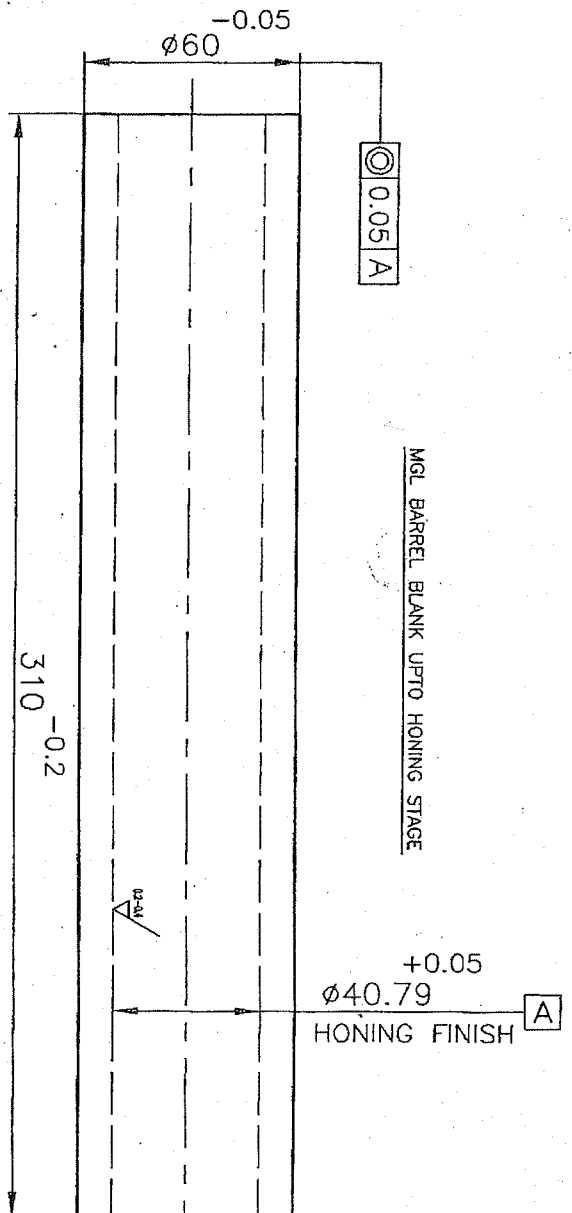


UN CONTROLLED COPY
 CERTIFIED CORRECT COPY OF APPROVED
 DRAWINGS AT THIS DATE
 25.05.2021
 DESIGN & DRAWING OFFICE,
 ORDNANCE FACTORY, TIRUCHIRAPPALLI-620 016.



MGL BARREL BLANK UPTO HONING STAGE

MATERIAL: ~~IS5517 -1993~~, GR:42Cr4Mo2 (OR)
 BS:970, PT:1, 1983, GR.709M40 (OR)
 708M40, WITH 'T' CONDITION.

ALT. MATERIAL: En19 (OR) En19A WITH 'T' CONDITION

HARDNESS: ~~269~~ 334 BHN, 37.42 HRC *

SURFACE FINISH: 0.2-0.4 MICRONS AFTER HONING

RESTRICTION OF S & P

S = 0.010 %
 P = 0.016 %

DIMENSIONS ARE IN mm.

UNTOLERATED DIMNS. AS PER IS : 2102 (MED)
 SHARP CORNERS SHOULD BE BLUNT TO R 0.5

Handwritten: 08/01/2020
 HOS/PS-2
 02/01/2020

AMENDMENTS & DATE		SIG. & DATE		APPROVED ON: 06/01/2020	
PS-2/MGL/2020-21 DL24.02.2021		Amended as per Letter No.			
PART NO.	DESCRIPTIONS	SIGNATURE & DATE	NO OFF	MATERIAL	TREATMENT
TRACED					
DRAWN					
CHECKED					
HOS/D&DO					
MODL OFFICER					
OFFICER/D&DO					
SUB: BARREL AFTER HONING		FOR: BARREL		SCALE: 1:2	
OF: 40mm MGL		DES. REF. NO.		STORE DRG. NO. 30P 1001	
DRG. No.: TEND-2628 *		OPERATION NO.		SHEETS: 1	
ORDNANCE FACTORY TIRUCHIRAPPALLI-16.		SHEET No.: 1			

QUALITY MONITORING INSTRUCTION FOR INSPECTION		Issue No : 01
		Rev No:
		Date of Issue / / 2021
TEND-2628* (BARREL AFTER HONING) For 30P 1001*3		OFT/MI/MGL/30P 1001
Rev.No	Amendment	Date

MATERIAL SPECIFICATION : IS: 5517-1993, GR. 42Cr4Mo2 (or)
BS: 970, Pt.1, 1983 Gr. 709 M40 (or) 708 M40 with 'T' Condition (or)
En 19 (or) En 19A with 'T' Condition.

CONDITION OF SUPPLY : Barrel After Honing (Blank)

END USE : 40mm MGL.

