



SPECIFICATION

SPECIFICATION FOR SS FORGING

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
AUTHOR:							
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DCC RELEASE							

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ATTACHMENTS:

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**SPECIFICATION FOR SS FORGING****1.0 Scope**

This specification covers the minimum technical requirements for the materials, fabrication, inspection, testing, preparation for shipping, shipment and delivery of the flange forgings to be used for manufacturing ultra high vacuum boundary equipment.

All attachments are incorporated herein by reference and made a part of this specification.

Information contained in this specification and its attachments is proprietary in nature and shall be kept confidential. It shall be used only as required to respond to the specification requirements, and shall not be disclosed to any other party.

2.0 Schedule Of Deliveries

Flange rings shall be delivered as specified in Attachment "B".

3.0 Material Requirements

This material shall conform to the requirements of ASME Specification SA-182 Grade F Type 304L as given in the ASME Code 1992 Edition through 1994 Addenda with the additional supplementary requirements described in this specification.

4.0 Applicable Codes

ASME Boiler & Pressure Vessel Code, Section II, "Materials", 1992 Edition through 1994 Addenda.

ASTM A-700, "Standard Packages for Packaging, marking, and Loading Methods for Steel Products for Domestic Shipment".

Any apparent conflicts between the requirements given herein and the applicable ASME Specification shall be brought to the attention of THE BUYER for clarification.

5.0 Manufacturing Requirements**5.1 Thickness Tolerance: + .06 – 0 inches**

The forgings shall be rough machined to the thickness(es) specified in Attachment A.

5.2 ID/OD Tolerance: ID: -.06 +0, OD: + .06 -0

The forgings shall be furnished in the diameters as specified in Attachment A. The ID/OD are to be concentric within $\pm 1/32$ ".

**SPECIFICATION FOR SS FORGING****5.3 Flatness Tolerance:**

The machined forgings shall be flat to $\pm 1/32$ " across the diameter.

5.4 Surface Finish:

The surface finish of the forgings shall be 250/500 RMS on four sides.

5.5 Chemistry and Mechanical Properties:

The material shall meet the chemistry and mechanical requirements as specified in SA 182 Grade F, 304L material specification. The final content of sulfur is to be limited to 0.006%.

No grinding with abrasive wheels, cloths or stones is permitted. No iron carbon steel or other contaminants (such as grease, oil or hydrocarbons) to come in contact with the forging after the cleaning process. Machining fluids shall be water soluble and free of oil, sulfur, and chlorides.

5.7 Cleanliness:

The forgings are intended for use in a high vacuum application. Potential hydrocarbon contamination shall be eliminated.

6.0 Material Testing:

2" x 2" material coupons for each heat of material, must be supplied to The Seller for approval prior to release for shipment. The coupons are to be cut from the same heat number, lot and thickness of material to be supplied.

7.0 Rejections and Repair of Defects:

No weld splices or repair welding is permitted to the material and forgings.

8.0 Identification:

Identification of the material shall be maintained through all manufacturing processes.

If material identity is lost, the forging shall be re-qualified by making all tests that were required for the material or as indicated in this specification.

Marking the finished materials with marking fluids, die stamps, and/or electro-etching is not permitted. A vibratory tool with a minimum tip radius of .005" is acceptable for marking the outside only of the finished materials. All other marking methods must be approved by The Buyer prior to use.

9.0 Documentation

The Certified Material Test Report (CMTR) shall be provided to the Buyer with the shipment of the material, and available for review during inspection visits prior to shipment.

A record of the material thickness for each flange forging is required.



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10.0 Packaging, Storage and Shipping

- The material shall be cleaned and protected from contamination prior to shipment. The material shall be shipped covered in a closed trailer or tightly double wrapped with a waterproof covering if shipped on an open bed.

11.0 Non-Escort Privileges and Inspection Rights

The Seller shall provide Non-escort privileges for Buyer, Owner, Government and Owner representatives to all areas of the facilities where the work is being performed. This will include access to fabrication, assembly, cleaning and test areas for the purpose of monitoring activities.

The Buyer shall be informed 5 working days before the forging material is formed.



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ATTACHMENT "A"

Schedule of Forgings Required

Flange rings are required as follows:

<u>Part No.</u>	<u>I.D. x O.D. x Thk</u> <u>(Dimensions in Inches)</u>	<u>Qty.</u>	<u>FOR FLANGE</u>	<u>NOTES</u>
V049M133-1	84.0 x 92.25 x 1.63		D961105- v1	
V049M135-1	60.0 x 68.5 x 1.63		D961111-v1	
V049M136-1	83.75 x 92.25 x 1.38		D09002724-v1	
V049M243-1	60.0 x 68.5 x 1.25		D970409-v1	
V049M244-1	44.0 x 52.25 x 1.5		D0900953-v1	
V049M245-1	44.0 x 52.25 x 1.25		D0900963-v1	
V049M246-1	72.00 x 80.25 x 1.63		D961104-v1	
V049M251-1	44.9 x 80.3 x 1.25		D0900954-v1	
V049M257-1	44.9 x 68.5 x 1.25		D0900961-v1	