



Specification No. 203-HJT-9001 R0

Specification for the Support Structure for the MERIT Mercury-Jet Target Experiment

February 6, 2006

**SPECIFICATION FOR THE SUPPORT STRUCTURE FOR THE
HIGH POWER MERCURY-JET TARGET EXPERIMENT**

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1.0 Scope

This procurement specification is issued on behalf of Oak Ridge National Laboratory (ORNL), hereafter referred to as the Company. It is a “build-to-print” procurement and contains the requirements for the fabrication and assembly of a support structure consisting of

- 1) Common Base Assembly,
- 2) Cart Assembly,
- 3) Magnet End Support, and
- 4) Target Transporter Assembly.

These assemblies will be used to transport, and support the Mercury Intense Target (MERIT) system for tests that will be performed at ORNL, MIT’s Plasma Science and Fusion Center, and CERN in Switzerland.

Acceptance tests at the Seller’s site shall consist of checking certain critical dimensions, operating components designed to slide and provide positional adjustment, and operation of the hydraulic jacks used for height adjustment of the common base assembly. Upon completion of the acceptance tests, the equipment shall be delivered to Oak Ridge National Laboratory (ORNL) in Oak Ridge, TN.

It is pointed out that although this support equipment is for a mercury-based target experiment, the Seller will not deal with nor handle mercury in any way, and the mercury delivery system and the solenoid shown on sheets 1 and 2 of drawing 230-HJT-0001 are not part of this procurement; they are shown for reference only.

Under the provisions of this subcontract the Seller shall provide the following:

1. Common Base Assembly (Drawing Package 230-HJT-0100)

- Fully assembled components shown in the drawing package,
- Two (2) hydraulic hand pump/cylinder assemblies (McMaster-Carr #2897T24) – not shown on the drawings, and two (2) hydraulic cylinders (McMaster-Carr #2990T18) – shown on the drawings,
- Two (2) tee couplings – not shown,
- Four (4) five-ft. lengths of hydraulic hose and threaded couplings – not shown.

A six-ft. hose length that is part of the McMaster-Carr #2897T24 shall be attached to the stem of a tee, and two cylinders shall be attached to the tee union with the 5-ft. hoses so that one pump operates the pair of cylinders. (Note: the hoses and tee unions are not shown on the drawings.)

2. Cart Assembly (Drawing Package 230-HJT-0300)

- Fully assembled components shown in the drawing package.

3. Magnet End Support (Drawing Package 230-HJT-0400)

- Fully assembled components shown in the drawing package.

4. Target Transporter Assembly (Drawing Package 230-HJT-0200)

- Fully assembled components shown in the drawing package.

The attachment to this specification contains the drawings referenced above. The drawings, in addition to specifying dimensions, specify component materials, commercially available procurements, and field notes that refer to welding and inspections, and material certifications.

Since Support Structures 1, 2, and 3 listed above will be used during MERIT testing in high magnetic fields, and item 4 above may be stored in the vicinity of high magnetic fields, all materials are to be non-magnetic. Any deviation from the materials listed in the drawings must be approved by the Company.

2.0 Applicable Codes and Standards

- American Welding Society D.1 – standard practices

3.0 Inspection and Testing

As part of the Company's quality assurance program, the Company shall have the right to inspect the Seller's facility or any sub-tier Seller facility that the Company determines necessary to ensure that quality objectives are met. Source surveillance by the Company representative shall in no way relieve the Seller of the responsibility to furnish acceptable items.

3.1 Acceptance Testing

The Company shall have the right to witness final functional testing and inspection of the equipment at the Seller's site. Such testing shall be specified by the Seller to ensure full compliance of the equipment with the requirements of this specification. The requirement for witnessed-tests and inspections are at the Company's discretion upon notification by the Seller that the work has been completed. Acceptance tests shall take place at the Seller's site using the actual components, equipment, and materials that will be delivered to the Company.

- Final acceptance tests of the support structure assemblies shall include verifying critical component dimensions, operability of the sliding surfaces, and operability of the hydraulic lift cylinders.

3.2 Seller's Responsibilities

The Seller shall notify the Company ten (10) working days prior to the start of tests and inspections that are designated above. The Company at its discretion shall have representatives witness the performance tests. In addition, the Seller shall supply the Company with material certifications as specified on certain drawings in the attached drawing package.

4.0 Quality Assurance

4.1 Non-Conforming Items

The Company expects to receive equipment items, components, materials, and documentation that conform to all codes, standards, specifications, and procedures in the Agreement. The Seller may use its own nonconformance program to identify, report, and recommend disposition of all non-conforming items, but disposition that would leave any remaining nonconformity must be submitted to the Company for approval. A nonconformity request should identify the affected item(s) by name and serial number (if applicable), citing the drawing/specification number and revision number containing the specific requirement that has not been met. The Seller or the Seller's supplier may attach a description of the cause, and a corrective action plan and schedule if pertinent.

Note: The issuance and acceptance of such a request does not limit or affect the warranty provision of the Agreement. Such a request shall not establish a precedent or obligation to accept existing or future items not conforming to all provisions of the Agreement.

4.2 Seller's Requested Deviations

The Seller may propose deviations from the specifications, drawings, or other technical requirements of this procurement. Where time is a consideration, the Seller may communicate the proposed deviations or changes directly to the Company's principal engineer or technical lead with a copy to the Company's buyer. The engineer or technical lead will evaluate the technical aspects and recommend to the buyer, who will communicate acceptance or disapproval to the Seller. The request should identify the affected items, drawing/specification number and revision number, a description of the proposed deviation, and the justification for it.

4.3 As-Built Drawings

The Seller shall note any changes to the drawings due to errors or missing information, or changes to the components due to Company approved deviations, and provide the Company with a copy of the marked-up drawings.

5.0 Schedule

The support structure fabrications and acceptance testing shall be completed 12 weeks after subcontract award. Delivery to ORNL shall take place immediately thereafter.

6.0 Packing, Shipping and Handling

The support structure assemblies shall be packed for truck shipping, and shipped via dedicated-truck transport.

6.1 Equipment Identification

Each major assembly or component shall be tagged indicating the Seller's name and address, the Seller's equipment identification information, date of manufacture, and Company information as shown below:

Seller name and address
Seller equipment identification number
Date of manufacture

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Oak Ridge, TN 37831
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