FILE NAME : D:\08 Linked In\02 DWSim\00 Plan Personal\29 Control Valve Sizing\29 Control Valve Sizing for Incompressible Fluid.kdf

DEFAULTS : Fitting method = Crane
fT based on steel = Yes
Compressible = Isothermal
Two phase flow = Homogeneous
Acceleration = Homogeneous
Elevation den = Flanigan
Dukler hold-up = Hughmark
Smooth pipe f = No
Sonic velocity = HEMOmega
Two phase orifice = Homogeneous
Two phase valve = Homogeneous
Atmospheric pres = 14.696 psi abs

VIEW/PRINT SETTINGS:
Font = Courier, Size 7-8
Orientation = Landscape
Margins = 1-2 cm.

RUN MESSAGE: Case 1 Hydraulic solution reached after 3 iterations.

NOTES:
1) Close this report before running/viewing next results.
2) Report is not automatically saved or printed.
Save the report as rtf file from the Korf menu (Hydraulics | Results | Save Report) or editor menu (File | Save As for MS Word).
After the final run, print the saved report with an editor (MS Word, etc.) for quality assurance purposes.

Circuit Feed 1

Number	Description	Flow kg/h	Density kg/m3	Visc cP	Dia in	Sch	Length m	dP/L kPa/100m	Velocity m/s	Elev m	dPelev psi	dPin-out psi	Pin psig	Pout psig
F1	Feed									0	0	0	300.7	300.7
L1	Pipe	106,958	943	0.23	8	40	100	3.35	0.976		0	0.486	300.7	300.2
CV1	Valve									0		210	300.2	90.2
L2	Pipe	106,958	942	0.229	8	40	100	3.35	0.977		0	0.487	90.2	89.71
TK1	Product									0	0	0	89.71	89.71

NOTES - (1) dPElev and dPin-out represent DRAWING Inlet - Outlet.
(2) dPin-out = dPElev + dPfrictional + dPaccel
(3) Vessel/Tank dPElev represent effect of fluid levels inside vessel.
(4) Elev represent equipment or nozzle (vessel/tank) elevation.

Line number		L1			L2		
Line name		Pipe			Pipe		
PROCESS DATA		AVG	IN	OUT	AVG	IN	OUT
Temperature	F	250	250	250	250	250	250
Pressure	psig	300.4	300.7	300.2	89.96	90.2	89.71
Liq Fraction	wt	1.0	1.0	1.0	1.0	1.0	1.0
Total-Flow	kg/h	106,958			106,958		
Dens-NS	kg/m3	943	943	943	942	942	942
Elev	kg/m3	943			942		
Visc-NS	cP	0.23			0.229		
Vapor-Flow	kg/h	0			0		
Density	kg/m3	0	0	0	0	0	0
Visc	cP	0	0	0	0	0	0
Mol wt		0	0	0	0	0	0
Z		0	0	0	0	0	0
Cp/Cv		0	0	0	0	0	0
Liquid-Flow (wt)	kg/h	106,958			106,958		
Flow (vol)	m3/h	113.4			113.5		
Density	kg/m3	943	943	943	942	942	942
Visc	cP	0.23	0.23	0.23	0.229	0.229	0.229
PIPE DATA							
Material		Steel			Steel		
Size	in	8			8		
Length	m	100			100		
Schedule		40			40		
ID Flow/Hydr	m	0.203	/ 0.203		0.203	/ 0.203	
Roughness (E-3)	m	0.0457			0.0457		
Safety factor		1.0			1.0		
Sum of elev's	m	0			0		
VELOCITY							
Velocity	m/s	0.976	0.976	0.976	0.977	0.977	0.977
Sonic (Vap)	m/s	1,254			1,249		
PRESSURE DROP (In-Out)							
Overall	psi	0.4862			0.4866		
Friction	psi	0.4862			0.4866		
Accel'n	psi	0			0		
Static	psi	0			0		
dP/Length	kPa/100m	3.35			3.35		
LINE SIZING		MAX/LARGER	MIN/SMALLER		MAX/LARGER	MIN/SMALLER	
dP/Length	kPa/100m	22.6			22.6		
Velocity	m/s	100	0.30		100	0.30	
VelCoef	m/s	3.91	0.326		3.91	0.326	
Size-Larger/Small	in	10	6		10	6	
dP/Length	kPa/100m	1.06	13.6		1.06	13.6	
Velocity	m/s	0.619	1.69		0.62	1.69	

Line number	L1	L2
Line name	Pipe	Pipe
LIQUID HOLDUP		
Liquid Fraction (vol)	1.0	1.0
Liquid Holdup(dP) (vol)	1.0	1.0
2-PHASE METHOD	Homogeneous	Homogeneous
FLOW REGIME		
Horizontal (Mandane)	-	-
Horizontal (Dukler)	-	-
Vertical Up (Fair)	-	-
Vertical Up (Dukler)	-	-
Vertical Down (Golan)	-	-
HOMOGENEOUS/DUKLER/BEGGS		
Reynolds No	810,402	813,501
Friction factor	0.01513	0.01513
Friction factor (turb)	0.01406	0.01406
ftp/fns	0	0
Dentp/Denns	0	0
LOCKHART-M/CHENOWETH-M		
Liquid-Re	0	0
f	0	0
Psi/Psi^2	0	0
Vapor-Re	0	0
f	0	0
Psi^2	0	0
X factor	0	0
FITTINGS	TYPE No L/D K	TYPE No L/D K
	Entrance 0 0 0.50	Entrance 0 0 0.50
	Exit 0 0 1.0	Exit 0 0 1.0
	Gate valve 0 8.0 0	Gate valve 0 8.0 0
	Globe valv 0 340 0	Globe valv 0 340 0
	Check 0 50.0 0	Check 0 50.0 0
	Stop-check 0 400 0	Stop-check 0 400 0
	Elbow 0 20.0 0	Elbow 0 20.0 0
	180 Bend 0 50.0 0	180 Bend 0 50.0 0
	T-Straight 0 20.0 0	T-Straight 0 20.0 0
	T-Branch 0 60.0 0	T-Branch 0 60.0 0
	Other 1 0 0	Other 1 0 0
Fitting K	0	0
Fitting L/D	0	0
Total Eq Length m	100.0	100.0

NOTES - (1) dPoverall = dPfrictional + dPaccel + dPstatic
(2) NS = No slip or homogenous

FEED SUMMARY

Number	Description	Elevation m	Density kg/m3	Level m	Rel Elev m	dP loss psi	dP level psi	dP inlet psi	dP total psi	Pres psig
F1	Feed	0	943	0	0	0	0	0	0	301

NOTES - (1) dP Inlet for Feed, Products and Vessels represent pressure to velocity conversion only, not friction.

PRODUCT SUMMARY

Number	Description	Elevation m	Density kg/m3	Level m	Rel Elev m	dP loss psi	dP level psi	dP inlet psi	dP total psi	Pres psig
TK1	Product	0	942	0	0	0	0	0	0	89.7

NOTES - (1) dP Inlet for Feed, Products and Vessels represent pressure to velocity conversion only, not friction.

Number	Description	Type	Character	Cv Full	Cv %	Lift %	Dia in	Fp^2	xT	Y	Pin-Pout psi	PresIn psig	PresOut psig
CV1	Valve	Control	Equal	33.6	100.0	100.0	4	0.996	0.72	1.0	210	300	90.2

End of file