

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
SHEAR PLATE ASSEMBLY, ITEM 115 (PIVOTED, PLANAR) ----- SV778540-56 (1)	2/1R	115FM18 Contamination breakthrough, PLSS 02 Manifold Filter.  Erosion.	END ITEM: Contamination passes through filter into downstream line.	A. Design - During 02 charging and discharging conditions, the minimum pressure drop through a clean filter will be 18 psid. This compares with a design structural requirement of 29 psid, resulting in a safety factor of 1.6. The fluid flowing through the screen is clean dry 02 (at subsonic velocity).
OR (ORU) ----- SV824133-8 (1)			GFE INTERFACE: Release of contamination could block 113B orifice. Reduction and/or loss of primary oxygen flow to the suit and water reservoirs. SOP may activate.  MISSION: Terminate EVA. Loss of use of one EMU.  CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP.  TIME TO EFFECT /ACTIONS: Minutes.  TIME AVAILABLE: Minutes.  TIME REQUIRED: Immediate.  REDUNDANCY SCREENS: A-PASS B-PASS C-PASS	B. Test - Component Acceptance Test - None.  PDA Test - Release of contamination into the 113B orifice would prevent the orifice from meeting a 5.5 - 6.78 lb/hr 02 at an inlet pressure of 850-950 psia.  Certification Test - Certified for a useful life of 20 years from the date of manufacture. Successful refurbishment will extend useful life to 30 years max. (ref EMUM1-0491, EMUM1-0027).  C. Inspection - Visual inspection (MIP) is performed for cleanliness during final cleaning to drawing requirement prior to delivery to finish stores.  D. Failure History - None.  E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, 113D and 113E regulation. None for EET processing.  F. Operational Use - Crew Response - Pre EVA: Trouble shoot problem. If no success, terminate EVA. EMU is no go for EVA. Consider use of 3rd EMU if available. EVA: No response if clogging is not severe enough to significantly reduce 02 flow (i.e. no activation of CWS, no noticeable drop in 02 pressure, no drop in feedwater 02 pressure). If these conditions exist, terminate EVA.  Training - Standard training covers this failure mode. Operational Considerations - Flight rules define go/no go criteria relate to EMU pressure integrity and regulation. EVA checklist procedures verify hardware integrity, and systems operational status prior to EVA. Real Time Data System allows ground monitoring of EMU systems.

EXTRAVEHICULAR MOBILITY UNIT  
SYSTEMS SAFETY REVIEW PANEL REVIEW  
FOR THE  
I-115 SHEAR PLATE ASSEMBLY  
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by: *J. Roman* 3/27/02  
HS - Project Engineering

Approved by: *RMB*  
LSS

*M. Smyth*  
HS - Reliability

*V. Barnes*  
HS - Reliability

*Alan Plough for RMA*  
HS - Engineering Manager

*[Signature]*  
HS - Reliability

*James J. Som* - ul/mods  
HS - Reliability

*John Olin*  
HS - Reliability

*[Signature]*  
HS - Reliability