



Quality Assurance Plan



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GUN CARRIAGE FACTORY
A GOVT. OF INDIA ENTERPRISE
MINISTRY OF DEFENCE
(A UNIT OF ADVANCED WEAPONS AND EQUIPMENT INDIA LTD)

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A Summary of Changes section appears at the end of this specification

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Quality Assurance Plan



1. Scope: -

This quality assurance plan is a general guide to meet the quality requirements of product. It consists of applicable procedures (describing production processes, inspection & testing instructions), applicable workmanship standards, the measurement tolerances applicable, the description of material standards and so forth. It also mentions the list of documents, test certificates that will be submitted by firm to GCF along with finished component.

2. Nomenclature and drgs. No.: -

BEAM TO DRG NO. [2028682](#)

3. Material & Heat Treatment Condition: -

EN 1706-1998, DESIGNATION EN- AC 42000-5-T6.

The material is to be Solution Heat Treated and fully Artificially aged.

4. Acceptance criteria: -

SL. NO	TEST/CHECK	PARAMETER	COMPOSITION (%)
1	Chemical composition	Carbon	0.55
		Titanium	0.25
		Copper	0.05
		Magnesium	0.20-0.65
		Silicon	6.5 TO 7.5
		Manganese	0.10
		Zinc	0.07
		Others	0.10
		Aluminum	Remainder
2	Mechanical properties	Yield Stress	180 Mpa
		Tensile Strength	220 Mpa
		Elongation	1 %
		Hardness	75 HBW

5. Visual Inspection: -

S.NO.	DETAILS OF FEATURE	ACCEPTANCE CRITERIA
A	Cracks	Not Applicable
B	Chattering Marks on Thread	If applicable, Not allowed on thread

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C	Tool Marks and Scratches	Not allowed
D	Surface treatment	Zinc Phosphating as per Y3 - 11
E	Painting	As per Y4 – 26

6. Dimensional Inspection :

All dimensions (critical, major & minor in nature) & geometrical features of drawings are to be covered in check sheet and should be duly inspected by concerned quality control section. Components, having dimensions as per drawing, should only be accepted by inspectorate. No deviation in dimension or in geometrical feature is permitted. Latest and calibrated measuring instrument with high accuracy as possible to be used for measurement. If computerized measuring machine like coordinate measuring machine etc are used for measurement their details along with tolerance and least count to be provided along with the report or mentioned in report.

7. Tolerance :-

- Cast Radius is 3 mm.
- Casting Tolerance According to SS 722 GTA16, unless otherwise stated along with specific dimension.
- Angle of Clearance is 2 degree.

8. List of Documents to be submitted by the firm along with the component:

(To be submitted by firm along with finished component during factory end inspection)
Pre inspection report of material/component/item as per specification and standard mentioned in drawing.

- Certificate of conformity by supplier if applicable.
- Dimensional acceptance check sheet.
- Heat treatment NABL Accredited/Gov. approved report with specified hardness as mentioned in standard along with graph, representing HT cycle, process and condition if any.
- NABL / government approved NDT certificated report to be attached herewith, if the same test is mentioned.
- Surface treatment report, if any.
- Surface Coating conformation certificates for all sub-assembly, if any.
- Fabrication report along with SR report, if any.
- Life testing/Reliability report for items like bearings etc. as applicable for items which are specially designed or developed for GCF factory.
- Guarantee / Warranty Certificate.

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9. Important Note:

- (1) Hardware items of best trade Quality to be used.
- (2) Final authority of acceptance is based on the Fit for Trial (FFT) report of item/material/component.
- (2) Use rust preventative after integration, location specified as per drawings specification; if applicable.
- (3) If any query arises pertaining to dimensions, standards (viz. mechanical properties, chemical composition, Heat treatment etc.) or any other aspects which are mentioned in QAP but the same is mismatched with actual drawings/standards, then the firm should follow the drawing.
- (4) Firm may Supply Advance Sample to GCF Jabalpur before commencement of bulk production.

10. Enclosed: Drawing of the components.

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SUMMARY OF CHANGES

SL No	Document	Rev	Change
1	BEAM TO DRG NO. 2028682	A	Initial Release

GCF Released

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