

# Specification Sheet

<p>No.: 1 QTY: 1</p> <p>Tag no. 21-HV-008</p> <p>Service</p> <p><b>&lt; Specification &gt;</b></p> <p>Model HDT</p> <p>Description Three way Control Valve</p> <p>Valve size 4 inch</p> <p>Port size 4 inch</p> <p>Rated Cv 130</p> <p>Connection size inch</p> <p>Body rating ANSI300</p> <p>End connection RF</p> <p>Body material SCPH2</p> <p>Trim material SUS316</p> <p>Flow characteristic LINEAR</p> <p>Bonnet type PLAIN</p> <p>Actuator HA3</p> <p>Manual operator SIDE</p> <p>Valve action DIVISION, REVERSE (Side to bottom at air f</p> <p>Gland packing V7132Y</p> <p>Gasket V543</p> <p>Grease 800</p> <p>Air supply 3.5kgf/cm2</p> <p>Spring range 0.8-2.4kgf/cm2</p> <p><b>&lt; Accesories &gt;</b></p> <p>Positioner / Signal HTP-1D</p> <p>Expro-sion-proof</p> <p>Signal 0.2-1.0 kgf/cm2</p> <p>Regurator KZ03-2A-1B</p> <p>Regulator 2</p> <p>Limit Switch</p> <p>Action</p> <p>Solenoid valve JE3HT8320A107</p> <p>Action En. : Control , De-en.: Side to bottom</p> <p>Power supply</p> <p>Others</p>	<p>Product no.:</p> <p><b>&lt;Option&gt;</b></p> <p>SV0703-105 Indicating unit : "kgf/cm2"</p> <p>SV0601-001 Air piping Connection: 1/4 NPT</p> <p>SV0602-002 Air piping: Vinyl covered copper tube. Joint: Cr plated with vinyl cap</p> <p>SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)</p> <p><b>&lt;Finish&gt;</b></p> <p>Body: M10B5/10</p> <p>Diaph. Case: M10B5/10</p> <p>Yoke: M10B5/10</p> <p>Paint: Standard</p>																																																																																															
<p><b>&lt;Operating condition&gt;</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Fluid name</td> <td style="width: 20%;">Off Gas</td> <td style="width: 20%;">NOR</td> <td style="width: 20%;">MIN</td> <td style="width: 20%;">[ GAS ]</td> </tr> <tr> <td>Flow rate</td> <td>MAX 355</td> <td></td> <td></td> <td>UNIT m3/h[N]</td> </tr> <tr> <td>Inlet pressure</td> <td>1.33</td> <td></td> <td></td> <td>kgf/cm2A</td> </tr> <tr> <td>Outlet pressure</td> <td></td> <td></td> <td></td> <td>kgf/cm2A</td> </tr> <tr> <td>Diff. pressure</td> <td>0.07</td> <td></td> <td></td> <td>kgf/cm2</td> </tr> <tr> <td>Shut-off press.</td> <td></td> <td></td> <td></td> <td>kgf/cm2</td> </tr> <tr> <td>Temperature</td> <td>45</td> <td></td> <td></td> <td>degC</td> </tr> <tr> <td>Sp.Gr. (liq.)</td> <td></td> <td></td> <td></td> <td>water=1</td> </tr> <tr> <td>Sp.Gr.(gas,vapor)</td> <td>1.984</td> <td></td> <td></td> <td>kg/m3[N]</td> </tr> <tr> <td>Viscosity</td> <td></td> <td></td> <td></td> <td>cP</td> </tr> <tr> <td>Flash</td> <td></td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>Velocity</td> <td>0.04</td> <td></td> <td></td> <td>Mach</td> </tr> <tr> <td>S.P.L.</td> <td>40</td> <td></td> <td></td> <td>dBa</td> </tr> <tr> <td>Calculated Cv</td> <td>67.76</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Travel</td> <td>52</td> <td></td> <td></td> <td>%</td> </tr> </table>	Fluid name	Off Gas	NOR	MIN	[ GAS ]	Flow rate	MAX 355			UNIT m3/h[N]	Inlet pressure	1.33			kgf/cm2A	Outlet pressure				kgf/cm2A	Diff. pressure	0.07			kgf/cm2	Shut-off press.				kgf/cm2	Temperature	45			degC	Sp.Gr. (liq.)				water=1	Sp.Gr.(gas,vapor)	1.984			kg/m3[N]	Viscosity				cP	Flash				%	Velocity	0.04			Mach	S.P.L.	40			dBa	Calculated Cv	67.76				Travel	52			%	<p><b>&lt;Seat Leakage&gt;</b></p> <p><b>&lt;Note&gt;</b> Tokumi: V93-0902-00 - Data revised by "product. No. 416-8310-5300 . Existing Model : VTD 4" .</p> <p><b>&lt;Line spec&gt;</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Design press.</td> <td style="width: 30%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>Design temp.</td> <td></td> <td></td> <td></td> <td>kgf/cm2G degC</td> </tr> <tr> <td>Line size in/out</td> <td>4</td> <td>/</td> <td>4</td> <td>inch</td> </tr> <tr> <td>Line Sch. / Thick</td> <td>40</td> <td>/</td> <td>6</td> <td>mm</td> </tr> </table>	Design press.					Design temp.				kgf/cm2G degC	Line size in/out	4	/	4	inch	Line Sch. / Thick	40	/	6	mm
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# Cv Calculation Sheet

No: 1	TAG NO:	21-HV-008	CASE:	MAX
Flow rate:	355 m3/h[N]	Fluid state:	GAS	
Inlet Pressure:	1.33 kgf/cm2A	Model:	HDT	
Outlet pressure:	kgf/cm2A	Valve size:	4	inch
Diff. pressure	0.07 kgf/cm2	Line size In/Out:	4	4 inch
Temperature:	45 degC	Pipe Sch/ Thick:	40	6 mm
Sp.Gr. (liq.):	water=1	Saturated temp.:	degC	
Sp.Gr. (gas,vapor):	1.984 kg/m3[N]	KC:	0.05	
Viscosity:	cP	Velocity:	0.04	Mach
Vapor pressure:	kgf/cm2A	S.P.L.:	40	dBA
Critical pressure:	kgf/cm2A	Calc. Cv:	67.76	
CP/CV , Z:	⋮	Travel:	52	%
Flash:	%			

$$Cv(\text{Gas}) = \frac{375.2 \text{ m}^3/\text{h}[\text{S}] \times \text{Sqr}(1.534 \times 318.2 \text{ degK}) \times 1}{2.930 \times \text{Sqr}(6.865 \text{ kPa} \times (130.4 \text{ kPaA} + 123.6 \text{ kPaA}))} = 67.76$$