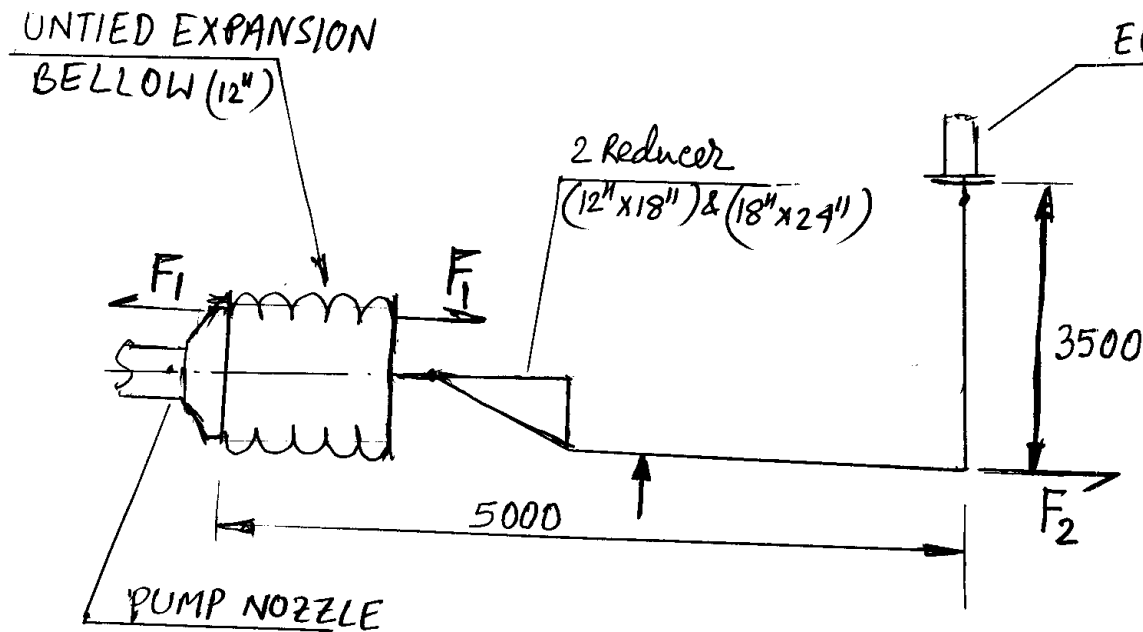


1) IN CAESAR, EFFECTIVE ID ZERO, & MANUALLY ENTER FORCE F_1 & F_2

2) CAESAR OUTPUT RESULT,

A) AXIAL SUSTAIN LOAD ON PUMP NOZZLE
= 630 N

B) OPERATING PUMP NOZZLE AXIAL LOAD
= 2440 N



PRESSURE = 1.4 bar, TEMPERATURE = 100°C

F_1 = THRUST FORCE

$$= (\text{EFFECTIVE AREA} - \text{INTER PIPE AREA}) \times \text{PRESSURE}_{(\text{BELLOW})}$$

$$= 2930 \text{ N}$$

$$F_2 = (\text{INTERNAL PIPE AREA}) \times \text{PRESSURE}$$

$$= 10900 \text{ N}$$

AXIAL STIFFNESS OF BELLOW = 597 N/mm

QUESTION

- 1) IS PUMP AXIAL LOAD, 630 N & 2440 N REASONABLE SINCE THERE IS NO LIMIT STOP IN THE LINE?
- 2) OR AT PUMP NOZZLE MINIMUM LOAD (AXIAL) SHOULD BE AT LEAST 2930 N?