Readme Supplement

for

CAEPIPE Version 5.21

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API Standard 617

(Seventh edition, June 2003)

API Standard 617 (Seventh edition, June 2003) for Compressors

1. Allowables for each Nozzle

The total resultant force and resultant moment imposed on the compressor at any connection should not exceed

$$3F_r + M_r \leq 927D_e$$

Where

F_r = resultant force at the Nozzle (lb)

M_r = resultant moment at the Nozzle (ft.-lb)

De = nominal pipe size (inches) of the connection up to 8" in diameter
= $(16 + D_{nom})/3$ If the size is greater than 8"

2. Combined Allowables for Compressors

The combined resultants of the forces and moments of the inlet, sidestream, and discharge connections resolved at the centerlines of the largest connection should not exceed the following two conditions:

(a) The resultant should not exceed:

$$2F_c + M_c \leq 462D_c$$

Where

F_c = combined resultant of inlet, sidestream, and discharge forces (lb)

M_c = combined resultant of inlet, sidestream, and discharge moments, and moments resulting from forces (ft.-lb)

D_c = diameter of one circular opening equal to the total areas of the inlet, sidestream, and discharge openings. If the equivalent nozzle diameter is greater than 9”, use a value value of D_c equal to (18 + Equivalent Diameter) / 3

(b) The components of these resultants shall not exceed:

$$F_x = 92D_c \qquad M_x = 462D_c$$
$$F_y = 231D_c \qquad M_y = 231D_c$$
$$F_z = 185D_c \qquad M_z = 231D_c$$

Where

F_x = horizontal component of F_c parallel to the compressor shaft (lb)

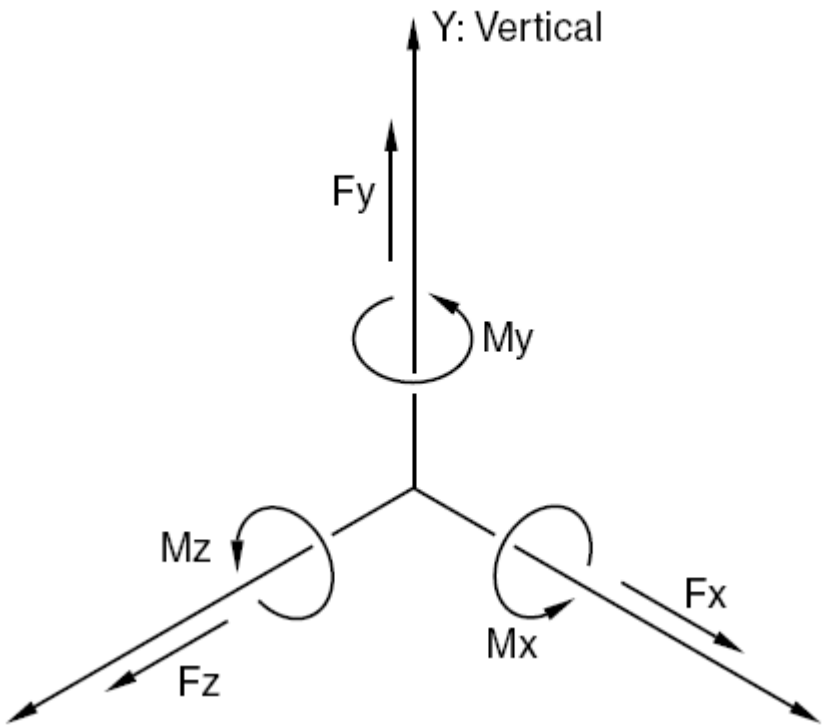
F_y = vertical component of F_c (lb)

F_z = horizontal component of F_c at right angles to be compressor shaft (lb)

M_x = component of M_c around the horizontal axis (ft-lb)

M_y = component of M_c around the vertical axis (ft-lb)

M_z= component of M_c around the horizontal axis at right angles to the compressor (ft-lb)



Z: Perpendicular to compressor shaft X: Parallel to compressor shaft