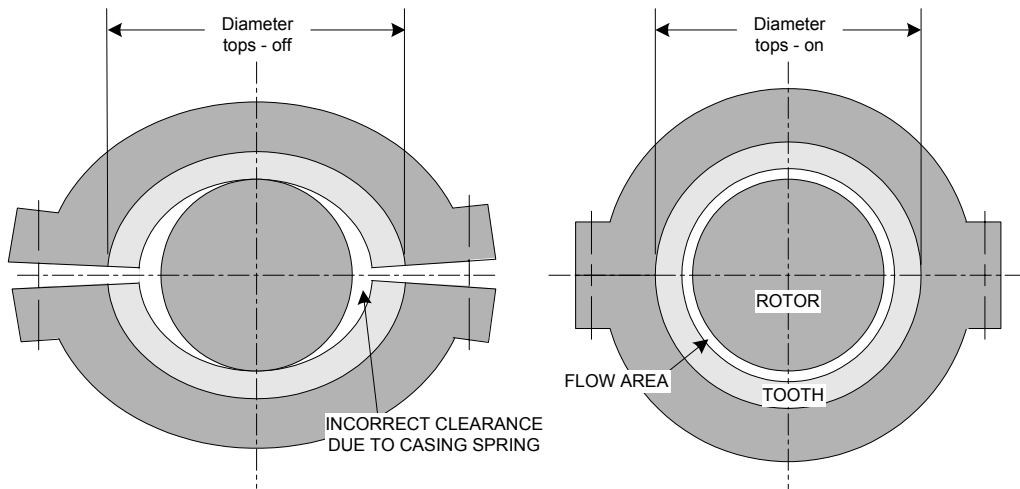


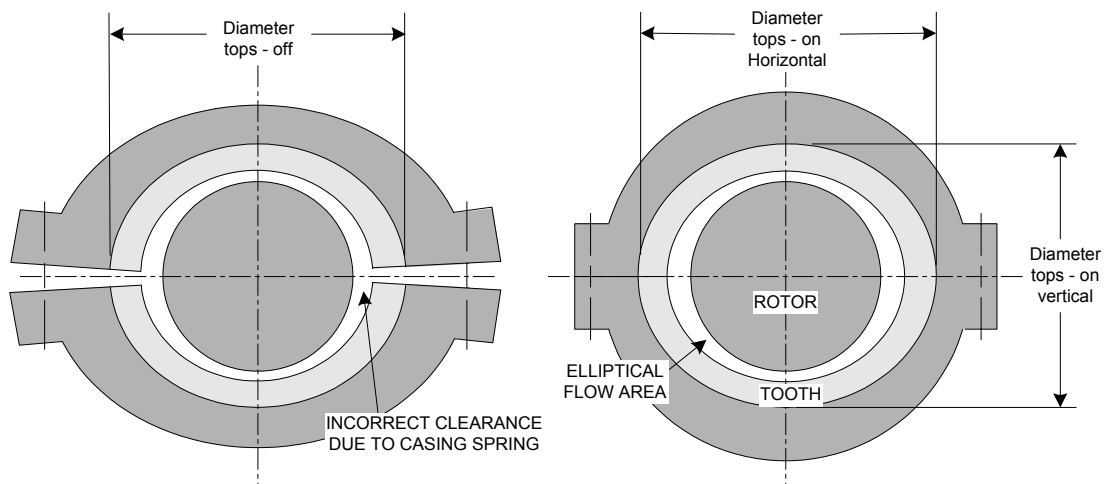
# eSTPE & Steam Path Audits

## Corrections for Casing Spring & Ellipse



Differences in temperature of the top and bottom of the casing can cause casing distortion during hot or still-warm starts and stops if not performed to the manufacturer's specification. Distortion can also be the result of material creep from operating at high temperatures and pressures over a long period of time.

The user can enter the tops-on and tops-off diameters to identify a casing spring condition. The casing above is shown sprung outward, but an inward spring is also possible. eSTPE will correct for this condition and perform all of the loss calculations with a corrected flow area. The clearance graphs will also be plotted for the tops-on or operating condition.



Casing spring may also be accompanied with an elliptical casing condition. To correct for an elliptical casing, enter the tops-on horizontal and vertical diameters. Calculations will now be performed using the corrected elliptical flow area. The graphs will also be plotted using clearances in the running condition which will also be corrected for casing spring. Any corrections that the user may wish to add because of off-axis major/minor diameters may be added in eSTPE's Hand Calculations section.