YORK® INTERNATIONAL
PROCESS SYSTEMS

Relief Valve Calculations

Date: 2/23/10

Customer: MUSTANG
Engineer: TTP

Job #: 294100

REFRIGERANT: R-134a

CALCULATION:

Vessel	Tag No.	Criterion	f	D(in)	L(Ft)	C (lb/min)	SCFM
COMP COOLER	HX-401	A	1.6	6	5	3.6	48.0
GEAR COOLER	HX-501	A	1.6	6	6	4.4	58.7

CRITERIA:

A. ASHRAE Standard 15-2001, para 9.7.5:

C = fxDxL where: C = Required valve capacity in lb/min of air.
f = refrigerant factor (R-134a = 1.6)
D = outside diameter of vessel, ft.
L = applicable length, ft (tube length for heat exchangers)

NOTE: NO COMBUSTIBLE MATERIALS ASSUMED TO BE WITHIN 20 FEET.

B. ASHRAE Standard 15-2001, para 9.8:

C = % of compressor capacity.

THE CONTROL CIRCUIT ACTS TO UNLOAD THE COMPRESSOR IN THE EVENT OF A HIGH PRESSURE SHUTDOWN SEQUENCE, THEREFORE THE NEW ASHRAE 15 CODE ALLOWS THE RELIEF VALVE TO PROTECT AGAINST MINIMUM COMPRESSOR CAPACITY.

C. Sections 3.14 & 3.15 and API Recommended Practice 521 March 1997 (see attached)

NOTE: TAG NUMBERS ARE THOSE SHOWN ON FRICK P&ID NO. 659D2148

SELECTION:

Vessel	Tag No.	Manufacturer	Model	Capacity lb/min	Valve Size	Req'd lb/min	Set Press PSIG	Quantity
COMP COOLER	HX-401	HYDROSEAL	15D1F0C10	36.23	1/2" X 1"	3.6	200	1
GEAR COOLER	HX-501	HYDROSEAL	15D1F0C10	36.23	1/2" X 1"	4.4	200	1