Technical Information Sheet

Selection of expansion chamber

To determine the correct expansion chamber size required for your application, obtain the following data and execute the steps.

1. The amount of oil, in ounces, normally in the bearing housing. _____oz.

2. Multiply above answer by 1.804 to obtain _____in^3 (oil volume). Place this value into the table below STEPS A & B in^3 (oil volume).

3. The temperature range of the bearing housing. High _____°F Low _____°F. Place High & Low temperature in STEP C. Subtract the low from the high and place in STEP A (high-low temp).

4. Complete STEP A. Multiply oil volume by temperature difference and coefficient of expansion. (NOTE: .0004 is coefficient of expansion for most turbine oils). Place answer in STEP D, in^3 (oil expansion).

5. The total volume of the bearing housing. Many customers may not know this. Contact your pump manufacturer for this information. _____oz. (total volume).

6. Multiply answer from above by 1.804 to obtain _____in^3 (sump volume). Place this value into the table STEP B in^3 (sump volume).

7. Complete STEP B, subtract in^3 (oil volume) from in^3 (sump volume) to get in^3 (air volume) and place answer in both places in STEP C, in^3 (air volume).

8. Follow instructions in STEP C to get in^3 (air expansion). Place answer into STEP D in^3 (air expansion).

9. Complete STEP D by adding to get in^3 (total expansion), with this information you can select the correct size expansion chamber for you application.

STEP A	Multiply the volume of oil with the temperature span to get oil expansion. _____in^3 (oil volume) X _____°F (high-low temp) X .0004 = _____in^3 (oil expansion)
STEP B	Subtract the oil volume from the sump volume to get air volume. _____in^3 (sump volume) - _____in^3 (oil volume) = _____in^3 (air volume)
STEP C	Determine the absolute temperature range for air, divide high temp + 460 by low temp + 460. Multiply (air volume) with temperature factor. Then subtract the (air volume) to get the air expansion for the maximum change in temperature. _____in^3(a ir volume) x $\frac{(\text{\_\_\_\_\_ high temp} + 460)}{(\text{\_\_\_\_\_ low temp} + 460)}$ - _____in^3(a ir volume) = _____in^3(a ir expansion)
STEP D	Add (oil expansion) with (air expansion) to get total expansion. _____in^3 (oil expansion) + _____in^3 (air expansion) = _____in^3 (total expansion)

TRICO
Trico Mfg. Corp. • 1235 Hickory Street • Pewaukee, WI 53072
Phone: 262-691-9471 • Fax: 262-691-2576 • www.tricomfg.com