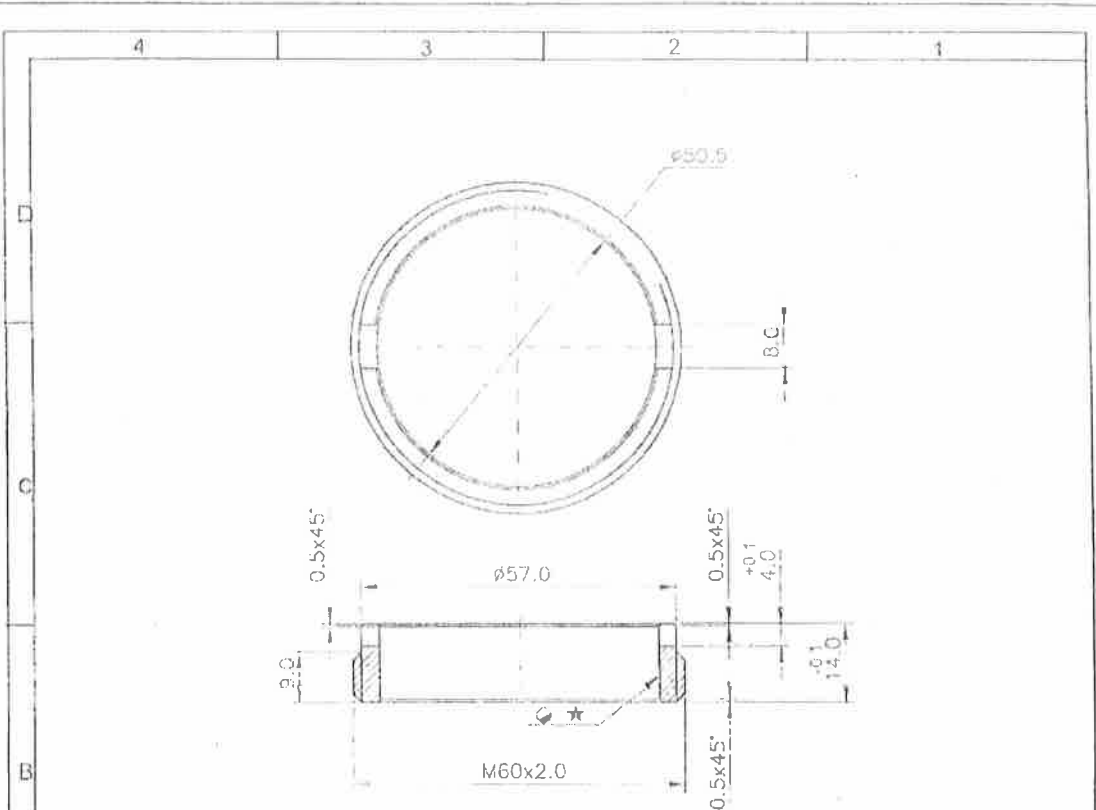


TRIM ON THIS LINE WHEN SUPPLIED TO TRADE



SUBJECT TO SATISFACTORY FITMENT

MARKING NOTES:-

THE FOLLOWING MARKINGS TO BE ENGRAVED IN 08 TO 12MM LETTER SIZE ON THE INNER SURFACE HAVING LENGTH 14.0^{-0.1}:-
 ⊙ SERIAL NO. ☆ MANUFACTURE'S LOGO
 DEPTH OF ENGRAVING - 40 TO 100 MIC

PROTECTIVE FINISH:- ZINC & CHROMATE COATING 0.013 mm THICK T O I S : 1573

10 APR 15	B.C. 2	MARKING NOTES ADDED		ARD 2547	
13-2-74		PROTECTIVE FINISH AMENDED		ARD 2453	
02-06-09		APPROVED		DGNAI	
R.No	DATE	ZONE	BRIEF RECORD	AUTHORITY	INITIALS
SCALE:- 1:1	TOL.	DIMENSIONS ARE IN mm		ASSY DRG No. NASK 1071	
DGN	DRN	TCD	COMPL.	CHD	ASSY DRG LIST.
PASSED	APPD.	THREADS TO CONFIRM IS:4218		DTE GEN OF NAVAL ARMAMENT INSPECTION IHQ,MOD (NAVY) N. DELHI	
		GEN SPEC :- IS:2102			
MATL:-STEEL		STORE SPEC :-			
MATL SPEC:- BS:970 (Pt-I)-83		STORE REF No			
Gde 080 40M		GAUGE SCH No.			
PROTECTIVE FINISH:- SEE DRG.		D.S. CAT No.			
CHECK NUT					
				DRG No. NASK 1071/7 (PROVISIONAL)	

A-4

USED ON ROCKET R8B-8C

BASED ON:- CNAI(V) DRG NO NAI(V) 8D107/ D1 20-02-08

DC

88
QUALITY ASSURANCE PLAN FOR A/S ROCKET RGB 60 (EMPTY) MOD 1

Item Description	CHECK NUT
Ref. Document	NASK 1071/7 (P)
Material	Steel to spec BS 970(Pt 3)-91 Gde 080 M40
Heat Treatment	Normalised

