## Desuperheater Selection Guide

<table>
<thead>
<tr>
<th>DESUPERHEATER</th>
<th>MA</th>
<th>SAMN</th>
<th>VAD</th>
<th>SA-35</th>
<th>MNSD-V</th>
<th>VO</th>
<th>PRDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MA-I</td>
<td>MA-II</td>
<td>MA-III</td>
<td></td>
<td></td>
<td>VO-76</td>
<td>VO-II</td>
</tr>
<tr>
<td>Turndown Ratio</td>
<td>2:1 (on coolant flow)</td>
<td>2:5:1 (on coolant flow)</td>
<td>3:3:1 (on coolant flow)</td>
<td>9:1 (on coolant flow)</td>
<td>15:1 (on coolant flow)</td>
<td>Up to 75:1</td>
<td>Up to 100:1 (limited only by CWV)</td>
</tr>
<tr>
<td>Type of Atomizing</td>
<td>Mechanical</td>
<td>Mechanical</td>
<td>Mechanical</td>
<td>Mechanical</td>
<td>Velocity</td>
<td>Vapor</td>
<td>Mechanical</td>
</tr>
<tr>
<td>Minimum Outlet Temperature</td>
<td>Sat. + 20°F</td>
<td>Sat. + 20°F</td>
<td>Sat. + 15°F</td>
<td>Sat. + 10°F</td>
<td>Sat. + 15°F</td>
<td>Sat. + 15°F</td>
<td>Sat. + 10°F</td>
</tr>
<tr>
<td>Temperature Control Accuracy (S)</td>
<td>±15°F</td>
<td>±15°F</td>
<td>±10°F</td>
<td>±5°F</td>
<td>±10°F</td>
<td>±5°F</td>
<td>±5°F</td>
</tr>
<tr>
<td>Mounting/Orientation</td>
<td>Any</td>
<td>Any</td>
<td>Any</td>
<td>Any</td>
<td>Any</td>
<td>Any</td>
<td>Vertical w/ flow upward (2)</td>
</tr>
<tr>
<td>ANSI Pressure Class</td>
<td>150-1500</td>
<td>2500</td>
<td>150-2500</td>
<td>900-2500</td>
<td>150-2500</td>
<td>150-600</td>
<td>150-1500</td>
</tr>
<tr>
<td>Main Header Size</td>
<td>3&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>6&quot;</td>
<td>1&quot;</td>
<td>6&quot; (7)</td>
</tr>
<tr>
<td>Maximum Size</td>
<td>24&quot;</td>
<td>30&quot;</td>
<td>30&quot;</td>
<td>30&quot;</td>
<td>24&quot;</td>
<td>16&quot;</td>
<td>24&quot; (7)</td>
</tr>
<tr>
<td>Size(s)</td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>1&quot;-16&quot;</td>
<td>1&quot;-16&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Std. End Connections:</td>
<td>Sw</td>
<td>Sw</td>
<td>Sw or BW</td>
<td>Flg. or SW</td>
<td>Flg. or BW</td>
<td>Flg. or BW</td>
<td>Flg. or BW</td>
</tr>
<tr>
<td>Header Mounting</td>
<td>Flanged</td>
<td>Flanged</td>
<td>Flanged</td>
<td>Flanged</td>
<td>Flanged</td>
<td>Flanged</td>
<td>Flanged</td>
</tr>
<tr>
<td>Coolant Shutoff Class</td>
<td>V</td>
<td>III-V</td>
<td>III-V</td>
<td>III-V</td>
<td>III-V</td>
<td>III-V</td>
<td>III-V</td>
</tr>
<tr>
<td>Velocity Limits:</td>
<td>@ max. flow</td>
<td>50,000 ft/min</td>
<td>50,000 ft/min</td>
<td>30,000 ft/min</td>
<td>50,000 ft/min</td>
<td>1/3 sonic</td>
<td>50,000 ft/min</td>
</tr>
<tr>
<td>Pressure Drop:</td>
<td>@ max. flow</td>
<td>Negligible</td>
<td>Negligible</td>
<td>Negligible</td>
<td>Negligible</td>
<td>3 psi nominal</td>
<td>Negligible</td>
</tr>
<tr>
<td>Required Coolant Pressure</td>
<td>40-160 psi</td>
<td>60-400 psi</td>
<td>30-500 psi</td>
<td>225-1000 psi</td>
<td>7-25 psi</td>
<td>10-40 psi</td>
<td>60-3000 psi</td>
</tr>
<tr>
<td>Distance to Temperature Sensor (DTS)</td>
<td>20-30 ft</td>
<td>30-50 ft</td>
<td>16-30 ft</td>
<td>16-30 ft</td>
<td>60-1000 psi</td>
<td>5-100 psi</td>
<td>5 psi</td>
</tr>
<tr>
<td>Min. Straight Pipe Distance to Elbow or Valve</td>
<td>3 pipe diameters (not less than 3 ft.)</td>
<td>3 pipe diameters (not less than 3 ft.)</td>
<td>5 pipe diameters (not less than 4 ft)</td>
<td>6 pipe diameters (not less than 1 ft.)</td>
<td>5 pipe diameters (not less than 4 ft)</td>
<td>Long radius elbows may be installed at inlet and outlet</td>
<td></td>
</tr>
<tr>
<td>Product Specifications No.</td>
<td>GN-04</td>
<td>GN-05</td>
<td>Pending</td>
<td>GN-08</td>
<td>GN-09</td>
<td>GN-06</td>
<td>GN-07</td>
</tr>
</tbody>
</table>