INSPECTION CHECK TO BE CARRIED OUT

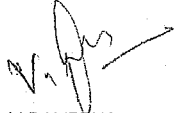
Table 'A'

SL NO	CHARACTERISTICS	SPECIFICATION / REQUIREMENT	SAMPLE SIZE
1.	Visual	The blank shall be free from defects such as rust, scale, burrs and any other harmful defects.	100%
2.	Dimension	100% Dimensional check as per store drawing.	
3.	Chemical Composition (%)	<p><u>IS: 5517-1993, Design 42Cr4 Mo2</u> C = 0.38 – 0.45 Mn = 0.60 – 0.90 Si = 0.10 – 0.35 S = 0.010 (Max) Cr = 0.90 – 1.20 P = 0.016 (Max) Mo = 0.15 – 0.30 Ni = 0.25 (Max) Cu = 0.35 (Max) V = 0.05 (Max) B = 0.0003 (Max) Tin = 0.05 (Max) %Cu + 10times (%tin) = 0.60% (Max).</p> <p><u>BS : 970 PT-1, 1983 GR.709 M40</u> C = 0.36-0.44 Mo = 0.25-0.35 Si = 0.10-0.35 S = 0.010 (Max) Mn = 0.70-1.00 P = 0.016 (Max) Cr = 0.90-1.20 Ni = 0.40(Max)</p> <p><u>BS: 970 PT-1, 1983 GR.708 M40</u> C = 0.36-0.44 Mo = 0.15-0.25 Si = 0.10-0.35 S = 0.010 (Max) Mn = 0.70-1.00 P = 0.016 (Max) Cr = 0.90-1.20 Ni = 0.40(Max)</p> <p><u>EN-19</u> C = 0.35-0.45 Mo = 0.20-0.40 Si = 0.10-0.35 V = 0.05 (Max) Mn = 0.50-0.80 S = 0.010 (Max) Cr = 0.90-1.50 P = 0.016 (Max) Ni = 0.40 (Max)</p> <p><u>EN-19A</u> C = 0.35-0.45 Mo = 0.20-0.35 Si = 0.10-0.35 V = 0.05 (Max) Mn = 0.50-0.80 S = 0.010 (Max) Cr = 0.90-1.20 P = 0.016 (Max) Ni = 0.40 (Max)</p> <p>(Permissible variations in value as per specification standard)</p>	One Sample Per Heat

4.	Mechanical Properties	<p>IS: 5517-1993, Design 42Cr4 Mo2 (LRS 63mm)</p> <p>Tensile Strength 900-1050 MPa 0.2% Proof Stress 650 MPa (Min) % Elongation (5.65√A) 11% (Min.) Izod Impact 50 Joules (Min)</p> <p>BS : 970 PT-1, 1983 GR.709 M40 ('T' Condition)</p> <p>Tensile Strength 850-1000 N/mm² Yield Strength 680 N/mm² (Min) Elongation (5.65√A) 13% (Min.) Izod 40 Ft.Lb (Min)</p> <p>BS: 970 PT-1, 1983 GR.708 M40 ('T' Condition)</p> <p>Tensile Strength 850-1000 N/mm² Yield Strength 680 N/mm² (Min) Elongation (5.65√A) 13% (Min.) Izod 40 Ft.Lb (Min)</p> <p>EN-19 ('T' Condition)</p> <p>Tensile Strength 55 Tonns/Sq.In (Min) Yield Strength 44 Tonns/Sq.In (Min) Elongation 18% (Min.) Izod 40 Ft.Lb (Min)</p> <p>EN-19A ('T' Condition)</p> <p>Tensile Strength 55 Tonns/Sq.In (Min) Yield Strength 44 Tonns/Sq.In (Min) Elongation 18% (Min.) Izod 40 Ft.Lb (Min)</p>	One Sample Per Heat																												
		5.		Other Tests	<p>i) Macro Etch Test: Acceptance Standard better than or equivalent to C-1, R-1,S-1 for Plate I and Nil for Plate II.</p> <p>(ii) NMIR as per IS:4163-2004</p> <table border="1"> <thead> <tr> <th colspan="2">A</th> <th colspan="2">B</th> <th colspan="2">C</th> <th colspan="2">D</th> <th rowspan="2">DS</th> </tr> <tr> <th>Thin</th> <th>Thick</th> <th>Thin</th> <th>Thick</th> <th>Thin</th> <th>Thick</th> <th>Thin</th> <th>Thick</th> </tr> </thead> <tbody> <tr> <td>1.5 (Max)</td> <td>0.5 (Max)</td> <td>1.5 (Max)</td> <td>Nil</td> <td>1.5 (Max)</td> <td>Nil</td> <td>1.5 (Max)</td> <td>0.5 (Max)</td> <td>Nil</td> </tr> </tbody> </table>	A		B		C		D		DS	Thin	Thick	Thin	Thick	Thin	Thick	Thin	Thick	1.5 (Max)	0.5 (Max)	1.5 (Max)	Nil	1.5 (Max)	Nil	1.5 (Max)	0.5 (Max)	Nil
		A		B		C		D		DS																					
		Thin		Thick	Thin	Thick	Thin	Thick	Thin		Thick																				
1.5 (Max)	0.5 (Max)	1.5 (Max)	Nil	1.5 (Max)	Nil	1.5 (Max)	0.5 (Max)	Nil																							
6.	Hardness	37-42 HRC (as per drawing)																													
7.	Packing	The Packing of the Material shall be done in such a manner to avoid corrosion and damage in handling and transit.	Each Consignment																												
8.	Marking	Each Packing shall be legibly marked with manufacturer's identity , Qty, Heat No, OFT Supply order No etc.,																													

U.MANGALASAMY
HOS/STD.CELL
CHECKED

L.S. ASHA
HOS / QCM
CHECKED


V.RAVEENDAR
JWM/STD.CELL
PREPARED

S. KRISHNA SWAMY
JT.GM (QC and R&D)

G.DEVENDIRANE
AWM (QCM & HT)

A.K SINGH
AGM / (WP & MAINT)
APPROVED