


STOP ASSEMBLY (5577409)

<u>SL.NO</u>	<u>PART NO.</u>	<u>ASSY/COMPONENT</u>	<u>NOMENCLATURE</u>	<u>PAGE</u>
1	5577408	COMPONENT	STOP, CARTRIDGE, REAR, RIGHT HAND	255
2	6008975	COMPONENT	PAWL, ALIGNING, CARTRIDGE	256
3	5013611	COMPONENT	PLUNGER, CARTRIDGE ALIGNING PAWL	257
4	5013612	COMPONENT	PIN, STRAIGHT, HEADLESS	258
5	5013613	COMPONENT	SPRING, HELICAL COMPRESSION	259

QUALITY ASSURANCE PLAN (M2HB GUN IM PHASE)									Issue No : 01 Rev No: 00
									Date of Issue / / 2021
Drg . No.	5577409								OFT/QAP/M2HB/5577409
Nomenclature	STOP ASSEMBLY CARTRIDGE , OOW50BMG. REQD FOR HB ASSEMBLY (7265636)								
Material	AS PER MATERIAL SPECIFICATION IN THE ASSEMBLY PARTLIST.								
Component Nomenclature/ operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection by GM/OFT (Review/Witness) (*)	Remarks
Stop Assembly Cartridge (Raw material)	General appearance	Non Critical	Visual	100%	AS PER MATERIAL SPECIFICATION IN THE ASSEMBLY PARTLIST.		Firm Inspection report	R	Sample will be drawn and sealed by Inspection Agency
	Chemical properties	Non Critical	Chemical Lab analysis	100%			Test report from NABL lab	R	
	Mechanical properties	Non Critical	Mechanical Lab analysis	100%			Test report from NABL lab	R	
Heat Treatment	Mechanical properties	Non Critical	Mechanical Lab analysis	100%	As per Drawing 5577409 & Components		Test report from NABL lab	R	Firm will be undertaking 100 % Checks and Pre inspection Report for the same be submitted
Protective Finish	General appearance	Non Critical	Visual and Dimensional Checks	100%	As per Drawing 5577409 & Components		Test report from NABL lab	R	
In process	Dimensions Specified in the Inspection report of the component	Non Critical	Dimensional measurement	100%	As per Drawing 5577409 & Components		Firm Inspection report	R	
Final Inspection	General appearance	Non Critical	Visual and Dimensional Checks	100%	As per Drawing 5577409 & Components		Firm Inspection report	W	

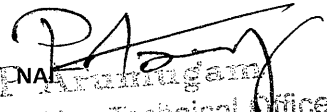
*Note : As per the MoU No: OFT / SRCG / M2HBGun / MoU /01 Dt: 20.09.2021, Clause 3(c) sub clause (i) NAI, Trichy may do Surveillance audit of the reports, if applicable.
(ii) In case of hard ware items, NAI, Trichy will review the reports, if required.


 NAI Arumugam
 Civilian Technical Officer (Mech)
 for Principal Inspector Of Naval Armament
 Tiruchirappalli.


 GODVENDIRANE, I.O.F.S.
 OFT ASST WORKS MANAGER
 GOVT. OF INDIA, MIN. OF DEFENCE
 ORDNANCE FACTORY
 TIRUCHIRAPPALLI-TAMILNADU

