



DATE: March 25, 1988  
REV : May 31, 1988

ACCEPTANCE RATIONALE

DESIGN: Review of assembly documents and Specification Material Document (SMD) MC276-0030 has provided design data points to be complied with for acceptance rationale.

Design data points:

Per QQ-c-326A Chromium plating (electrodeposited) for corrosion protection per type III servicing fluid NH<sub>3</sub>. Operational envelope is to exceed the expected use envelope. Dual seals are provided for leakage prevention. Manual engagement and closure with assurances of positive locking feature. No visible spillage at any pressure when disconnected.

TEST:

PRE-OPERATIONAL: Per OMI V1027, V3519 : pressure test to system operating pressures with GN<sub>2</sub> psig, are conducted prior to ammonia servicing. Controlled amounts of NH<sub>3</sub> are used to wet the GSE lines prior to full servicing.

INSPECTION:

PRE-INSTALLATION: Per MC276-0030 (5.1 - 5.1.5) Acceptance Test: Examination of product, The AHC, the AHC cap the GHC, and the GHC cap shall each be carefully examined to determine conformance to the requirements of this specification. Particular attention shall be given to weight, workmanship, finish, dimensions, construction, identification, marking, traceability level, and to the use of certified materials and processes.

AGE LIFE: Per OMI 56013 (V6D41), the assembly is inspected annually for compliance to the material and assembly specifications.

PRE-OPERATIONAL: Per OMI V1027, V3519 - components are inspected for cleanliness per MA0110-311, level 500 by visual inspection of bagging and sealing of interface ports and/or research of applicable TAIR books prior to each use.

OPERATION: No application to risk reduction.

DETECTION:

Visual and olfactory detection of ammonia discharge and the use of hand held sniffers to detect leakage.

CORRECTION: Isolation and replacement.

FAILURE HISTORY:

Review of FRACA Data Base has provided no failure history on item MC276-0030, ECLSS Operations.

**FREON CIRCULATION SET, S70-0790-2:**

This assembly is provided to facilitate freon 114 circulation through the Orbiter T-O Umbilical Carrier Plate, left side aft fuselage (Figure 3.2). The set consists of in-line 25 micron filters on the inbound lines, self latching disconnects with automatic shut off, flex hoses for fluid routing and a GSE freon jumper for servicing and freon 114 internal routing.

The QD/Filter set is the last stage of GSE in the ECLSS OPF and MLP operations and is responsible for the interface between ground circulation and the vehicle. During pad separation operations, the quick disconnects are pressurized to 50 psig and experience 10 g's during retraction of the T-O umbilical carrier plate into the tail service mast. Detailed assembly drawing of the QD assemblies are seen in Figures 3.2. Individual component identification is given in table 3.2.

**TABLE 3.2**

<b>ITEM</b>	<b>FUNCTION</b>	<b>LOCATION</b>
1	Primary freon supply	Primary T-O Umbilical
2	Primary freon return	"
3	Freon servicing jumper	Umbilical GSE L/H