

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

ACCEPTANCE RATIONALE

DESIGN:

Review of assembly documents and Specification Material Document (SMD) ME286-0066, -0088 has provided design data points to be complied with for acceptance rationale.

Design data points:

A delta pressure of 400 psig with no filtration breakdown. Static proof pressure test of 1.5 times normal, burst pressure in excess of 4 times operational pressures encountered. No external leakage at 400 psig helium. Maximum of 25 micron filtration, and not to exceed 12 psig (50 psig for -0068) pressure differential across filtration element with any loss of filtration.

TEST:

PRE-OPERATIONAL: Gas sampling of assemblies for debris (level 200 clean) prior to gas servicing.

INSPECTION:

PRE-INSTALLATION: Per ME268-0066, ME268-0068, Per 5.1.2: The filter shall be examined to determine conformance to SCD in material, dimensions, construction and identification marking. All critical components coating, welding, threads, and chemical etch are verified at inspection. The filter element weave pattern shall be in accordance with the manufacturer's drawing. Proof pressurization to 375 psig for 3 min, max leakage of 1E-4 SSC/min at 250 psig.

AGE LIFE: Per OMI 56013 the assembly is inspected annually (V6F2J), for compliance to the material and assembly specifications.

OPERATION:

Mechanical cut-off valves are available to isolate the filter elements if breakdown occurs.

DETECTION:

Pre-use and post servicing inspection of filters for possible loss, of integrity or signs of wear.

CORRECTION:

Isolation and replacement.

FAILURE HISTORY:

Review of the PRACA Data Base has provided no failure history on the ME286-0066, or ME286-0068.

ARPCS SET - MODEL #S70-0790-04:

The set is provided to facilitate the checkout of the Orbiter Atmospheric Revitalization Pressure Control System (ARPCS). Interface from GSE is through the system control panels in the forward left side of the mid fuselage (See Figure 3.4). The set consists of 25 micron in-line filters and connectors for attachment to system panels test ports and gas lines. Test connectors provide for checkout of system oxygen, oxidizer, water, and cabin pressure through ports on the lower crew compartment overhead panel. The set also provides for checkout of system oxygen and nitrogen gas pressures through ports on the mid fuselage supply panel, and checkout of system oxygen through ports on the lower crew compartment panel. QD MD13 with filter provides nitrogen for the potable/waste water tank through SYS A port on the ECLSS Service Panel. Individual component identification is given in table 3.4.