QUALITY ASSURANCE PLAN (M2HB GUN IM PHASE)								Issue No : 01 Rev No: 00	
								Date of Issue / / 2021	
Drg . No.	5577408							OFT/QAP/M2HB/5577408	
Nomenclature	STOP, CARTRIDGE, REAR, RIGHT HAND ,OOW50BMG. REQD FOR STOP ASSEMBLY CARTRIDGE (5577409)								
Material	WROUGHT STEEL, ASTM A322 OR A331, 4140, 4340. PRECISION CASTING: STEEL, MIL-S-22141, IC 4140. TENSILE TEST SHALL NOT APPLY. INSPECTION SHALL BE IN ACCORDANCE WITH CLASS 2 GRADE A&B OF MIL-STD-2175.								
Component Nomenclature/ operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection by NAI / GM/OFT (Review/Witness) (*)	Remarks
Stop, Cartridge, Rear, Right Hand. (Raw material)	General appearance	Non Critical	Visual	100%	WROUGHT STEEL, ASTM A322 OR A331, 4140, 4340. PRECISION CASTING: STEEL, MIL-S-22141, IC 4140. TENSILE TEST SHALL NOT APPLY. INSPECTION SHALL BE IN ACCORDANCE WITH CLASS 2 GRADE A&B OF MIL-STD-2175.		Firm Inspection report	R	Sample will be drawn and sealed by Inspection Agency
	Chemical properties	Non Critical	Chemical Lab analysis	100%			Test report from NABL lab	R	
	Mechanical properties	Non Critical	Mechanical Lab analysis	100%			Test report from NABL lab	R	
Heat Treatment	Mechanical properties	Non Critical	Mechanical Lab analysis	100%	As per Drawing 5577408	HEAT AT 838°C TO 860°C. OIL QUENCH. TEMPER ON HOUR MINIMUM TO HARDNESS SPECIFIED RH A72-75	Test report from NABL lab	R	Firm will be undertaking 100 % Checks and Pre inspection Report for the same be submitted
Protective Finish	General appearance	Non Critical	Visual and Dimensional Checks	100%	MIL-STD-171	Finish: 5.3.1.2 (or) 5.3.2.2	Test report from NABL lab	R	
In process -As per Drawing 5577408	Dimensions Specified in the Inspection report of the component	Non Critical	Dimensional measurement	100%	As per Drawing 5577408		Firm Inspection report	R	
Final Inspection	General appearance	Non Critical	Visual and Dimensional Checks	100%	As per Drawing 5577408		Firm Inspection report	W	

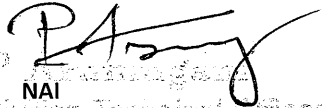
*Note : As per the MoU No: OFT / SRCG / M2HBGun / MoU /01 Dt: 20.09.2021, Clause 3(c) sub clause (i) NAI, Trichy may do Surveillance audit of the reports, if applicable.
(ii) In case of hard ware items, NAI, Trichy will review the reports, if required.

