

		LEVEL				CLIENT DOC:	
		CONTROL VALVE					
		NO.	BY	APP	DATE	DESCRIPTION	
CLIENT							
P.O. NO.:							
PROJECT:							
JOB NO.:							
SERVICE:		PROPANE REFERIGERATION PACKAGE					
GENERAL	1	Tag No.					
	2	Qty					
	3	Service / Line Size-Schedule					
	4	Line No. / Vessel No.					
	5	Function					
BODY	6	Type of Body					
	7	Body Size / Port Size / Travel					
	8	Guiding / No. of Ports					
	9	End Conn. & Rating					
	10	Body Material / Bolt-Nut					
	11	Packing Type / Material					
	12	Lubricator / Isolating Valve					
	13	Bonnet Type					
	14	Trim Characteristic					
	15	Trim Material : Seat/Plug Stem					
	16	Required Seat Tightness					
	17	Maximum Allow. Sound Level					
	18	Flow Direction (FTO or FTC)					
ACTUATOR	19	MFR / Model No. / Size (NOTE 14 & 17)					
	20	Type of Actuator / Service					
	21	Close at / Open at					
	22	Flow Action to / Direction					
	23	Fail Position					
	24	Air Supply Pressure Nor /Max (NOTE 16)					
	25	Handwheel / Location					
POSITIONER	26	MFR / Model No. (NOTE 10)					
	27	Filter Reg. / Gauges / Bypass (NOTE 21)					
	28	Input Signal					
	29	Output Signal					
	30	Action (NOTE 14)					
TRANSDUCER (AIR SET)	31	Make / Model No. / Tag					
	32	Input / Output Signal					
	33	Filter Reg. / Gauges / Bypass					
	34	Installation					
	35	Air Supply Pressure Nor /Max					
SOLENOID	36	Assembly					
	37	MFR / Model No.					
	38	MYCOM Document					
	39	Tag Numbers					
	40	Assembly					
OPTIONS	41	Flow Units					
	42	Fluid					
	43	Quantity Max Flow / Cv CALCULATED					
	44	Quantity Operating Flow / Cv / Cv (SELECTED)					
	45	Valve Cv / Valve FL					
	46	Norm. Inlet Pressure / ΔP					
	47	Max. Inlet Pressure / ΔP					
	48	Max. Inlet Shut Off / Discharge Pressure					
	49	Temperature Max / Operating					
	50	Specific gravity / Mol Wt.					
	51	Operating Viscosity / % Flash					
	52	% Superheat / % Solids					
	53	Vapor Pressure / Crit. Pressure					
	54	Predicted Sound Level dbA					
	55	Manufacturer					
	56	Model No. (NOTE 2)					

NOTES:

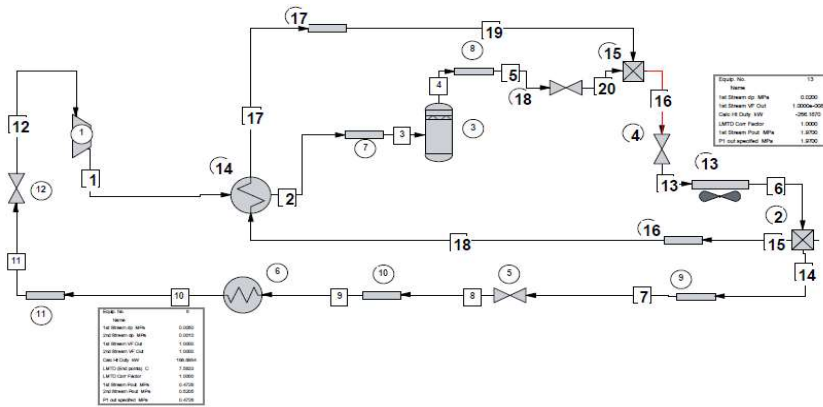
- 1 SYSTEM DESIGN PRESSURE & TEMPERATURE: FV to 22.0 BarG @ 120 °C
- 2 CADMIUM PLATED B7 BOLTS & 2H NUTS, WETTED MATERIAL SHALL BE 316 STAINLESS STEEL
- 3 INSTRUMENT SHALL BE SUITABLE FOR OFF-SHORE SERVICE AND TROPICAL CLIMATE
- 4 MATERIAL TEST REPORT REQUIRED NOT REQUIRED WITH CHARPY IMPACT TEST PER ASME
- 5 MANUFACTURER CALCULATION / SIZING SHEET REQUIRED NOT REQUIRED
- 6 DIE- STAMPED STAINLESS STEEL NAMEPLATE REQUIRED NOT REQUIRED
- 7 CUSTOMER SPECIFICATION: N/A & N/A
- 8 HARD COPY OF IEC-79, EExi IIB-T3 CERTIFICATE
- 9 AREA CLASSIFICATION: IEC-79, ZONE 2, GROUP IIB, T3
- 10 DIGITAL VALVE POSITIONER USING HART PROTOCOL COMMUNICATION
- 11 ALL DOCUMENTS TO BE SUBMITTED IN BOTH HARD AND ELECTRONIC FORMAT
- 12 INDIVIDUAL PART WEIGHT MUST BE CERTIFIED
- 13 MATERIAL SHALL BE PER APPROVED BY CLIENT
- 14 DIRECT ACTING CONTROLLER BY PURCHASER. ACTUATOR SIGNAL PRESSURE DECREASE AS CONTROLLER OUTPUT DECREASES
- 15 INSTRUMENT MOUNTING HARDWARE, FASTENERS, LINKAGES & WINGES SHALL BE 316 SS
- 16 MIN AIR SUPPLY PRESSURE IS 4.5 barg
- 17 MECHANICAL SCALE INDICATOR / POINTER SHALL BE SUPPLIED
- 18 PNEUMATIC TUBING SHALL BE 316 STAINLESS STEEL
- 19 PAINTING SHALL BE HIGH BUILT, HIGH TEMP EPOXY FOR ONSHORE SERVICE
- 20 ELECTRICAL CONNECTION:M20
- 21 REGULATOR SET @ 2.75 barg

