

SAA09PPF126-002
D/L: 53.00
SYS: FCSS GH2-OPF
HG3

Critical Item: Check Valve

Find Number: A79810

Criticality Category: 1S

SAA No: 09PPF126-002

System/Area: FCSS GH2/OPF

NASA Part No: 79K80131-3

PMN/ Name: S70-0815-01 Piping-Valve Panel to Vent Stack

Mfg/ Part No: Circle Seal K1220T-488

Drawing/ Sheet No: 79K06045 1/3

Function: Prevent reverse flow of LH2/GH2 in the GHe purge line from the LH2 vent stack.

Critical Failure Mode/Failure Mode No: Fails closed/09PPF126-002.001

Failure Causes: Jammed due to contamination/mechanical failure.

Failure Effect: Loss of purge to vent stack prior to and during venting hydrogen could create an explosive mixture in the vent stack, resulting in fire or explosion with loss of life and/or vehicle. Failure is detectable by drop out of pressure switch A509783 with event cursor block GFHXU215E at console C6, and/or loss of audible GHe purge flow at check valve A79810.

Time To Effect: Immediate

Acceptance Rationale.

Design:

- o This check valve is operated within all design specifications.
- o Component specifications

	<u>Rated:</u>	<u>Actual</u>
Operating pressure:	6,000 psig	750 psig Max
Proof pressure:	1-1/2 times operating press.	
Burst pressure:	4 times operating press.	

o Materials:

Body and trim:	300 series SST
Spring:	302 SST
Seals:	Teflon

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Check Valve A79810 (Continued)

Test:

- o The manufacturer's certification test requirements include the following tests:
 - o Proof
 - o Leak
 - o -functional

Inspection:

- o OMRSD 79K11722 requires Leak check and forward cracking pressure checks at component replacement.
- o File VI requires the H2 vent stack purge pressure switch A509783 (measurement GFHX8215E) to activate when valve A510299 is open, before venting hydrogen to the H2 vent stack.
- o File VI requires the H2 vent stack GHe purge flow to be verified audibly, before venting hydrogen to the H2 vent stack.

Failure History:

- o The PRACA database was queried and no failure data was retrieved against this component.
- o The GIDEP failure data interchange system has been researched and no failures of this component were found.

Operational Use:

- o Correcting Action:
 - Do not start venting hydrogen to the H2 vent stack if the H2 vent stack GHe purge is not flowing.
- o Timeframe:
 - Each time, prior to starting hydrogen venting to the H2 vent stack, verify audible flow of the LH2 vent stack GHe purge.

*Attachment 5050257AN
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