

AFT Fathom Model

General

Title: AFT Fathom Model  
 Analysis run on: 2009-3-5 19:53:30  
 Application version: AFT Fathom Version 6.0 (2004.11.12)  
 Input File: C:\1.fth

Execution Time= 0.06 seconds  
 Total Number Of Head/Pressure Iterations= 45  
 Total Number Of Flow Iterations= 10  
 Total Number Of Temperature Iterations= 0  
 Number Of Pipes= 10  
 Number Of Junctions= 11  
 Matrix Method= Gaussian Elimination  
 Workspace labels

Pressure/Head Tolerance= .0001 relative change  
 Flow Rate Tolerance= .0001 relative change  
 Flow Relaxation= (Automatic)  
 Pressure Relaxation= (Automatic)

Constant Fluid Property Model  
 Fluid Database: Unspecified  
 Fluid= Unspecified  
 Density= 885 kg/m3  
 Viscosity= .04071 Pa-sec  
 Vapor Pressure= Unspecified  
 Viscosity Model= Newtonian

Atmospheric Pressure= 1 atm  
 Gravitational Acceleration= 1 g  
 Turbulent Flow Above Reynolds Number= 4000  
 Laminar Flow Below Reynolds Number= 2300

Total Inflow= 5.667E-03 m3/sec  
 Total Outflow= 5.667E-03 m3/sec  
 Maximum Pressure is 0.1705 MPa at Junction 3 Inlet  
 Minimum Pressure is 0.1013 MPa at Junction 13 Outlet

Valve Summary

Jct	Name	Valve Type	Vol. Flow (m3/sec)	Mass Flow (kg/sec)	DP (MPa)	DH (meters)	P Inlet (MPa)	Cv	K	Valve State
4	Valve	REGULAR	2.332E-03	2.063	2.983E-05	3.437E-03	0.1013	528.8	1.006	Open
13	Valve	REGULAR	3.335E-03	2.952	6.103E-05	7.032E-03	0.1013	528.8	1.006	Open

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Pipe Output Table

Pipe	Name	Vol. Flow Rate (m3/sec)	Velocity (meters/sec)	P Static Max (MPa)	P Static Min (MPa)	Elevation Inlet (meters)	Elevation Outlet (meters)	dP Stag. Total (MPa)	dP Static Total (MPa)	dP Gravity (MPa)	dH (meters)	P Static In (MPa)	P Static Out (MPa)	P Stag. In (MPa)	P Stag. Out (MPa)
1	1 ÜµÄ	5.667E-03	0.6290	0.1530	0.1525	4.600	4.640	0.0005198	0.0005198	0.00034715	0.019887	0.1530	0.1525	0.1532	0.1527
2	24 m Long	5.667E-03	0.6290	0.1705	0.1531	2.615	4.600	0.0173694	0.0173694	0.01722759	0.016339	0.1705	0.1531	0.1706	0.1533
3	1 ÜµÄ	5.667E-03	0.6290	0.1525	0.1522	4.640	4.660	0.0002563	0.0002563	0.00017358	0.009534	0.1525	0.1522	0.1527	0.1524
4	1 ÜµÄ	5.667E-03	0.6290	0.1522	0.1520	4.660	4.672	0.0001622	0.0001622	0.00010415	0.006684	0.1522	0.1520	0.1524	0.1522
5	1 ÜµÄ	5.667E-03	0.6290	0.1520	0.1399	4.672	6.050	0.0120588	0.0120588	0.01195951	0.011435	0.1520	0.1399	0.1522	0.1401
6	1 ÜµÄ	5.667E-03	0.6290	0.1399	0.1396	6.050	6.075	0.0003266	0.0003266	0.00021697	0.012635	0.1399	0.1396	0.1401	0.1397
7	1 ÜµÄ	5.667E-03	0.6290	0.1395	0.1376	6.075	6.225	0.0019233	0.0019233	0.00130183	0.071613	0.1395	0.1376	0.1397	0.1378
11	1 ÜµÄ	3.335E-03	0.3702	0.1016	0.1013	8.473	8.475	0.0002291	0.0002291	0.00001737	0.024396	0.1016	0.1013	0.1016	0.1014
12	1 ÜµÄ	2.332E-03	0.2588	0.1016	0.1013	8.473	8.475	0.0002913	0.0002913	0.00001737	0.031564	0.1016	0.1013	0.1016	0.1014
13	Pipe	5.667E-03	0.6290	0.1375	0.1016	6.225	8.473	0.0359081	0.0359081	0.01951014	1.889413	0.1375	0.1016	0.1377	0.1018

All Junction Table

Jct	Name	P Static In (MPa)	P Static Out (MPa)	P Stag. In (MPa)	P Stag. Out (MPa)	Vol. Flow Rate Thru Jct (m3/sec)	Mass Flow Rate Thru Jct (kg/sec)	Loss Factor (K)
1	Í ä Í	0.1531	0.1530	0.1533	0.1532	5.667E-03	5.015	0.2350
2	Í ä Í	0.1525	0.1525	0.1527	0.1527	5.667E-03	5.015	0.2350
3	Infinite Pipe	0.1705	0.1705	0.1706	0.1706	5.667E-03	5.015	0.0000
4	Valve	0.1013	0.1013	0.1014	0.1013	2.332E-03	2.063	1.0063
5	Í ä Í	0.1522	0.1522	0.1524	0.1524	5.667E-03	5.015	0.2350
6	Í ä Í	0.1520	0.1520	0.1522	0.1522	5.667E-03	5.015	0.2350
7	Í ä Í	0.1399	0.1399	0.1401	0.1401	5.667E-03	5.015	0.2350
8	Í ä Í	0.1396	0.1395	0.1397	0.1397	5.667E-03	5.015	0.2350
9	Í ä Í	0.1376	0.1375	0.1378	0.1377	5.667E-03	5.015	0.2350
10	Ë ý Í	0.1017	0.1017	0.1018	0.1018	N/A	N/A	See Losses
13	· § ÃÄ	0.1013	0.1013	0.1014	0.1013	3.335E-03	2.952	1.0063

Junction Loss Table

Jct	Pipe #	Pipe Dir.	Loss Factor (K)
10	P11	Out	3.303
	P12	Out	5.713
	P13	In	0.000