CLIENT P.O. NO.: PROJECT: JOB NO.: SERVICE: PROPANE REFERIGERATION PACKAGE	LEVEL				CLIENT DOC:
	CONTROL VALVE				DESCRIPTION
	NO.	BY	APP	DATE	

A. SELECTED VALVE DATA

MAYEKAWA VALVE SIZING CALCULATION

HYSIS SIMULATION



Stream No. 7

Name		
-- Overall --		
Molar flow kmol/h		64.5523
Mass flow kg/h		2846.5000
Temp C		56.3228
Pres MPa		1.9682
Vapor mole fraction		0.0000
Enth kW		-2089.8
Tc C		96.6700
Pc MPa		4.2496
Std. sp gr. wtr = 1		0.508
Std. sp gr. air = 1		1.523
Degree API		147.2079
Average mol wt		44.0960
Actual dens kg/m3		436.7512
Actual vol m3/h		6.5174
Std liq m3/h		5.6067
Std vap 0 C m3/h		1446.8534
-- Vapor only --		
Molar flow kmol/h		64.5523
Mass flow kg/h		2846.5000
Average mol wt		44.0960
Actual dens kg/m3		436.7512
Actual vol m3/h		6.5174
Std liq m3/h		5.6067
Std vap 0 C m3/h		1446.8534
Cp kJ/kg-K		3.5933
Z factor		0.0730
Visc cP		0.06919
Th cond Btu/hr-ft-F		0.0439
-- Liquid only --		
Molar flow kmol/h		64.5523
Mass flow kg/h		2846.5000
Average mol wt		44.0960
Actual dens kg/m3		436.7512
Actual vol m3/h		6.5174
Std liq m3/h		5.6067
Std vap 0 C m3/h		1446.8534
Cp kJ/kg-K		3.5933
Z factor		0.0730
Visc cP		0.06919
Th cond Btu/hr-ft-F		0.0439
Surf. tens. dyne/cm		3.5382

HYSIS SIZING

Control Valve Sizing for Stream # 7

Loadings and Properties

	Vapor	Liquid
Flow rate	0.0000 kg/h	2846.5000 kg/h
Flow rate	0.0000 m3/h	6.5174 m3/h
Density	0.0000 kg/m3	436.7512 kg/m3
Total flow	2846.5000 kg/h	
Upstream pressure	1.9682 MPa	
Downstream pressure	0.4860 MPa	
Critical flow factor	0.9800	
Corr. factor for reducers	1.0000	
Static head	0.0000 mm	
Seat type	Single-Seat	
Flow type	Two phase flow	
Calc. coefficient Cvc	1.6216	
Capacity coefficient Cv	9.0000	
Cvc / Cv ratio	0.1802	
Valve size	1.0000 in	

VENDOR RECOMMENDED VALVE SIZE 1"/ANSI/CL300 IS ACCEPTABLE.