PROJECT :			**DATE :**	
PROJ. NO.:			**BY :**	S.Rahimi
CLIENT :			**REV :**	
UNIT :			**DOC NO.:**	

Two Phase PSV Sizing - ω Method (One-point Method)

Input Data		
PSV Tag No.		
P&ID No.		
Protected Equipment		
Cause of Overpressure		
Vapor Mass Flow Rate	kg/hr	35240
Liquid Mass Flow Rate	kg/hr	64760
Vapor Mass Density @ Relieving Condition	kg/m^3	51.76
Liquid Mass Density @ Relieving Condition	kg/m^3	457.4
Latent Heat of Vaporization	kj/kg	238.4
Liquid Specific Heat	kj/kgK	3.066

Operating Condition		
Maximum Operating Pressure	barg	18.00
Maximum Operating Temperature	^oC	45.00
Max. Allowable Working Pressure	barg	15.00

Relieving Condition		
Set Pressure	barg	22.00
Allowable Over Pressure	%	10.0
Superimposed Back Pressure (Constant)	barg	1.00
Superimposed Back Pressure (Variable)	barg	0.00
Built Up Back Pressure	barg	0.00
Relieving Temprature	^oC	155

Calculation Results		
Recommended Type (Conv./Bellows/Pilot)	**CONVENTIONAL**	
Required Relieving Capacity	kg/hr	**100000**
Vapor Mass Fraction	----	**0.3524**
Relieving Pressure	barg	**24.20**
Total Back Pressure	barg	**1.00**
ω	----	**2.90**
Discharge Effective Coefficient (Kd)	----	**0.85**
Back Pressure Coefficient (Kb)	----	**1.00**
Critical Pressure	bara	**18.51**
Flow Regime	----	**Critical**
Two Phase Mass Flux	$kg/m^2.sec$	**7547**
Calculated Orifice Area	mm^2	**4330.1**
Selected Orifice Area	mm^2	**7129.0**
Orifice Designation	----	**Q**
No. of Required PSVs	----	**1**
Inlet Size	in	**6**
Outlet Size	in	**8**

General Notes