TUTORIAL CENTRIFUGAL COMPRESSOR - MAPS

DESIGN CURVES

N (rpm)	Q1 (m3/h)	p2 (bar-a)	T2 (°C)
4550	2795,9	62,78	92,04
	3139,4	62,08	90,27
	3483,0	61,19	88,25
	3826,6	59,70	86,06
	4170,1	57,48	83,94
	4513,7	55,40	81,79
5200	3220,6	71,81	104,70
	3670,4	70,90	102,69
	4120,2	68,75	100,06
	4570,1	65,84	96,81
	5019,9	62,84	93,27
	5469,7	59,57	89,33
5850	3657,2	82,87	119,94
	4213,6	81,40	116,56
	4770,1	79,34	113,18
	5326,5	75,91	109,51
	5883,0	70,76	105,02
	6439,4	64,57	99,22
6485	4194,0	95,39	136,05
	4848,0	94,24	131,86
	5501,9	91,33	127,56
	6155,9	86,52	122,44
	6809,8	79,86	116,16
	7463,8	69,45	108,26
6825	4468,8	104,72	145,06
	5174,6	102,35	141,17
	5880,4	98,81	136,13
	6586,2	93,36	129,79
	7292,1	85,66	123,44
	7997,9	73,18	114,50

THESE CURVES ARE VALID IN THE FOLLOWING CONDITIONS

GAS HANDLED	TUTORIAL MIX	
MOLECULAR WEIGHT	19,55	kg/kmol
INLET PRESSURE	40,20	bar-a
INLET TEMPERATURE	50,00	deg C

CENTRIFUGAL COMPRESSOR SPECIFICATION SHEET

OPERATING CONDITIONS

	Units	Design	Off Design	Freon
Gas Handled		Tutorial mix	Off-design mix	R134a
Flowrate @ Std Conditions	MMSCFD	182,6	132,8	1,87
Flowrate @ Oper. Conditions	m^3/h	5613	4400	2355
Weight Flow	kg/h	178625	125245	9770
INLET CONDITIONS				
Pressure	bar-a	40,2	38	1
Temperature	°C	50	52	30
Molecular Weight	kg/kmol	19,55	18,85	102,03
DISCHARGE CONDITIONS				
Pressure	bar-a	73,5	73,5	1,8
Temperature	°C	107	115	55
Speed	RPM	5850	5850	2454

Gas Analysis		Design	Off Design	Freon
Components	M.W (g/mol)	mol %	mol %	mol %
Nitrogen	28			
Methane	16	80	80	
Ethane	30	15	20	
Propane	44	5		
I-Butane	58			
n-Butane	58			
H2S	34			
CO2	4			
I-Pentane	7			
n-Pentane	72			
n-Hexane	86			
n-Heptane	100			
>C7	>100			
R134a	102			100
TOTAL	%	100	100	100
MOLECULAR WEIGHT	kg/kmol	19,55	18,85	102,03