OVERVIEW:
All Tech Inspection utilizes a special ultrasonic inspection procedure to determine the integrity of the gasket seating surface of raised face flanges without disassembling. The examination provides quantifiable information of the effective gasket sealing surface. The information can be used to predict life projections for maintenance planning activities preventing accidental releases.

Flanges operating at 250° or less can be inspected onstream. The surface conditions must be smooth, painted or non-painted. If painted the paint must be bonded.

PROCEDURE:
Selective pulse echo, contact angle beam ultrasonic techniques are used to examine the flange face gasket seating area. The examination is performed by placing the transducer on the flange between the bolt holes (see Figure 2) and scanning toward the bore of the flange. The examination typically is performed on four quadrants unless more coverage is required. Quantifiable information can be provided of the extent of flange face corrosion.

Figure 1. Corrosion of gasket seating surface of raised face

Figure 2. Transducer placement on flange.
CONCLUSION:

This non-intrusive examination procedure is used for the examination of flange faces for corrosion. Flanges may be routinely monitored on regularly schedule inspection frequencies. The inspection results can be used to predict failure rates so flange repair or replacement can be scheduled for routine maintenance to aid in the prevention of unexpected leaks.

Figure 2. Flaw detector with flange.

Figure 3. Flaw detector screen.

Figure 4. Flange face and measurement of corrosion with graduated scale.