Fluid = water

3

5

Duty Power = 4044.4 Watt
Duty Efficiency (%) = 76.81
Duty Pressure Rise = 22.83 m Fluid
Duty Flow = 50.0 m3/h
In Density = 999.10 kg/m3

Fluid = methanol

4

6

Duty Power = 3224.3 Watt
Duty Efficiency (%) = 76.81
Duty Pressure Rise = 22.83 m Fluid
Duty Flow = 50.0 m3/h
In Density = 796.54 kg/m3

Head rise in ft of fluid should be identical for the 2 identical networks.
Pressure rise at the pump and pressure losses are not identical.

Power requirement for methanol is less because the density is less

Steel Pipe, Duct or Tube

#	Length (*)	Inside Diameter (*)	Flow (m3/h)	Total Pressure Loss (m Fluid)	Economic Velocity (m/s)	In Stagnation Pressure (m Flui	In Velocity (m/s)	Out Stagnation Pressure (m Flu
-4	10 m	52.5 mm	50.0	8.01	2.41	36.64	6.42	28.63
-3	2 m	77.9 mm	50.0	0.21	2.41	12.97	2.91	13.81
-2	10 m	52.5 mm	50.0	8.13	2.18	34.00	6.42	25.87
-1	2 m	77.9 mm	50.0	0.22	2.18	10.34	2.91	11.18

Known Pressure Boundary

#	Elevation (*)	Temperature (*)	Pressure (*)	Fluid	Solids	Flow (m3/h)	Density (kg/m3)	Viscosity (cP)
1	1.05 m	15 C	1 atm	water		50.0	999.10	1.138
2	1.05 m	15 C	1 atm	methanol		50.0	796.54	0.593

Centrifugal Pump

#	Elevation (*)	Duty Flow (m3/h)	Duty Pressure Rise (m Fluid)	Duty Efficiency (%)	Duty Power (Watt)	Duty NPSH Required (m Fluid)	Duty NPSH Available (m Fluid a	In Stagnation Pressure (m Flui	Out Stagnation Pressure (m Flu
3	0 m	50.0	22.83	76.81	4044.4	2.82	11.00	11.18	34.00
4	0 m	50.0	22.83	76.81	3224.3	2.82	12.56	13.81	36.64

Known Flow Boundary

#	Elevation (*)	Temperature (*)	Flow Direction	Flow (*)	Fluid	Solids	Flow (m3/h)	Stagnation Pressure (m Fluid a	Density (kg/m3)	Viscosity (cP)
5	0 m	15 C	Out of Network	50 m3/h	water		50.0	25.87	999.17	1.137
6	0 m	15 C	Out of Network	50 m3/h	methanol		50.0	28.63	796.54	0.593