

DATE: October 16, 1990

SC4024-C
ATTACHMENT
Page 17 of 16

PMA #: 43-570-1131-01,-02-QDF01-03

END ITEM EFFECTIVITY:

X	X	X
CV102	CV103	CV104

MODEL NO/NAME: S70-1131 (KSC), OMS/RCS HYPERGOLIC QUICK
DISCONNECT/FILTER ASSEMBLY SET

SUBSYSTEM: OMS/RCS

PART NUMBER:	PART NAME:	REFERENCE DESIGNATION:	QTY.:
GW70-421131-001	Hypergolic Quick Disconnect/Filter Assembly (246 Couplings Total)	QDF01	1
GW70-421131-007	Hypergolic Quick Disconnect/Filter Assembly (182 Couplings Total)	QDF01	1

CRITICALITY NUMBER: 2

FUNCTION: Provides interface QD connection between the orbiter OMS/FRCS
Panel-Service Walls and hypergolic supply facility.

CRITICAL FAILURE MODE: Filter passes contamination.

CAUSE: Mechanical degradation.

FAILURE EFFECT ON:

- (A) END ITEM: Loss of cleanliness level, possible end item degradation.
- (B) INTERFACING SUBSYSTEM(S): Possible degradation of interfacing systems.
- (C) ORBITER: Potential for damage to the orbiter airborne half couplings (possible source of external leakage).
- (D) PERSONNEL: No effect as a filter rupture does not cause outside leakage.

HAZARDS: Introduction of contamination into the orbiter system.

DATE: October 16, 1990

5040244
ATTACHMENT
Page 12 of 16**ACCEPTANCE RATIONALE**

DESIGN: Ground half coupling filters are located in the coupling at the facility side interfaces. These filters are cone shaped- single mesh welded type and are easily removable for cleaning or replacement. The filter material is compatible with a fluid media of N2O4, MMH, GHe and GN2. The filter element contained in the airborne half coupling has a 200 micron maximum particle rating.

TEST: Per MC276-0018, the filter is tested to verify a 25 micron rating. The filter is proof pressure tested to 525 psi and differential pressure tested to 400 psi (maximum operating pressure 250 psi).

Per MC276-0018, the filter is bubble point tested annually.

INSPECTION: Per MC276-0018, 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 manufacturers' drawing.

Per OMI V6G14, in-place preventive maintenance is performed quarterly on both the oxidizer and fuel quick-disconnect assemblies at the Pad 207 and 107 foot levels.

Pre-operation inspection of the filter assembly is performed when performing OMI's V1031, V1180 and/or V2323.

OPERATION: No operations apply for reduction of risk.

If an emergency shutdown is required, Appendix 2 of the OMI in use is initiated (Reference OMI's V2323, V1031, V3567 and V1180).

DETECTION: Detection of flow increase. Fill time is shortened.

CORRECTIVE ACTION: Isolation and replacement.

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