - SDV Swirl Chamber FB, TC **SC.P3**  
K0430-SD.P4 - SDV Swirl Chamber FB, TC **SD.P4**  
K0430-SE.P5 - SDV Swirl Chamber FB, TC **SE.P5**  
K0430-SF.P6 - SDV Swirl Chamber FB, TC **SF.P6**  
K0430-SG.P7 - SDV Swirl Chamber FB, TC **SG.P7**  
K0430-SH.P8 - SDV Swirl Chamber FB, TC **SH.P8**  
K0430-SI.P9 - SDV Swirl Chamber FB, TC **SI.P9**

## SDV Nozzle - Check Valve Systems



### SDV Check Valve MK.III

*Soft Seat Seal, Self Retained*

*K0085 - SDV MK.III C/V Adaptor, 1/2 BSPT SS316*

*K0088 - SDV MK.III C/V Seat, SS316*

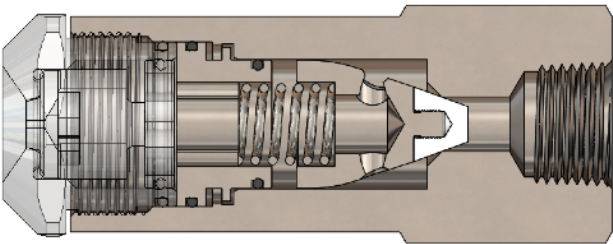
*K0054 - SDV MK.III C/V Seat O Ring, Viton*

*K0089 - SDV C/V Spring SS*

*K0087 - SDV MK.III C/V Retainer, SS316*

*K0053 - Retaining Disc O Ring Small, Viton*

*K0052 - Retaining Disc O Ring Large, Viton*



### SDV Check Valve MK.III - PTFE

*Hard Seat Seal, Self Retained*

*K0085 - SDV MK.III C/V Adaptor, 1/2 BSPT SS316*

*K0239 - SDV MK.III C/V Seat Assembly, SS316*

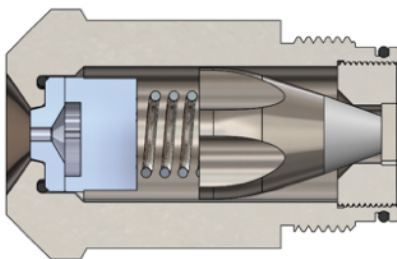
*K0199 - SDV MK.III C/V Seat, PTFE Cone (Spare)*

*K0089 - SDV C/V Spring SS*

*K0087 - SDV MK.III C/V Retainer, SS316*

*K0053 - Retaining Disc O Ring Small, Viton*

*K0052 - Retaining Disc O Ring Large, Viton*



### SDV Check Valve MK.IV

*Compact Hard Seat Seal, Seal Retained*

*K0433 - SDV MK.IV C/V Body, SS316*

*K0089 - SDV C/V Spring, SS*

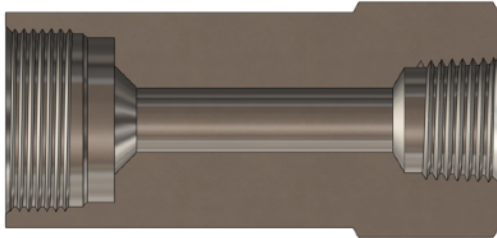
*K0437 - SDV MK.IV C/V Seat Assembly, SS316*

*K0199 - SDV MK.III C/V Seat, PTFE Cone (Spare)*

*K0454 - SDV MK.IV C/V Retainer, SS316*

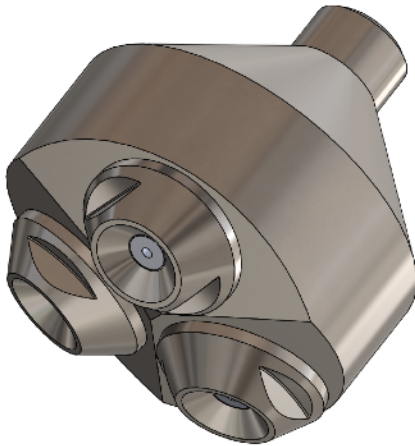
*\*O Rings as per SDV Nozzle*

## SDV Nozzle - Accessories and Special Components



SDV Extended Adaptor to match SDIII  
*Change to SDV without change the lance OAL*

