

Used Parker FS251-4FP No-spill Coupling Inspection

The two female couplings from the ITW window cooling circuit was removed and replaced by new couplings on Wednesday February 14th, 2018. After rinsing and drying the couplings, they were disassembled for inspection. The following observations were made:

- O-rings intact and no damage observed
- PTFE backing ring brittle causing it to brake during removal
- Damage or wear observed on one of the Face Sleeves
- Deposited material observed on Valve Assembly and Valve Retainer (material could be removed)
- Face sleeve not moving smoothly over springs on one of the couplings (same as with damaged Face Sleeve)

These couplings have likely been in service for almost 20 years, since the beginning of ISAC around.



Materials of Construction

Machined Parts:	Stainless Steel, AISI type 316
Springs:	Stainless Steel, AISI type 316.
Locking Balls:	1/4 - 3/8": 302 SS; 1/2 - 3/4": 316 SS 1": 440 SS
Backup Washers:	PTFE
Elastomer Seals:	Fluorocarbon is standard. Wide range is available.

Figure 1: From Parker catalog:

http://www.parker.com/Literature/Quick%20Coupling/catalog_sections/FS%20Series-Catalog%203800_SectionB.pdf



Figure 2: Wear on Face Sleeve (right)



Figure 3: Broken (upon disassembly) PTFE Backup Ring. The material properties have changed to make the PTFE material brittle and possibly worn.



Figure 4: O-rings and valve assembly with O-ring. Valve assembly coated with deposit.



Figure 5: Valve Retainer with material deposit