


PROJECT :			DATE :	03-May-13
PROJ. NO.:			BY :	S.Rahimi
CLIENT :			REV :	A
UNIT :			DOC NO.:	

Control Valve Failure Relief Rate (Incompressible Flow)


Process Data	Unit		
Valve Full Open (Rated) CV	---	12.00	
Fluid Mass Density	kg/m ³	922.50	
Fluid Viscosity	Cp	0.21	
Valve Upstream Pressure	bara	44.59	
Valve Downstream Pressure	bara	5.95	
Valve Differential Pressure	bar	38.64	
Valve Calculated CV	---	12.00	
Flow Rate	Kg/h	61995	
Flow Rate	m3/h	67.20	

Valve Suction Data			
* Source Pressure	bara	45.000	
* Static Head	m	0.000	0
* Exchanger Pressure Drop	bar	0.000	
* Other Losses	bar	0.000	
* Metering Loss	bar	0.000	

Suction Side Fitting Data			
Pipe Length	m	26	
Nominal Pipe Size	inch	3	
Pipe Schedule No.	----	std	
Pipe Roughness (DEF.)	inch	0.00180	

Fittings Quantity			
* tee flow thru	no.	0	
* tee branch	no.	0	
* elbow 90 deg LR	no.	0	
* elbow 90 deg screwed	no.	0	
* elbow 45 deg LR	no.	0	
* elbow 45 deg screwed	no.	0	
* close pattern return bend	no.	0	
* gate valve	no.	0	
* ball valve	no.	0	
* globe valve	no.	0	
* angle valve	no.	0	
* butterfly valve (2" - 8")	no.	0	
* butterfly valve (10" - 14")	no.	0	
* butterfly valve (16" - 24")	no.	0	
* check valve swing	no.	0	
* check valve lift	no.	0	
* check valve stop lift	no.	0	
* check valve tilting disk	no.	0	
* foot valve hinged disc	no.	0	
* foot valve poppet disc	no.	0	
* reducer / expander	no.	0	
* entrance (projecting)	no.	0	
* entrance (sharp-edged)	no.	0	
* entrance (flush)	no.	0	
* exit (projecting)	no.	0	
* exit (sharp-edged)	no.	0	
* exit (rounded)	no.	0	

Suction Side Calculation Results			
Pipe Internal Diameter	mm	77.93	
Velocity	m/s	3.91	
Reynolds No.		1339789	
Friction Factor		0.0173	
Total Pipe Loss	m	4.512	
Total Fitting Loss	m	0.000	
Inlet Pressure	bara	44.59	

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Valve Discharge Data

* Destination Pressure	bara	4.500	
* Static Head	m	10.000	
* Exchanger Pressure Drop	bar	0.000	
* Other Losses	bar	0.000	
* Metering Loss	bar	0.000	

Discharge Side Fitting Data

Pipe Length	m	35	
Nominal Pipe Size	inch	3	
Pipe Schedule No.	----	std	
Pipe Roughness (DEF.)	inch	0.00180	

Fittings Quantity

* tee flow thru	no.	0	
* tee branch	no.	0	
* elbow 90 deg LR	no.	0	
* elbow 90 deg screwed	no.	0	
* elbow 45 deg LR	no.	0	
* elbow 45 deg screwed	no.	0	
* close pattern return bend	no.	0	
* gate valve	no.	0	
* ball valve	no.	0	
* globe valve	no.	0	
* angle valve	no.	0	
* butterfly valve (2" - 8")	no.	0	
* butterfly valve (10" - 14")	no.	0	
* butterfly valve (16" - 24")	no.	0	
* check valve swing	no.	0	
* check valve lift	no.	0	
* check valve stop lift	no.	0	
* check valve tilting disk	no.	0	
* foot valve hinged disc	no.	0	
* foot valve poppet disc	no.	0	
* reducer / expander	no.	0	
* entrance (projecting)	no.	0	
* entrance (sharp-edged)	no.	0	
* entrance (flush)	no.	0	
* exit (projecting)	no.	0	
* exit (sharp-edged)	no.	0	
* exit (rounded)	no.	0	

Discharge Side Calculation Results

Pipe Internal Diameter	mm	77.93	
Velocity	m/s	3.9	
Reynold 's No.		1339789	
Friction Factor		0.0173	
Total Pipe Loss	m	6.074	
Total Fitting Loss	m	0.000	
Outlet Pressure	bara	5.95	

General Notes