

MIL-P-50936A (PA)

28 August 1975

SUPERSEDING

MIL-P-50936 (MU)

17 April 1972

## MILITARY SPECIFICATION

PROJECTILE, 155MM, HE: M483A1

METALLIC HARDWARE FOR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

### 1. SCOPE

1.1 This specification covers the metallic hardware for use with Projectile, 155MM, HE: M483A1.

### 2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein,

#### SPECIFICATIONS

##### MILITARY

- MIL-A-48078 - Ammunition Standard Quality Assurance Provisions, General Specification for
- MIL-A-2550 - Ammunition and Special Weapons, General Specification for

#### STANDARDS

##### MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-1169 - Packaging, Packing and Marking for Shipment of Inert Ammunition Components

FSC: 1320

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DRAWINGS

PICATINNY ARSENAL

A-9215202 - Hardware, Metallic

(Copies of specifications, standards, drawings and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the Contracting Officer.)

3. REQUIREMENTS

3.1 Material.--Materials shall be in accordance with the applicable drawings and specifications.

3.2 Parts.--The parts shall comply with all requirements specified on Drawing (Dwg) A-9215202, all associated drawings, and with all requirements specified in applicable specifications.

3.3 Workmanship.--All parts shall be fabricated and finished in a thorough, workmanlike manner. They shall be free of burrs, chips, sharp edges, cracks, unblended radii, surface defects, dirt, grease, rust, corrosion products, and other foreign matter. The cleaning method used shall not be injurious to any parts, nor shall the parts be contaminated by the cleaning agents. All required marking shall be neat and sharply defined.

3.4 First Article Testing.--This specification contains technical provisions for first article inspection. Requirements for submission of first article samples by the contractor shall be as specified in the contract.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection and Standard Quality Assurance Provisions.--Unless otherwise specified herein or in the contract, the provisions of MIL-A-48078 shall apply and are hereby made a part of this detail specification.

4.2 Classification of Inspections.--The following types of inspection shall be performed on this item:

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- a. First Article Inspection
- b. Quality Conformance Inspection

#### 4.3 First Article Inspection

4.3.1 Submission.--The contractor shall submit a first article sample as designated by the Contracting Officer for evaluation in accordance with provisions of 4.3.2. The first article sample shall consist of the following items in sample quantities as indicated.

<u>PART DESCRIPTION</u>	<u>DRAWINGS</u>	<u>QUANTITY</u>
Cup, Expulsion Charge	C-9272023	25
Spline	C-9216848-1	25
Spline	C-9216848-2	25
Plate, forward	C-9216854	25

4.3.2 Inspections to be performed.--See MIL-A-48078 and Table 1 specified herein.

4.3.3 Rejection.--See MIL-A-48078.

TABLE I - FIRST ARTICLE INSPECTION  
CLASSIFICATION OF DEFECTS & TESTS

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PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
	Metallic Hardware				SEE BELOW
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE / INSPECTION METHOD
	<u>Cup, Expulsion Charge</u> (Dwg. C-9272023) Examination for Defects	25	--	3.2	4.4.2.1
	<u>Spline</u> (Dwg. C-9216848-1) Examination for Defects	25	--	3.2	4.4.2.2
	<u>Spline</u> (Dwg. C-9216848-2) Examination for Defects	25	--	3.2	4.4.2.2
	<u>Plate, forward</u> (Dwg. C-9216854) Examination for Defects	25	--	3.2	4.4.2.3
NOTES:					

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4.4 Quality Conformance Inspection

4.4.1 Inspection Lot Formation.-Inspection lots shall comply with the lot formation provisions of MIL-A-48078.

4.4.2 Examination.-See MIL-A-48078.

a. Sampling Plans.-Unless otherwise specified in the Classification of Defects and Test tables, sampling plans for major and minor defects shall be in accordance with MIL-STD-105, Inspection Level II.

