

**Item: VALVE/REGULATOR SIZING CALCULATION: ISA/EN Gas**  
**Item Desc: 2 Inch 95HP;T5/M1-Cert.Body Mat.;PED SEP;Tag 12A8360X032**

Tags:

<b>SERVICE &amp; SIZING</b>	<b>Normal</b>	<b>Maximum</b>
Gas Name	<b>GAS</b>	<b>GAS</b>
Inlet Pressure (kg/cm2g)	<b>26.500</b>	<b>28.030</b>
Pressure Drop (kg/cm2)	<b>20.500</b>	<b>22.030</b>
dP/P1 Ratio	<b>0.744</b>	<b>0.758</b>
Atm. Pressure (kg/cm2a)	<b>1.033</b>	<b>1.033</b>
Critical Temperature (deg C)	<b>-118.372</b>	<b>-118.372</b>
Critical Pressure (kg/cm2a)	<b>51.859</b>	<b>51.859</b>
Molecular Weight (M)	<b>32.500</b>	<b>32.500</b>
Specific Heat Ratio Factor, Fk	<b>1.000</b>	<b>1.000</b>
Temperature (deg C)	<b>25.000</b>	<b>87.000</b>
Gas Flow Rate (Nm3/h)	<b>1867.906</b>	<b>2353.582</b>
Pressure Drop Ratio Factor, Xt	<b>0.913</b>	<b>0.913</b>
Adj Pres. Drop Ratio Factor, Xtp	<b>0.912</b>	<b>0.912</b>
Expansion Factor Y	<b>0.728</b>	<b>0.723</b>
Gas Compressibility Factor, Z	<b>0.981</b>	<b>0.992</b>
Valve diameter d (in)	<b>2.000</b>	<b>2.000</b>
Inlet Pipe Diameter, D1 (in)	<b>4.000</b>	<b>4.000</b>
Outlet Pipe Diameter, D2 (in)	<b>4.000</b>	<b>4.000</b>
Piping Correction Factor, Fp	<b>0.999</b>	<b>0.998</b>
Sizing Coefficient, Cv	<b>5.068</b>	<b>6.679</b>
dP Choked (kg/cm2)	<b>25.131</b>	<b>26.522</b>
<b>NOISE CALCULATION</b>		
Fisher Valve/Reg Trim Type	<b>REGS STD</b>	<b>REGS STD</b>
Downstream Pipe Size (in)	<b>4.000</b>	<b>4.000</b>
Downstream Pipe Schedule	<b>80</b>	<b>80</b>
Valve/Reg LpA (SPL) (dB(A))	<b>83.8</b>	<b>86.8</b>
WARNING:	<b>ACCEPTABLE</b>	<b>ACCEPTABLE</b>
<b>VELOCITY</b>		
Upstream Area (in2)	<b>3.100</b>	<b>3.100</b>
Downstream Area (in2)	<b>3.100</b>	<b>3.100</b>
Sonic Velocity (m/s)	<b>326.876</b>	<b>359.259</b>
Inlet Mach	<b>0.032</b>	<b>0.042</b>
Inlet Velocity (m/s)	<b>10.460</b>	<b>15.089</b>
Outlet Mach	<b>0.125</b>	<b>0.173</b>
Outlet Velocity (m/s)	<b>40.860</b>	<b>62.152</b>