1. Velocity is as low as 1,000 ft/min is possible depending on amount of residual superheat and temperature differential between vapor and coolant.
2. 25:1 turndown is subject to a check on the amount of atomizing vapor being used.
3. Temperature shown is seat velocity. Inlet and outlet velocities will be much lower.
4. Control accuracy is a function of the complete system which includes temperature controller and coolant valve.
5. Application involving pressure reduction will include a pressure reducing valve (PRV) and pressure controller.
6. 60 psi Extended Header for 3/2 & 3/3, 12"-24" Header for 3/5 & 12"-20" Header for 4/5 Model.
## SPECIAL APPLICATION GLOBE STYLE CONTROL VALVES
- General Service application
- Severe Duty application
- High turndown
- .75 - 24" Sizes
- 150 - 4500 ANSI Ratings
- Special ANSI Ratings
- Meets ASTM/ASME Standards
- Threaded, Butt/Socket Weld, Flanged Ends

## STEAM CONDITIONING EQUIPMENT (DESUPERHEATERS)
- 7 Styles
- Mechanical Atomizing
- Variable Orifice
- Integral Cooling Water function available
- High turndowns
- 150 - 2500 ANSI Ratings
- Special ANSI Ratings
- Meets ASTM/ASME Standards

## TRIM TYPES
- 13 types
- RAVEN™
- HUSH™
- CAV B®
- One Stage Hush®
- Noise control
- Cavitation elimination
- Velocity & Erosion control

## ACTUATORS
- Diaphragm Style. Model 700
- Diaphragm Style. Model 1000
- Manual Style 820
- Electric available
- Electro/Hydraulic available
- Piston
- Reverse acting
- Direct acting

## NUCLEAR CONTROL VALVES
- Pneumatic, Motor, Manual Operators
- Metal & Resilient Seats
- Widest Selection of Trim in the Industry
- Size Range: 3/8" - 20" class 150 - 2500
- Globe, Angle, Isolation & Three Way Body Configurations
- ASME Section III "N" & "NPT" Stamp Certified

## NUCLEAR HIGH PERFORMANCE BUTTERFLY AND BALL VALVES
- Bi-Directional Class VI Shut off
- Metal & Resilient Seats
- Pneumatic, Motor, Manual Operators
- Modulating or Isolation
- Two & Three Piece Ball Valve design
- Torque Seated/Position Seated (Butterfly only)
- ASME Section III "N" & "NPT" Stamp Certified

## AFTERMARKETS AND REFURBISHMENTS
- Reduce Outage Cycle Times
- Maximize Years/Life Cycle
- Recondition the OEM parts, while minimizing lead times and costs.