QUALITY CONFORMANCE INSPECTION  
**CLASSIFICATION OF DEFECTS & TESTS**

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PARAGRAPH	TITLE		SHEET 1 OF 2		DRAWING NUMBER
4.4.2.1	Cup, Expulsion Charge				C-9272023
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE / INSPECTION METHOD
<u>Critical</u>	None defined				
<u>Major B</u>					
131	Largest outside flange diameter		0.40%	3.2	Gage
132	Total Length		0.40%	3.2	Gage
133	Flange Thickness		0.40%	3.2	Gage
134	Perpendicularity, as indicated		0.40%	3.2	Gage
135	Parallelism, as indicated		0.40%	3.2	Gage
136	Second largest outside diameter, as noted		0.40%	3.2	Gage
137	Concentricity of second largest diameter, as noted		0.40%	3.2	Gage
138	Inside diameter to indicated depth		0.40%	3.2	Gage
139	Inside diameter beyond indicated depth, min.		0.40%	3.2	Gage
140	Wall thickness of cylinder, beyond noted dimension		0.40%	3.2	Gage
141	Thickness at closed end		0.40%	3.2	Gage
142	Fillet radius at intersection of second largest outside diameter with flange, max		0.40%	3.2	Gage
143	Chamfer at underside of flange		0.40%	3.2	Gage
144	Burrs on any corner at open end face		0.40%	3.2	Visual
145	Cup dented or deformed		0.40%	3.2	Visual
<u>Minor</u>					
201	Chamfer at face of open end with largest outside diameter, max.		0.65%	3.2	Gage
NOTES:					

QUALITY CONFORMANCE INSPECTION  
**CLASSIFICATION OF DEFECTS & TESTS**

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<b>PARAGRAPH</b>	<b>TITLE</b>		<b>SHEET 2 OF 2</b>		<b>DRAWING NUMBER</b>
4.4.2.1	Cup, Expulsion Charge				C-9272023
					<b>NEXT HIGHER ASSEMBLY</b>
<b>CATEGORY</b>	<b>EXAMINATION OR TEST</b>	<b>NO. OF SAMPLE UNITS</b>	<b>AQL OR 100%</b>	<b>REQUIREMENT PARAGRAPH</b>	<b>PARAGRAPH REFERENCE /INSPECTION METHOD</b>
Minor (cont) 202	Evidence of poor workmanship, except as noted		0.65%	3.3	Visual
<b>NOTES:</b> SEE 4.5.1 for all AQL's except 202.					

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QUALITY CONFORMANCE INSPECTION  
CLASSIFICATION OF DEFECTS & TESTS

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PARAGRAPH	TITLE	SHEET 1 OF 2			DRAWING NUMBER C-9216848-1 C-9216848-2
4.4.2.2	Spline				NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
<u>Critical</u>	None defined				
<u>Major B</u>					
131	Width of Projection on largest radius surface		0.40%	3.2	Gage
132	Total width, max.		0.40%	3.2	Gage
133	Distance to smaller basic width on large radius surface		0.40%	3.2	Gage
134	Distance to larger basic width on large radius surface		0.40%	3.2	Gage
135	Symmetry of larger basic width on large radius surface with projection.		0.40%	3.2	Gage
136	Distance to smaller basic width between small radii surfaces		0.40%	3.2	Gage
137	Distance to larger basic width between small radii surfaces		0.40%	3.2	Gage
138	Symmetry of large basic width between small radii surfaces		0.40%	3.2	Gage
139	Symmetry of smaller basic width between small radii surfaces		0.40%	3.2	Gage
140	Total height, max.		0.40%	3.2	Gage
141	Fillet radius at intersection of projection with large radius surface, max. (2)		0.40%	3.2	Gage
NOTES:					



QUALITY CONFORMANCE INSPECTION  
CLASSIFICATION OF DEFECTS & TESTS

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PARAGRAPH	TITLE		SHEET 2 OF 2		DRAWING NUMBER C-9216848-1 C-9216848-2 NEXT HIGHER ASSEMBLY	
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD	
4.4.2.2	Spline					
Major B (cont) 142	Corner radius along entire length formed by intersection of side and width of projection, max. (2) (Reference: MIL-A- 2550) Length, max.		0.40%	3.2	Gage	
143			0.40%	3.2	Gage	
Minor 201			0.65%	3.2	Gage	
202			0.65%	3.3	Visual	
NOTES: SEE 4.5.2 for all AQL's except 143 and 202.						

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QUALITY CONFORMANCE INSPECTION  
CLASSIFICATION OF DEFECTS & TESTS

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PARAGRAPH	TITLE		SHEET 1 of 1		DRAWING NUMBER C-9216854
4.4.2.3	Plate, forward				NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
<u>Critical</u>	None defined				
<u>Major B</u>					
131	Largest diameter		0.40%	3.2	Gage
132	Second largest diameter		0.40%	3.2	Gage
133	Concentricity of second largest diameter		0.40%	3.2	Gage
134	Smallest diameter		0.40%	3.2	Gage
135	Concentricity of smallest diameter		0.40%	3.2	Gage
136	Width of groove		0.40%	3.2	Gage
137	Thickness, excluding projection		0.40%	3.2	Gage
138	Large corner radius at edge of plain face		0.40%	3.2	Gage
<u>Minor</u>					
201	Thickness, including projection		0.65%	3.2	Gage
202	Distance from plain face to edge of groove		0.65%	3.2	Gage
203	Radius, max. at bottom of groove (2 places)		0.65%	3.2	Gage
204	Evidence of poor workmanship		0.65%	3.3	Visual
NOTES:					