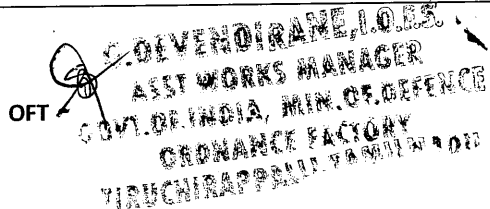

P. Arumugam
Civilian Technical Officer (Mech)
for Principal Inspector Of Naval Armament
Trichirappalli.

OFT
A. DEVIKUMAR
ASST. WORKS MANAGER
COPT. DE. INDIA, MIN. OF DEFENSE
ORDNANCE FACILITY
TRICHIRAPPALLI

QUALITY ASSURANCE PLAN (M2HB GUN IM PHASE)									Issue No : 01 Rev No: 00
									Date of Issue / / 2021
Drg . No.	6008975								OFT/QAP/M2HB/6008975
Nomenclature	PAWL, ALIGNING, CARTRIDGE, OOW50BMG REQD. FOR STOP ASSEMBLY CARTRIDGE (5577409)								
Material	WROUGHT STEEL, ASTM A322 OR A331, 6150, 5160 PRECISION CASTING, STEEL, MIL-S-22141; IC 6150. TENSILE TEST SHALL NOT APPLY. CASTING SHALL BE IN ACCORDANCE WITH CLASS 2, GRADE A & B (AS SHOWN) OF MIL-STD-2175								
Component Nomenclature/ operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection by NAI / GM/OFT (Review/Witness) (*)	Remarks
Pawl, Aligning, Cartridge (Raw material)	General appearance	Non Critical	Visual	100%	WROUGHT STEEL, ASTM A322 OR A331, 6150, 5160 PRECISION CASTING, STEEL, MIL-S-22141; IC 6150. TENSILE TEST SHALL NOT APPLY. CASTING SHALL BE IN ACCORDANCE WITH CLASS 2, GRADE A & B (AS SHOWN) OF MIL-STD-2175		Firm Inspection report	R	Sample will be drawn and sealed by Inspection Agency
	Chemical properties	Non Critical	Chemical Lab analysis	100%			Test report from NABL lab	R	
	Mechanical properties	Non Critical	Mechanical Lab analysis	100%			Test report from NABL lab	R	
Heat Treatment	Mechanical properties	Non Critical	Mechanical Lab analysis	100%	As per Drawing 6008975	HEAT AT 843°C TO 871°C. OIL QUENCH. TEMPER FOR 1 HOUR MINIMUM TO HARDNESS SPECIFIED (RH A76.5- 81)	Test report from NABL lab	R	Firm will be undertaking 100 % Checks and Pre inspection Report for the same be submitted
Protective Finish	General appearance	Non Critical	Visual and Dimensional Checks	100%	MIL-STD-171	Finish 5.3.1.2 (or) 5.3.2.2	Test report from NABL lab	R	
In process -As per Drawing 6008975	Dimensions Specified in the Inspection report of the component	Non Critical	Dimensional measurement	100%	As per Drawing 6008975		Firm Inspection report	R	
Final Inspection	General appearance	Non Critical	Visual and Dimensional Checks	100%	As per Drawing 6008975		Firm Inspection report	W	

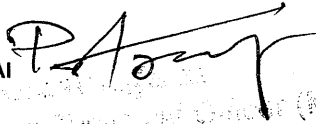
*Note : As per the MoU No: OFT / SRCG / M2HBGun / MoU /01 Dt: 20.09.2021, Clause 3(c) sub clause (i) NAI, Trichy may do Surveillance audit of the reports, if applicable.
(ii) In case of hard ware items, NAI, Trichy will review the reports, if required.


 P. Arany
 NAI
 Civilian Technical Officer (Mech)
 or Principal Inspector Of Naval Armament
 Tiruchirappalli.


 C. GOVINDARANE, I.O.E.S.
 ASST WORKS MANAGER
 GOVT. OF INDIA, MIN. OF DEFENCE
 ORDNANCE FACTORY
 TIRUCHIRAPPALLI

QUALITY ASSURANCE PLAN (M2HB GUN IM PHASE)									Issue No : 01 Rev No: 00
									Date of Issue / / 2021
Drg . No.	5013611								OFT/QAP/M2HB/5013611
Nomenclature	PLUNGER, CARTRIDGE ALIGNING PAWL, OOW50BMG REQD. FOR STOP ASSEMBLY CARTRIDGE (5577409)								
Material	TOOL STEEL, ASTM A681: TYPE S1 THRU S7 OR TYPE O1 THRU 07.								
Component Nomenclature/ operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection by GM/OFT (Review/Witness) (*)	Remarks
Plunger, Cartridge Aligning Pawl (Raw material)	General appearance	Non Critical	Visual	100%	TOOL STEEL, ASTM A681: TYPE S1 THRU S7 OR TYPE O1 THRU 07.		Firm Inspection report	R	Sample will be drawn and sealed by Inspection Agency
	Chemical properties	Non Critical	Chemical Lab analysis	100%			Test report from NABL lab	R	
	Mechanical properties	Non Critical	Mechanical Lab analysis	100%			Test report from NABL lab	R	
Heat Treatment	Mechanical properties	Non Critical	Mechanical Lab analysis	100%		HEAT AT 871°C. OIL QUENCH. TEMPER 1 HOUR MINIMUM TO HARDNESS SPECIFIED (RH C55-60)	Test report from NABL lab	R	Firm will be undertaking 100 % Checks and Pre inspection Report for the same be submitted
Protective Finish	General appearance	Non Critical	Visual and Dimensional Checks	100%	MIL-STD-171	Finish 5.3.1.2 (or) 5.3.2.2	Test report from NABL lab	R	
In process -As per Drawing 5013611	Dimensions Specified in the Inspection report of the component	Non Critical	Dimensional measurement	100%	As per Drawing 5013611		Firm Inspection report	R	
Final Inspection	General appearance	Non Critical	Visual and Dimensional Checks	100%	As per Drawing 5013611		Firm Inspection report	W	


