YORK
BY JOHNSON CONTROLS
Service Information

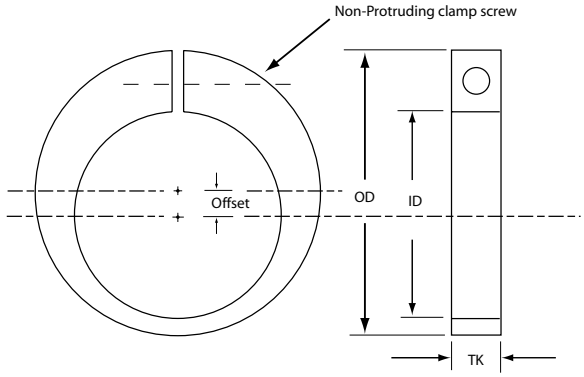
File In/With: N/A
SI0211
New 709

Equipment Affected: Multi-Stage Compressors

Balance Piston Tubes

General

In the past, there have been a few instances where the balance piston vent tubes were damaged due to rotation during operation. Historically at installations where this condition was identified, a field modification was made to drill and tap a ¼ -20 hole through a diffuser vane for the purpose of installing a socket head set screw to engage the balance piston tube. Since balance piston tube rotation is difficult to predict, engineering has incorporated a new design feature intended to prevent rotation of balance piston tubes on all new and retrofit compressor orders.



Comp	OD	ID	Offset	TK	Clamp Screw	Screw Torque	YORK P/N
26"	1- 5/16"	7/8"	3/32"	13/32"	#10-32	68 in-lbs	029-25318-000
38"	1- 7/8"	1-1/4"	1/8"	13/32"	#10-32	68 in-lbs	029-25319-000
55"	2- 3/4"	2"	3/16"	13/32"	#10-32	68 in-lbs	029-25320-000

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FIG. 1 – OFFSET TUBING CLAMP

The new design features a split tubing clamp that grips the end of the balance piston tube . The OD of the tubing clamp is eccentric to the bore. The tubing clamp is slipped over the end of the equalizing line tube and positioned flush with the end of the balance piston tube (see FIG. 3). A small #10 Hex socket head cap screw is used to tighten the clamp in place. Loctite 242 (blue, removable) is applied to the threads and the screw is torqued to 65-68 (max.) inch-pounds.

FIG. 2 – DIFFUSER PLATE

FIG. 3 – TUBING CLAMP

The balance piston tube through-hole in the last stage exit plate now has added a counterbore that is eccentric to the through-hole (see FIG. 2). The tubing clamp/balance piston tube assembly is carefully inserted using caution not to damage the seal rings and is flush with the diffuser exit plate surface (see FIG. 4). The seal ring arrangement is unchanged from the existing design. Once installed, the piston ring housing holds the balance piston tube in place (see FIG. 5). Should removal be required, it is simply a matter of sliding the tube clamp assembly out from its counterbore.

FIG. 4 – INSTALLED TUBING CLAMP

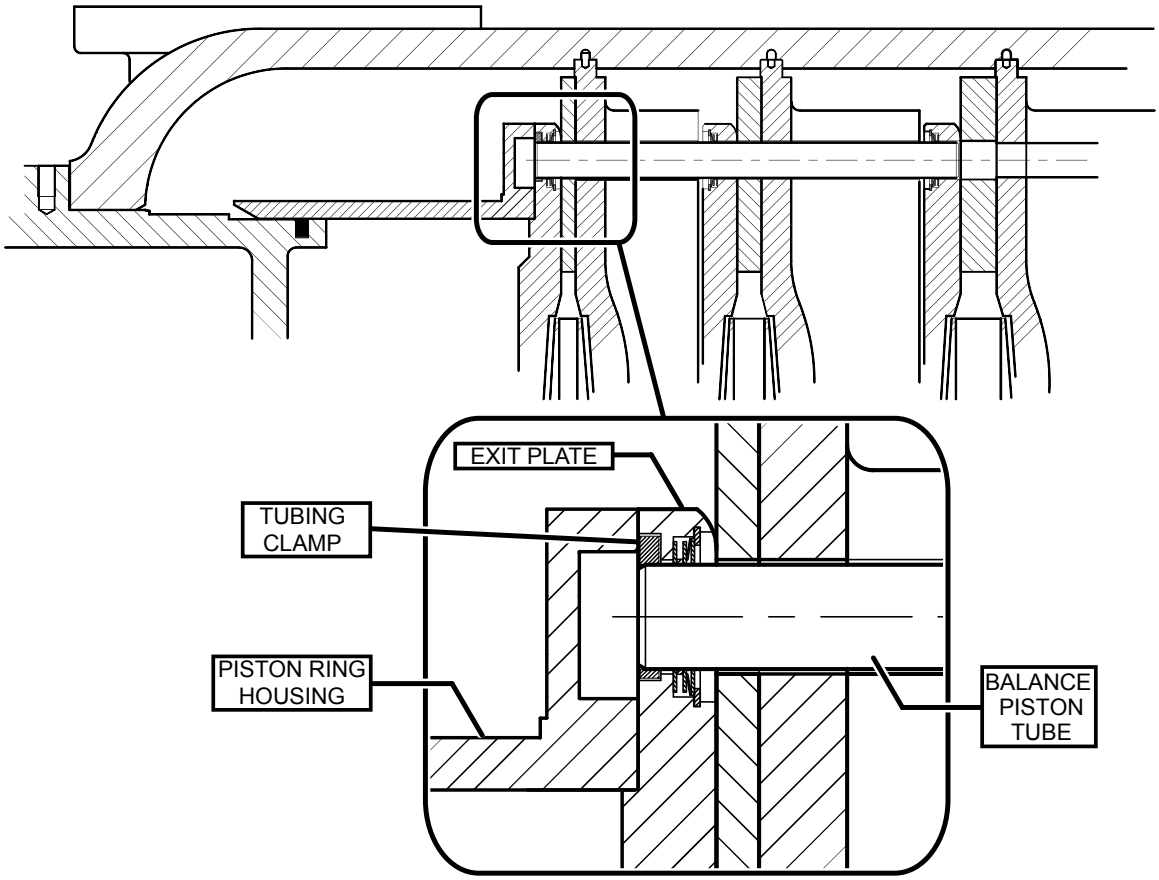

FIG. 5 – INSTALLED TUBING CLAMP DETAILS