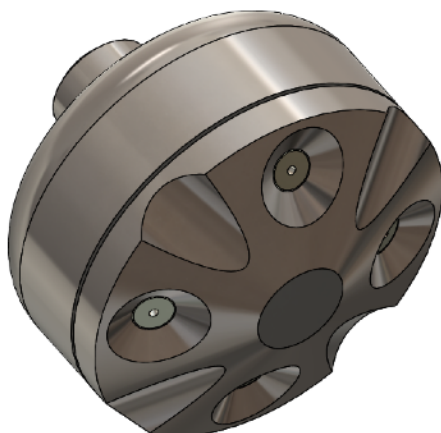
*K0114 - SDV Ext. Adaptor to Match SDIII, SS316*



SDV Cluster Assembly

*Fits into an 80mm Duct!*

*K0475 - SDV 1/2" B/W Cluster Adaptor x3, SS316*  
*K0479 - SDV 1/2" B/W Cluster Adaptor x2, SS316*  
*K0507 - SDV 1/2" BSPT Cluster Adaptor x3, SS316*  
*K0508 - SDV 1/2" BSPT Cluster Adaptor x2, SS316*  
*K0476 - SDV Cluster Body, SS316*



SDV Integral Cluster Assembly

*Fits into an 80mm Duct!*

*K0521 - SDV Integral Cluster Body x2, SS316*  
*K0522 - SDV Integral Cluster Body x3, SS316*  
*K0523 - SDV Integral Cluster Body x4, SS316*  
*K0524 - SDV Int' Cluster 1/2" B/W Adap, SS316*  
*K0526 - SDV Int' Cluster 1/2" Thr'ded Adap, SS316*  
*K0525 - SDV Integral O Ring Seal, Viton*



## SDV Nozzle - O Rings



### SDV Body

*Fits all SDV Body Options*

*K0052 - SDV Body O Ring, Viton (Standard)*

*K0498 - SDV Body O Ring, Silicone (Red)*

*K0488 - SDV Body O Ring, FDA Viton (White)*



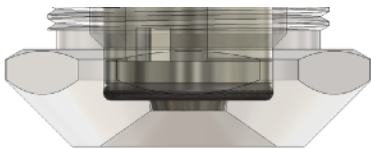
### SDV Retaining Disc

*Fits all Retaining Disc Options*

*K0053 - Retaining Disc O Ring, Viton (Standard)*

*K0499 - Retaining Disc O Ring, Silicone (Red)*

*K0489 - Retaining Disc O Ring, FDA Viton (White)*



### SDV Orifice Disc

*SDV and SDIII Interchangeable*

*K0051 - Orifice Disc O Ring, Viton (Standard)*

*K0497 - Orifice Disc O Ring, Silicone (Red)*

*K0487 - Orifice Disc O Ring, FDA Viton (White)*



### SDV Seal Kit, 15 Seals

*15 Seals of each size*

*K0033 - Viton SDV Seal Kit, 15 Seals (Standard)*

*K0034 - Silicone SDV Seal Kit, 15 Seals (Red)*

*K0035 - Viton FDA SDV Seal Kit, 15 Seals (White)*



### SDV Seal Kit XL, 100 Seals

*100 Seals of each size*

*K0039 - Viton SDV Seal Kit XL, 100 Seals*

*K0040 - Silicone SDV Seal Kit XL, 100 Seals*

*K0041 - Viton FDA SDV Seal Kit XL, 100 Seals*

The logo consists of the word "KAITE" in a bold, white, sans-serif font, centered within a solid grey rectangular box.

**KAITE**

The background of the lower half of the page is a grey field filled with a repeating pattern of spray nozzles. The nozzles are arranged in a staggered grid, with each nozzle pointing downwards. They are rendered in a light, semi-transparent grey, creating a textured, industrial look.

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spray nozzle experts for the processing industry

KAITE LTD