*Note : As per the MoU No: OFT / SRCG / M2HBGun / MoU /01 Dt: 20.09.2021, Clause 3(c) sub clause (i) NAI, Trichy may do Surveillance audit of the reports, if applicable.
(ii) In case of hard ware items, NAI, Trichy will review the reports, if required.

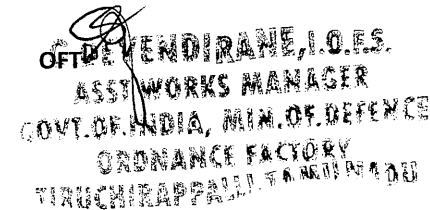
NAI

 Chief Executive Officer (NAI)
 For Periodic reports. Of Naval Armament
 Production.


G. DEVENDIRANE, I.O.F.S.
ASST WORKS MANAGER
GOVT. OF INDIA, MIN. OF DEFENCE
ORDNANCE FACTORY
TIRUCHIRAPPALLI, TAMILNADU


<p align="center">QUALITY ASSURANCE PLAN (M2HB GUN IM PHASE)</p>									<p>Issue No : 01 Rev No: 00</p>	
									<p>Date of Issue / / 2021</p>	
Drng . No.	5013612									OFT/QAP/M2HB/5013612
Nomenclature	PIN, STRAIGHT, HEADLESS, OOW50BMG REQD. FOR STOP ASSEMBLY CARTRIDGE (5577409)									
Material	STEEL, ASTM A576: 1095 OR STEEL, ASTM A686: CLASS W1-8 THRU 10, GRADE 'C'.									
Component Nomenclature/ operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection by GM/OFT (Review/Witness (*))	Remarks	
Pin, Straight, Headless (Raw material)	General appearance	Non Critical	Visual	100%		STEEL, ASTM A576: 1095 OR STEEL, ASTM A686: CLASS W1-8 THRU 10, GRADE 'C'.	Firm Inspection report	R	Sample will be drawn and sealed by Inspection Agency	
	Chemical properties	Non Critical	Chemical Lab analysis	100%			Test report from NABL lab	R		
	Mechanical properties	Non Critical	Mechanical Lab analysis	100%			Test report from NABL lab	R		
Heat Treatment	Mechanical properties	Non Critical	Mechanical Lab analysis	100%	As per Drawing 5013612	SPEC MIL-H-6875. QUENCH AND TEMPER 1 HOUR MINIMUM TO HARDNESS SPECIFIED (RH 15N 82- 86)	Test report from NABL lab	R	Firm will be undertaking 100 % Checks and Pre inspection Report for the same be submitted	
Protective Finish	General appearance	Non Critical	Visual and Dimensional Checks	100%	MIL-STD-171	Finish 5.3.1.2 (or) 5.3.2.2	Test report from NABL lab	R		
In process -As per Drawing 5013612	Dimensions Specified in the Inspection report of the component	Non Critical	Dimensional measurement	100%	As per Drawing 5013612		Firm Inspection report	R		
Final Inspection	General appearance	Non Critical	Visual and Dimensional Checks	100%	As per Drawing 5013612		Firm Inspection report	W		

***Note :** As per the MoU No: OFT / SRCG / M2HBGun / MoU /01 Dt: 20.09.2021, Clause 3(c) sub clause (i) NAI, Trichy may do Surveillance audit of the reports, if applicable.
(ii) In case of hard ware items, NAI, Trichy will review the reports, if required.


