1. SCOPE:

This drawing covers the design, fabrication, testing and cleaning of high pressure filter elements.

DESIGN REQUIREMENTS

2. APPLICABLE PUBLICATIONS:

ASME Boiler and Pressure Vessel Code

Section VIII	Rules for Unfired Pressure Vessels
Section IX	Welding

Military Standards

MIL-H-6875	Heat Treatment of Steel, Aircraft Practice and Process

3. GENERAL:

The filter elements shall be designed, fabricated, tested and cleaned in accordance with the data stated herein. Any additional measures necessary to provide filter elements which will satisfactorily pass the specified test shall be the manufacturer's responsibility. This MTF DWG shall govern and take preference where it may depart or conflict with provisions of referenced documents.

4. MATERIAL:

Filter elements shall be stainless steel woven wire cloth. All materials required shall be new and chosen for optimum performance.

5. PRESSURE DROP:

The pressure drop permissible for the filter element shall not exceed the values specified in the filter assembly drawing. The pressure element shall be designed so that when 50% of the openings are closed, the total pressure drop (element and housing) does not exceed 125% of the clean pressure drop.

6. COLLAPSING PRESSURE:

The filter element shall be designed to allow full operating pressure on a plugged element without collapsing the element. Deformation of the filter media is permissable providing the absolute rating of the filter media is not reduced.

7. INNERSEAL:

The innerseal between the filter bodies and the filter elements shall be leaktight at a differential pressure no less than the collapse pressure rating of the element.

8. ELEMENT MEDIA:

The filter media shall be woven wire cloth and shall be completely welded in place. Pleated wire cloth shall be in two layers. The inner layer shall be coarse mesh and the outer layer shall be fine mesh as required to achieve the specified degrees of filtration. Flattening or widening of wire cloth to achieve the specified micron rating; and patching of the filter media shall not be permitted. Direct flow impingement against the media shall not be an acceptable design. The wire cloth element shall be re-cleanable to a minimum of 95% of its original capacity. The filter element shall be so designed that the wire cloth may be removed and replaced with new material.

SYM	ZONE	DESCRIPTION	DATE	APPROVED
		REVISIONS		

SIGNATURES	DATE
DRAWN	
CHECKED	1/24/68
ENGINEER	2/23
ISSUED	MAR 8 1968
SUBMITTED	
APPROVED	
USED ON	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
MISSISSIPPI TEST FACILITY
BAY ST. LOUIS, MISSISSIPPI

MTSD GENERAL ELECTRIC

ELEMENT, FILTER, GAS
GENERAL

SIZE	DWG. NO.	REV.
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9. HEAT TREATMENT:

All stainless steel materials shall be in the annealed condition prior to fabrication. Parts that are cold worked shall be annealed after fabrication. If work hardened parts are to be welded, the annealing shall be performed before welding. Heat treatment shall be in accordance with MIL-H-6875.

10. WELDING:

All welding shall be performed and inspected in accordance with ASME Boiler and Pressure Vessel Code, Section VIII and IX for Unfired Pressure Vessels. Manufacturer shall certify that the welds are within required specifications.

TESTING

11. WITNESS OF TEST:

Prior to purchaser's acceptance the filter elements shall be subjected to the tests listed herein. The purchaser's authorized representative shall witness all the tests, if specified on the purchase order. The manufacturer shall notify the purchaser a minimum of 72 Hours prior to a scheduled test sequence.

12. BUBBLE TEST:

Each filter element shall be subjected to a bubble test to determine the soundness of the welds and to certify the absolute and nominal pore size rating of the filter media. The bubble test shall be conducted in accordance with Procedure ARP-901 or the manufacturer's procedure as approved by the purchaser prior to testing.

13. COLLAPSING PRESSURE TEST:

When specified on the purchase order, a minimum of one filter element of each design and/or size shall be subjected to a testing procedure to demonstrate that the element in a plugged condition can withstand full operating pressure. The test procedure shall be devised by the manufacturer and approved by the purchaser prior to testing. This test may be waived in writing, if the manufacturer can otherwise satisfactorily demonstrate that the element can withstand a differential pressure equal to the operating pressure.

14. REPORTS:

The manufacturer shall furnish two (2) certified, reproducible copies of the following reports:

Bubble Tests
Collapsing Pressure Test

SYM	ZONE	DESCRIPTION	DATE	APPROVED
		REVISIONS		

SIGNATURES	DATE
DRAWN	
CHECKED	
ENGINEER	
ISSUED	ISSUED/CE
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APPROVED	
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