

### Application

The Hygienic Spray Deflector (HSD) is used on any process tanks (e.g., mixing tanks, holding tanks, CIP tanks, etc.) where CIP spray or water spray loss occurs through the tanks' vent. It can be used on open vents or installed underneath vents that utilize a venting apparatus such as a gooseneck vent, u-bend overflow, or mushroom vent. The Hygienic Spray Deflector blocks and redirects this CIP or water spray back into the tank on which it is installed, minimizing or eliminating loss solution and improving.



### Operating Parameters

<b>Table 1: Maximum Operating Pressures and Temperatures</b>		
<b>HSD Connection Size (Body Size)</b>	<b>Max. Pressure @ 70 °F</b>	<b>Max. Pressure @ 250 °F</b>
<b>2.0" TC (4.0" Body Size)</b>	200	125
<b>3.0" TC (6.0" Body Size)</b>	150	75
<b>4.0" TC (8.0" Body Size)</b>	100	50

### Assembly

The HSD component assembly contains four (4) sub-components:

1. Hygienic Spray Deflector – Deflector
2. Tri-Clamp
3. Tri-Clamp Gasket
4. Hygienic Spray Deflector Body

The deflector is inserted into the body with the gasket installed between the two; the two units are then clamped together.



**Figure 1: Exploded View**

## **Installation & Operation**

Reference the Hygienic Spray Deflector – Food & Beverage Technical Datasheet (TD-0005) for Cv and dimensional information to determine pressure drop through HSD for venting and installation height prior to installing.

The HSD is installed as shown in Figure 2 – clamped directly onto the tank port in which it will be blocking solution from exiting. Above the HSD the venting apparatus (e.g., gooseneck vent, u-bend overflow, mushroom vent) that is used with the tank can then be installed.



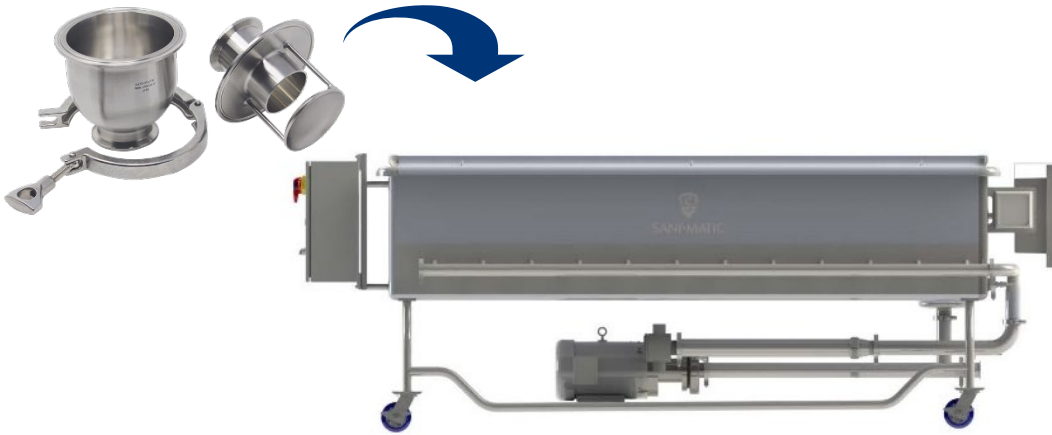
**Figure 2: Installation of HSD**

The HSD should be installed when the tank is being Cleaned-In-Place (CIP'd) or other process steps are occurring where spray overflow through the vent is to be minimized. The HSD can be removed from the installation after these processes and Cleaned-Out-of-Place (COP'd) as needed.

## Cleaning

The HSD should be periodically COP'd either manually, using a COP Parts Washer, or using an automated Cabinet Washer.

The facilities' Sanitation Standard Operating Procedures (SSOPs) should be followed regarding cleaning chemicals, temperatures, and other key cleaning TACT (Time, Action, Chemical, Temperature) parameters to be used, which are dependent on the installed operating conditions.



**Figure 3: Example Cleaning in COP Parts Washer**

## Maintenance

The only maintenance required on the HSD is replacing the tri-clamp gasket periodically. While the frequency of replacement will depend on installed operating conditions (e.g., products used, cleaning chemicals, temperatures), it is recommended to replace the gasket at least annually. Clamps can also be replaced depending on wear condition of the clamp. See Table 2 for these replacement parts (Note: select one of the gasket materials listed)

If the HSD body or deflector becomes damaged to the point beyond use, replace the entire assembly.

<b>Table 2: Recommend Spare Parts (RSP) List</b>			
<b>HSD Connection Size (Body Size)</b>	<b>Description</b>	<b>Sani-Matic Part Number</b>	<b>Exploded View Item # (Figure 1)</b>
2.0" TC (4.0" Body Size)	Gasket, Tri-Clamp, EPDM, 4.0"	021031	3
	Gasket, Tri-Clamp, Viton, 4.0"	020474	3
	Clamp, Tri-Clamp, 4.0"	020225	2
3.0" TC (6.0" Body Size)	Gasket, Tri-Clamp, EPDM, 6.0"	022975	3
	Gasket, Tri-Clamp, Viton, 6.0"	023847	3
	Clamp, Tri-Clamp, 6.0"	020976	2
4.0" TC (8.0" Body Size)	Gasket, Tri-Clamp, EPDM, 8.0"	027764	3
	Gasket, Tri-Clamp, Viton, 8.0"	038223	3
	Clamp, Tri-Clamp, 8.0"	027655	2

## Troubleshooting

<b>Table 3: Troubleshooting</b>	
<b>Problems</b>	<b>Solutions</b>
Tank does not vent properly	<ol style="list-style-type: none"><li>1. Make sure that the tank vent port is adequately sized for the application.</li><li>2. Disassemble the HSD and make sure that nothing is blocking the area between the deflector plate and the body.</li></ol>
Solution comes out of vent port while HSD is installed	<ol style="list-style-type: none"><li>1. Check operating conditions of the spray device(s) and make sure that operation is not higher than recommended flow and pressure.</li><li>2. Note that the HSD will stop many direct spray(s) but will not block hot or moist air from exiting the tank; the solution may just be humid air and/or air with entrapped solution (this is more common during a tank fill step when the air in the tank is displaced by the incoming solution).</li></ol>
Deflector or body is overly damaged and does not deflect or clamp on correctly	<ol style="list-style-type: none"><li>1. Replace assembly.</li></ol>