

DATE: May 17, 1988

PNRA #: 43-S70-1130-01,-02-QD01-04

END ITEM EFFECTIVITY:

X X X
OV102 OV103 OV104

MODEL NO/NAME: S70-1130, OMS/RCS High-Pressure Helium Quick Disconnect Filter Assembly Set (KSC)

ORBITER SUBSYSTEM: OMS/RCS

PART NUMBER:	PART NAME:	REFERENCE DESIGNATION:	QTY.:
GW70-421130-001 -004	Quick Disconnect/ Filter Assembly	QD01	30 38

CRITICALITY NUMBER: 2

FUNCTION: Provides interface with the vehicle OMS, FRCS, ARCS high-pressure helium system disconnects and ground system fluid lines.

CRITICAL FAILURE MODE: Filter passes contamination.

CAUSE: Mechanical degradation.

FAILURE EFFECT ON:

- (A) END ITEM: Loss of cleanliness level, possible end item damage.
- (B) INTERFACING SUBSYSTEM(S): No damage to interfacing subsystems.
- (C) ORBITER: Potential for damage to the orbiter airborne half couplings (possible source of external leakage).
- (D) PERSONNEL: No effect.

HAZARDS: Introduction of contamination into the vehicle system.

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ACCEPTANCE RATIONALE

DESIGN: Per specification MC276-0017, all of the materials used in the filter assembly are 300 series corrosion resistant steel with the exception of a Teflon "O" ring, which is used as a seal between the case and element assembly. Both materials are, however, compatible with the operating media. The filter assembly is rated at 10 micron absolute (25 micron - maximum particle size). The airborne half of the quick disconnect assembly (orbiter side) contains a filter which would catch any contaminants passed by the upstream GSE.

TEST: Per MC276-0017, the filter housing is an integral part of the coupling and is burst pressure rated at 10,000 psi (maximum operating pressure 4600 psig).

Per MC276-0017, the filters are bubble point tested annually.

INSPECTION: Per MC276-0017, the filter is examined to verify conformance to SCD in material, dimensions, construction and identification marking. The filter element weave pattern shall be in accordance with the manufacturer's drawing.

OPERATIONAL USE: No operations apply for reduction of risk.

If emergency shutdown is required, Appendix Z of the OMI in use is initiated (Reference OMI's V2322, V1031 and V1180).

DETECTION: Detection of flow increase; fill time reduced.

CORRECTIVE ACTION: Isolation and replacement.

FAILURE HISTORY: Per the PRACA database, no failure history was reported for this particular mode.