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FILE NAME : D:\08 Linked In\02 DWSim\00 Plan Personal\24 Line Hydraulics\24 Line Hydraulic.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 = 1.0133 bar abs

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

RUN MESSAGE: Case 1 Hydraulic solution reached after 2 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.

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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 bar	dPin-out bar	Pin barg	Pout barg
F1	Feed									0	0	0	2.00	2.00
L1	Pipe	3,600	997	0.89	4	40	575	0.212	0.122		1.47	1.48	2.00	0.5224
TK1	Product									15	0	0	0.5224	0.5224

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.

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CASE 1 NORMAL

PIPE LINE REPORT

Line number		L1			
Line name		Pipe			
PROCESS DATA		AVG	IN	OUT	
Temperature	C	25.0	25.0	25.0	
Pressure	barg	1.261	2.00	0.5224	
Liq Fraction	wt	1.0	1.0	1.0	
Total-Flow	kg/h	3,600			
Dens-NS	kg/m3	997	997	997	
Elev	kg/m3	997			
Visc-NS	cP	0.89			
Vapor-Flow	kg/h	0			
Density	kg/m3	0	0	0	
Visc	cP	0	0	0	
Mol wt		0	0	0	
Z		0	0	0	
Cp/Cv		0	0	0	
Liquid-Flow (wt)	kg/h	3,600			
Flow (vol)	m3/h	3.61			
Density	kg/m3	997	997	997	
Visc	cP	0.89	0.89	0.89	
PIPE DATA					
Material		Steel			
Size	in	4			
Length	m	575			
Schedule		40			
ID Flow/Hydr	m	0.102	/ 0.102		
Roughness (E-3)	m	0.0457			
Safety factor		1.0			
Sum of elev's	m	0			
VELOCITY					
Velocity	m/s	0.122	0.122	0.122	
Sonic (Vap)	m/s	5,000			
PRESSURE DROP (In-Out)					
Overall	bar	1.478			
Friction	bar	0.01226			
Accel'n	bar	0			
Static	bar	1.465			
dP/Length	kPa/100m	0.212			
LINE SIZING		MAX/LARGER	MIN/SMALLER		
dP/Length	kPa/100m	22.6			
Velocity	m/s	100	0.30		
VelCoef	m/s	3.8	0.317		
Size-Larger/Small	in	6	3		
dP/Length	kPa/100m	0.0299	0.781		
Velocity	m/s	0.0538	0.21		

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Line number	L1
Line name	Pipe
LIQUID HOLDUP	
Liquid Fraction (vol)	1.0
Liquid Holdup(dP) (vol)	1.0
2-PHASE METHOD	Homogeneous
FLOW REGIME	
Horizontal (Mandane)	-
Horizontal (Dukler)	-
Vertical Up (Fair)	-
Vertical Up (Dukler)	-
Vertical Down (Golan)	-
HOMOGENEOUS/DUKLER/BEGGS	
Reynolds No	13,990
Friction factor	0.0291
Friction factor (turb)	0.01627
ftp/fns	0
Dentp/Denns	0
LOCKHART-M/CHENOWETH-M	
Liquid-Re	0
f	0
Psi/Psi^2	0
Vapor-Re	0
f	0
Psi^2	0
X factor	0

FITTINGS	TYPE	No	L/D	K
	Entrance	0	0	0.50
	Exit	0	0	1.0
	Gate valve	0	8.0	0
	Globe valv	0	340	0
	Check	0	50.0	0
	Stop-check	0	400	0
	Elbow	4	20.0	0
	180 Bend	0	50.0	0
	T-Straight	0	20.0	0
	T-Branch	0	60.0	0
	Other	1	0	0

Fitting K	0
Fitting L/D	80.0
Total Eq Length m	579.6

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

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FEED SUMMARY

Number	Description	Elevation m	Density kg/m3	Level m	Rel Elev m	dP loss bar	dP level bar	dP inlet bar	dP total bar	Pres barg
F1	Feed	0	997	0	0	0	0	0	0	2.0

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

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PRODUCT SUMMARY

Number	Description	Elevation m	Density kg/m3	Level m	Rel Elev m	dP loss bar	dP level bar	dP inlet bar	dP total bar	Pres barg
TK1	Product	15.0	997	0	0	0	0	0	0	0.522

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

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Warning! Line L1 velocity coef less than minimum (m/s) = 0.3167

End of file