

# Axial Alignment Instructions

(Vertical/horizontal lateral alignment should be complete at this point)

1. Using a dial indicator, measure the total axial end floats of both low and high speed gear shafts and record.  
L.S. thrust total = \_\_\_\_\_ H.S. thrust total = \_\_\_\_\_  
\_\_\_\_\_
2. Using a dial indicator, measure the total axial thrust of the YORK compressor (.012”-.014”) and record.  
YORK thrust = \_\_\_\_\_
3. Position the gear shafts as shown in compressor drawing. The low speed gear should be pushed “into” gear box against thrust face X. High speed gear should be pushed all the way “into” gear box against thrust face Y. This can be confirmed using recorded measurements from Step 4.

## Thermal Growth Table $\Delta = 100^{\circ}\text{F}$ rise

- “A” = .010”
- “B” = .006”
- “C” = .006”
- “D” = .005”
- “E” = .002”
- “F” = .010”
- YORK shaft = .000”
- Gear case expansion = .006”

## Drawing Code

- T = YORK running thrust (active) face (tilting pad)
- U = YORK reverse thrust (counter) (may run on this face on surge or shut down)
- V = Gap between YORK quill shaft end and CPLG stub (with CPLG bolts torqued) spacers are added to set up active train axially
- W = Inactive thrust of low speed gear
- X = Active thrust of low speed gear (thrust created by gear helix forces only)
- Y = Active thrust of high speed gear (thrust created by gear helix forces only)
- Z = Inactive thrust of high speed gear



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4. Position the YORK shaft on its reverse shaft face by pushing the shaft fully into the compressor. This should be confirmed using dial indicator measurements from Step 2. The Bentley Nevada axial displacement monitor can also be used to confirm this since the monitor should read “0” when the compressor shaft is on thrust T. This should show total thrust play in counter direction when compressor shaft is on its inactive thrust face (12 - 14 mil). The dial indicator and the B/N should agree within 1.0005”.
5. Install the YORKFlex CPLG on the low speed gear shaft without installing the nut that attaches the CPLG to the YORK shaft. The nut can be left on the YORK shaft, but it should be screwed back toward the compressor so it is out of the way. Assemble the coupling as per YORK instructions, and torque the coupling 3/8 in cap screws to 41 ft/lb so that CPLG diaphragms are compressed as in running condition.

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6. Make sure gear and compressor shafts are still positioned as given in Steps 3 and 4. Now measure the gap distance  $V$  between the threaded ends of the YORK CPLG and compressor shaft, using a dial vernier. If feeler gauges are used, care must be taken to obtain accurate measurements since the YORK CPLG diaphragms are still very flexible. Record Gap  $V$  measurement: \_\_\_\_\_
7. Subtract total YORK thrust (obtained in Step 2) from Gap  $V$  measurement:  $V$  \_\_\_\_\_ - (YORK thrust) \_\_\_\_\_ = \_\_\_\_\_
8. Subtract .010" from result obtained in Step 7:  
\_\_\_\_\_ - \_\_\_\_\_ = \_\_\_\_\_ (spacer thickness).  
This is the diameter spacer washer'(s) to be installed at  $V$  to complete the axial alignment of the YORK/PHILA gear tolerance  $\pm .002$ ".

**Note:** the spacer'(s) total thickness is not to exceed .281"

**Example:** Gap  $V$  =20%, YORK Compressor total thrust = .013  
.207-.013=.194-.010=.184 (spacer thickness)

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