|  |  |  |
| --- | --- | --- |
|  | **Valve Sizing Calculation** |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Customer: | |  | | | | | |  | | | | | | |  |
| Fax: | |  | | | | | | Phone: | | |  | | | | |
| Contact: | |  | | | | | | Contact: | | |  | | | | |
| Item: | 1 | Qty: | | 1 | | | | PO Number: | | |  | | | | |
| Tags: | | FCV-2111 | | | | | | Project: | | | BINAK GCS | | | | |
| Description: | |  | | | | | | P&ID Number: | | | BK-GCS-PEDCO-120-PR-PI-0004(3/3) | | | | |
| Service Description: | | P-2101 A/B | | | | | | Line Number: | | | CDH-112-0014-CH05-3"-PT | | | | |
| Sizing Type: Liquid | | | Flow is Turbulent | | | Solving for: Cv | | | Noise is Hydrodynamic | | | | Flow is Mass | | |
| Variable Name | | | | | Units | | Minimum- 0 | | | Normal- 1 | | Maximum- 2 | |  | |
| Liquid | | | | |  | |  | | |  | |  | |  | |
| Specific Gravity (SG) | | | | |  | | 0.715 | | | 0.715 | | 0.715 | |  | |
| Temperature (T1) | | | | | deg C | | 23.2200 | | | 23.2200 | | 23.2200 | |  | |
| Inlet Pressure (P1) | | | | | bar(g) | | 19.500 | | | 19.500 | | 19.500 | |  | |
| Pressure Change (dP) | | | | | bar | | 1.000 | | | 1.000 | | 1.000 | |  | |
| Liquid Flow Rate (Ql) | | | | | m3/h | | 3.500 | | | 10.000 | | 11.000 | |  | |
| Pressure Recovery Factor (Fl) | | | | |  | | 0.900 | | | 0.900 | | 0.900 | |  | |
| Valve Style Modifier (Fd) | | | | |  | | 0.350 | | | 0.350 | | 0.350 | |  | |
| Cavitation Coefficient (Kc) | | | | |  | | 1.000 | | | 1.000 | | 1.000 | |  | |
| Kinematic Viscosity (Nu) | | | | | cSt | | 0.870 | | | 0.870 | | 0.870 | |  | |
| Pipe Size Up | | | | | in | | 3 | | | 3 | | 3 | |  | |
| Pipe Schedule Up | | | | |  | | STD | | | STD | | STD | |  | |
| Pipe Size Down | | | | | in | | 4 | | | 4 | | 4 | |  | |
| Pipe Schedule Down | | | | |  | | STD | | | STD | | STD | |  | |
| Nominal Valve Diameter (dv) | | | | | in | | - | | | - | | - | |  | |
| Hydrodynamic\_Trim | | | | |  | | Standard Trim | | | Standard Trim | | Standard Trim | |  | |
|  | | | | |  | |  | | |  | |  | |  | |
| Sizing Coefficient (Cv) | | | | |  | | 3.426 | | | 9.880 | | 10.893 | |  | |
| Application Ratio (Ar) | | | | |  | | 0.067 | | | 0.067 | | 0.067 | |  | |
| Dynamic Viscosity (Mu) | | | | | cP | | 0.622 | | | 0.622 | | 0.622 | |  | |
| Critical Pressure (Pc) | | | | | bar(g) | | 220.30000 | | | 220.30000 | | 220.30000 | |  | |
| Atmospheric Pressure | | | | | bar | | 1.0128 | | | 1.0128 | | 1.0128 | |  | |
| Pipe Outside Diam. Up | | | | | in | | 3.500 | | | 3.500 | | 3.500 | |  | |
| Pipe Outside Diam. Down | | | | | in | | 4.500 | | | 4.500 | | 4.500 | |  | |
| Vapor Pressure (Pv) | | | | | bar(a) | | 5.50000 | | | 5.50000 | | 5.50000 | |  | |
| Mass flow rate incompressible (wl) | | | | | kg/h | | 2499.8798 | | | 7142.5138 | | 7856.7652 | |  | |
| Valve Lpa (LpAe1m) | | | | | dB(A) | | < 50 | | | < 50 | | < 50 | |  | |
| dPchoked | | | | | bar | | 12.53508 | | | 12.53393 | | 12.53366 | |  | |
| Cavitation Pressure Drop (dPcav) | | | | | bar | | 15.00352 | | | 14.93709 | | 14.92128 | |  | |
|  | | | | |  | |  | | |  | |  | |  | |
| Warnings | | | | |  | |  | | |  | |  | |  | |
|  | | | | |  | |  | | |  | |  | |  | |
|  | | | | | | | | | | | | | | | |