

Jun-13-01 07:21A

Jun-08-01 07:55A

FILE NO:

FROM: TODD @ NOR-CAL  
TO: L. JONES

P.01

P.02

DATE:  
RUN BY:

DCE

1190-T010156-00-B

CIRCULAR UNREINFORCED SINGLE BELLOWS

CODE - EJMA

INPUTS:

- 1) D = I.D. OF BELLOWS = 8
- 2) NP = NUMBER OF PLYS = 1
- 3) T = NOMINAL THK OF 1 PLY = .012
- 4) Q = CONVOLUTION PITCH = .4415
- 5) W = CONVOLUTION HEIGHT = .636
- 6) N = NUMBER OF CONVOLUT. = 19
- 7) TE = TEMPERATURE = 70
- 8) P = INTERNAL PRESSURE = 15
- 9) TC = COLLAR THK = 0
- 10) LT = TANGENT LENGTH = 0
- 11) EX = AXIAL EXTENSION = .75
- 12) CO = AXIAL COMPRESSION = 1.5
- 13) LA = LATERAL OFFSET = 0
- 14) AN = ANGULAR ROTATION = 0

BELLOWS MATERIAL - CRES 321 - E = 2.83E+07 ; S<sub>y</sub> = 18800  
GAS/STEAM MEDIA

RESULTS:

- CK = .3537661      CY = .6336088      - FACTORS
- CP = .7121316      CF = 1.403601      CD = 1.57401      FACTORS
- F - AXIAL SPRING RATE = 100.2246
- L - LATERAL SPRING RATE = 159.7821
- M<sub>L</sub> - LATERAL MOMENT RATE = 670.166
- M<sub>a</sub> - ANGULAR MOMENT RATE = 16.3576
- T<sub>sr</sub> - TORSION SPRING RATE = 1844319
- C<sub>r</sub> - LIMITING DESIGN PRRS = 11.2606
- I - MOMENT OF INERTIA = .014
- X - EQUIVALENT PIPE WALL = .2719
- W<sub>b</sub> - MASS OF BELLOWS = 2.4966
- BE - MOVEMENT PRR CONVOLUT = .0789
- EX = .0395    EY = 0    EA = 0
- EC = .0789    EY = 0    EA = 0
- GP - CONVOLUTION GAP = .2088
- M<sub>v</sub> - MAX VELOC. W/O LINER = 4.2821
- F<sub>a</sub> - AXIAL FREQUENCY = 62.1562
- F<sub>l</sub> - LATERAL FREQUENCY = 161.9937
- S1 = 0
- S2 = 1645.624
- S3 = 403.4483
- S4 = 15455.2      S4(.35) = 5409.321
- S5 = 440.7708
- S6 = 70478.1
- St = 82019.93
- NC = 1566595