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CLASSIFICATION OF DEFECTS & TESTS

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PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
4.4.2.4	Container, Sealed				SEE SECTION 5 NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
<u>Critical</u>	None defined				
<u>Major B</u>					
131	Contents of container loose		0.40%	3.2	Visual-Manual
132	Container damaged		0.40%	3.2	Visual
133	Container incorrect according to size and weight		0.40%	3.2	Visual
134	Closing of container, incorrect or in- complete		0.40%	3.2	Visual
135	Marking data missing, illegible		0.40%	3.2	Visual
<u>Minor</u>					
201	Size of marking letters incorrect		0.65%	3.2	Visual
NOTES:					

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#### 4.4.3 Testing.-

This section is not applicable to this specification.

4.4.4 Inspection Equipment.-The inspection equipment required to perform the examinations and tests prescribed herein is described in the 'Paragraph Reference/Inspection Method' column in the Tables starting with paragraph 4.4.2.1. The contractor shall submit for approval inspection equipment designs in accordance with the terms of the contract. See Section 6 of MIL-A-48078 and 6.3 herein.

#### 4.5 Test Methods and Procedures.-

4.5.1 Dimensional control of stamped parts.-In place of the normal sampling associated with the Classification of Defects, and with the approval of the Contracting Officer, a sample of at least ten (10) parts may be dimensionally inspected to qualify the tool used in the stamping process for use in production. In addition, a random sample of five (5) parts shall be selected from the last portion of each hour's production for dimensional inspection as a control of the tool during production.

If any defective parts are found during qualification of the tool, the tool producing the defective part shall not be used in production.

If any defective parts are found when inspection is performed for control of the tool, the tool producing the defective part shall be removed from production. Further, that portion of production since the last tool control check shall be returned to the contractor for corrective action.

All tools removed from production because of some fault, may, after reworking, be returned to production providing they pass the qualification test above. The contractor may request a change of inspection frequency providing he presents objective evidence to the Contracting Officer to substantiate the request.

4.5.2 Dimensional control of cast parts.-In place of the normal sampling associated with the Classification of Defects, and with the approval of the Contracting Officer, a sample of at least three (3) parts (as cast) from each cavity may be dimensionally inspected to qualify a new or reworked cavity for use in production or as a control of the cavity during production. Inspection for control of each cavity during production shall be performed on the above quantities from each cavity after production of 5000 parts. Individual cavity identification must be provided.

If any defective parts are found during qualification of the cavity, the cavity producing the defective part shall not

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be used in production. If any defective parts are found when inspection is performed for control of the cavity, the cavity producing the defective part shall be removed from production. Further, that portion of production since the last control check shall be returned to the contractor for corrective action.

All cavities formerly removed from production because of some fault, may, after reworking, be returned to production providing they pass the qualification test specified above. The contractor may request a change of inspection frequency providing he presents objective evidence to substantiate the request to the Contracting Officer.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation and Packaging (Level C).-The metallic hardware shall be preserved and packaged in accordance with MIL-STD-1169.

5.2 Packing (Level C).-The metallic hardware, preserved and packaged as specified in 5.1, shall be packed for shipment in accordance with MIL-STD-1169. Each pack shall contain only one part number.

5.3 Marking.-Marking of the carton shall comply with MIL-STD-1169.

5.4 Shipping.-When components from more than one lot are shipped as a carload, each lot shall be kept separate, and the division between lots clearly indicated to prevent mixing of the lots in transit.

## 6. NOTES

6.1 Intended Use.-The components covered by this specification are intended for use in the Projectile, 155MM, HE: M483A1.

6.2 Ordering Data.-See MIL-A-48078.

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6.3 Submission of Inspection Equipment Designs for Approval.-  
See MIL-A-48078. Submit equipment designs, as required, to Commander,  
Picatinny Arsenal, Attn: SARPA-QA-T, Dover, New Jersey 07801.

6.4 Submission of results of Contractor-Conducted Examinations and Tests.-Data shall be submitted in accordance with data  
item DI-R-1721 on the DD Form 1423 for the contract.

Custodian:  
Army-PA

Preparing Activity:  
Army-PA

Project Number: 1320-A290