

Title: Effect of Various Conditions in Primary Element on Orifice Meter
Measurement Table Follow by Roland Rollins

EFFECT OF VARIOUS CONDITIONS IN PRIMARY ELEMENT ON ORIFICE METER MEASUREMENT
TABLE FOLLOW

Leaks Around Orifice Plate

1. With one clean cut through sealing unit
 - a. Cut on top side of fitting (3.3%)
 - b. Cut next to tap holes (6.1%)
2. With "V" notch cut through sealing unit 1/4" wide a top of "V"
 - a. Notch up a top (1.5%)
 - b. Notch down on bottom (0.4%)
 - c. Notch on tap side (0.9%)
 - d. Notch of opposite side from taps (1.2%)
3. Orifice carrier up @ 3/8" from bottom. (Plate not centered) (8.2%)

Dirty Plate

1. Valve lubricant on upstream side of plate
 - a. Three deposits (0.0%)
 - b. Nine deposits (0.6%)
 - c. Coated bottom 1/2 of plate 1/16" thick (9.7%)
 - d. Coated full face of plate 1/16" thick (15.8%)
2. Valve lubricant on downstream side of plate
 - a. Three deposits (3.3%)
 - b. Nine deposits (2.6%)
 - c. Coated bottom 1/2 of plate 1/16" thick (0.8%)
 - d. Coated full face of plate 1/16" thick (1.7%)
3. Valve lubricant on both sides of plate
 - a. Plate coated 1/8" bottom 1/2 of both sides (10.1%)
 - b. Plate coated 1/8" full face of both sides (17.9%)
 - c. Plate coated 1/4" full face of both sides (27.4%)

Nicked Plate

1. .05" notch on tap hole side (0.3%)
2. .05" notch opposite tap holes (0.6%)
3. Two .02" notch 180° apart placed on opposite taps (1.0%)
4. Two .05: notch 160° apart placed on and opposite taps (0.1%)

Dull Edged Plate

1. 1/4th circumference (1.5%)
2. 1/2 of circumference (8.1%)
3. 3/4th circumference (9.4%)
4. Entire plate (12.7%)

Beveled Side Upstream (24.4%)

Warped Plate

1. Warped toward gas flow 1/8" from flat (2.8%)
2. Warped toward gas flow 1/4" from flat (9.1%)
3. Warped away from gas flow 1/8" from flat (0.6%)
4. Warped away from gas flow 1.4" from flat (6.1%)

Turbulent Gas Stream

1. Upstream valve partially closed - straightening vanes in (0.7%)
2. Upstream valve partially closed - straightening vanes out (6.7%)
3. Liquid in meter tube 1" deep in bottom of tube (11.3%)
4. Grease and dirt deposits in meter tube (11.1%)