 NAI
 Director of Naval Armaments
 Trichirappalli.


 G. V. VENDORANE, I.O.E.S.
 ASST WORKS MANAGER
 GOVT. OF INDIA, MIN. OF DEFENCE
 ORDNANCE FACTORY
 TRICHI RAPPALLI TAMILNADU

QUALITY ASSURANCE PLAN (M2HB GUN IM PHASE)										Issue No : 01 Rev No: 00
										Date of Issue / / 2021
Drg . No.	5013613									OFT/QAP/M2HB/5013613
Nomenclature	SPRING, HELICAL COMPRESSION, OOW50BMG REQD. FOR STOP ASSEMBLY CARTRIDGE (5577409)									
Material	WIRE, MUSIC, STEEL ASTM A228									
Component Nomenclature/ operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection by NAI / GM/OFT (Review/Witness) (*)	Remarks	
Spring, Helical Compression. (Raw material)	General appearance	Non Critical	Visual	100%	WIRE, MUSIC, STEEL ASTM A228		Firm Inspection report	R	Sample will be drawn and sealed by Inspection Agency	
	Chemical properties	Non Critical	Chemical Lab analysis	100%			Test report from NABL lab	R		
	Mechanical properties	Non Critical	Mechanical Lab analysis	100%			Test report from NABL lab	R		
Heat Treatment	Mechanical properties	Non Critical	Mechanical Lab analysis	100%	STRESS RELIEVE AT 224°C ± 5°C .FOR 30 Min After Colling.		Test report from NABL lab	R	Firm will be undertaking 100 % Checks and Pre inspection Report for the same be submitted	
Protective Finish	General appearance	Non Critical	Visual and Dimensional Checks	100%	MIL-STD-171	Finish 3.3.1 With MIL-PRF-3150 Supplementary Oil Treatment.	Test report from NABL lab	R		
In process -As per Drawing 5013613	Dimensions Specified in the Inspection report of the component	Non Critical	Dimensional measurement	100%	As per Drawing 5013613		Firm Inspection report	R		
Load Test	Mechanical properties	Non Critical	Mechanical Lab analysis	100%	LOAD TEST SHALL APPLY AFTER SPRING HAS BEEN COMPRESSED SOLID FIVE(5) TIMES.		Firm Inspection report	R		
*Note : As per the MoU No: OFT / SRCG / M2HBGun / MoU /01 Dt: 20.09.2021, Clause 3(c) sub clause (i) NAI, Trichy may do Surveillance audit of the reports, if applicable. (ii) In case of hard ware items, NAI, Trichy will review the reports, if required.	General appearance	Non Critical	Visual and Dimensional Checks	100%	As per Drawing 5013613		Firm Inspection report	W		
<p>(* Note : As per the MoU No: OFT / SRCG / M2HBGun / MoU /01 Dt: 20.09.2021, Clause No. 3(b), Sub clause (i) is applicable for In-House manufacturing and inspection by GM/OFT. Sub clause (ii) is applicable for out sourced components. JRI will be done by NAI & OFT on sampling basis. For springs: (i) Trade : Raw material to finished product QA by NAI. (ii) In house : Dimension inspection and Load test on sampling basis by NAI.</p>										


NAI Arumugam
 Civilian Technical Officer (Mech)
 for Principal Inspector Of Naval Armament
 Tiruchirappalli.

G. DEVENDIRANE, I.O.E.S.
 OFT ASST WORKS MANAGER
 GOVT. OF INDIA, MIN. OF DEFENCE
 ORDNANCE FACTORY
 TIRUCHIRAPPALLI TAMILNADU

259