

CONDENSER REFRIGERANT RELIEF VALVE CALCULATIONS

Job Name: UNITED RENTALS
CRR Job No.: 19171
Unit Model: SCOD030AR4

TUBE SIDE PRODUCT R410A
TUBE SIDE PRESSURE 650 PSIG

XP AREA NO
MULTIPLIER 1 **M **2.5 for XP, 1.0 for normal
REFRIGERANT FACTOR 2.5 **F **Refer Table

MUST RELIEVE HIGH SIDE ONLY - CALCULATE HIGH SIDE VOLUME ONLY

COND COIL
TUBES HIGH 40
TUBES ROW 4
COIL/CIRCUIT SYSTEM 2
TUBE LENGTH 77 IN
TUBE DIA 0.375 IN
GROSS VOLUME 2720 CU-IN

DISCH PIPE
TUBES HIGH 1
TUBES DEEP 1
TUBE LENGTH 120 IN **Estmd
TUBE DIA 1.375 IN
GROSS VOLUME 178 CU-IN

LIQUID PIPE
TUBES HIGH 1
TUBES DEEP 1
TUBE LENGTH 80 IN **Estmd
TUBE DIA 1.125 IN
GROSS VOLUME 79 CU-IN

TOTAL VOLUME 2978 CU-IN

REFORMAT TOTAL SYSTEM VOLUME INTO VESSEL

ASSUME DIAME' LENGTH 154 IN **Estimate from condenser total FL /
REQ AREA 19 IN system, FL x no of coil per system
DIAMETER 5

SHELL OD 4.96 IN
SHELL THICKNESS 0.00 IN

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SHELL ID 4.96 IN
SHELL GROSS ID AREA 19.34 SQIN

TUBE QTY 0
TUBE OD 0.75 IN
TUBE AREA 0.44 IN
TUBE TOTAL AREA 0.00 SQIN

SHELL NET AREA 19.34
EQUIVALENT SHELL DIA 4.96 IN
EQUIVALENT SHELL DIA 0.41 FT D

SHELL LENGTH 154 IN
SHELL LENGTH 12.83 FT L

MIN PRV C=MFDL
MIN PRV 13.27 LB-AIR /MIN **Result

SELECTED PRV
SUPERIOR 3002C
SETTING 650 PSIG
RATING 21.6 LB-MIN

ACCEPTABLE