Component name/ operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection Activity Categorisation	Inspection by
Check nut -Raw material	General finish, appearance	Semi critical	Visual	100%	BS 970(Pt 3)-91 Gde 080 M40 (Normalised)	BS 970(Pt 3)-91 Gde 080 M40 (Normalised)	Visual Inspn. Report	Non-Critical	QC/HEPF
	Chemical properties	Critical	Chemical lab analysis	Three samples per lot or as per the discretion of inspection authority			Test report from NABL Lab / Govt lab		
	Mechanical properties	Critical	Mechanical lab analysis	Three samples per lot or as per the discretion of inspection authority			Test report from NABL Lab / Govt lab		
In process - Turning and milling	Dimensions specified in the inspection report of the component	Critical	Dimensional measurement	As per sampling plan IS 2500 Level II	Tolerance as specified in Drg.NASK 1071/7 (P)	Tolerance as specified in Drg.NASK 1071/7 (P)	Inspection report of Gland		
Final finish	Zinc & Chromate 0.013 mm thick	Critical	Visual / Test Sample	100%	IS:1573	IS:1573	Test report from NABL Lab / Govt lab or Inspection report of Gland		

Inspection Report

Description of the item	CHECK NUT
Drawing No.	NASK 1071/7 (P)
Date of Inspection	

Sno.	Description of parameter	Nominal dimension as per drawing in mm	Gauge used	Tolerance (As specified in the drg.)	Nature of Parameter	Deviation in mm	Remarks
1	External thread	M 60 x 2	Screw ring 'Go' & 'No Go' gauge sl.no. 155				
2	Length of external thread	9					
3	Outer diameter	57	Snap 'Go' & 'No Go' gauge No. 143		Major		
4	Inner diameter	50.5					
5	Width of recess on face (Diametrically opposite)	8					
6	Depth of recess	4		+0.1			
7	Overall width	14		-0.1			
8	Outer chamfer (Both ends - 3 chamfers)	0.5 x 45°			Minor		

Special Notes:

Ser.	Note	Observations
1	Material: Steel to spec BS 970(Pt 3)-91 Gde 080 M40	
2	General tolerance spec IS 2102 (Medium class) unless specified.	
3	100% thread gauging to be undertaken to check external thread M60x2.	
4	Satisfactory fitment with mating component is critical.	
5	Finish: Zinc and chromate coating 0.013 mm thick to Spec IS:1573.	
6	Manufacturer's logo and serial No. to be engraved in 08 to 12mm letter size on the inner surface having length 14.0-0.1. Depth	

Table 13 — Chemical composition: carbon and carbon manganese steels

Steel	C	Si	Mn	P	S
	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)
080A15	0.13 to 0.18	0.10 to 0.40	0.70 to 0.90	0.05 max.	0.05 max.
080M15	0.12 to 0.18	0.10 to 0.40	0.60 to 1.00	0.05 max.	0.05 max.
070M20	0.16 to 0.24	0.10 to 0.40	0.50 to 0.90	0.05 max.	0.05 max.
080A30	0.26 to 0.34	0.10 to 0.40	0.70 to 0.90	0.05 max.	0.05 max.
080M30	0.26 to 0.34	0.10 to 0.40	0.60 to 1.00	0.05 max.	0.05 max.
080M40	0.36 to 0.44	0.10 to 0.40	0.60 to 1.00	0.05 max.	0.05 max.
080A42	0.40 to 0.45	0.10 to 0.40	0.70 to 0.90	0.05 max.	0.05 max.
080A47	0.45 to 0.50	0.10 to 0.40	0.70 to 0.90	0.05 max.	0.05 max.
080M50	0.45 to 0.55	0.10 to 0.40	0.60 to 1.00	0.05 max.	0.05 max.
070M55	0.50 to 0.60	0.10 to 0.40	0.50 to 0.90	0.05 max.	0.05 max.
150M19	0.15 to 0.23	0.10 to 0.40	1.30 to 1.70	0.05 max.	0.05 max.
150M36	0.32 to 0.40	0.10 to 0.40	1.30 to 1.70	0.05 max.	0.05 max.

NOTE See also 3.3 g) and option A.1, A.2 and A.4.

Table 14 — Chemical composition: case hardening steels (carbon and carbon manganese steels)

Steel	C	Si	Mn	P	S
	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)
045A10	0.08 to 0.13	0.10 to 0.40	0.30 to 0.60	0.05 max.	0.05 max.
045M10	0.07 to 0.13	0.10 to 0.40	0.30 to 0.60	0.05 max.	0.05 max.
080M15	0.12 to 0.18	0.10 to 0.40	0.60 to 1.00	0.05 max.	0.05 max.
210M15	0.12 to 0.18	0.10 to 0.40	0.90 to 1.30	0.05 max.	0.10 to 0.18

Table 15 — Chemical composition: alloy case hardening Steels^a

Steel	C	Si	Mn	Cr	Mo	Ni
	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)
635M15	0.12 to 0.18	0.10 to 0.40	0.60 to 0.90	0.4 to 0.80	—	0.70 to 1.10
637M17	0.14 to 0.20	0.10 to 0.40	0.60 to 0.90	0.60 to 1.00	—	0.85 to 1.25
655M13	0.10 to 0.16	0.10 to 0.40	0.35 to 0.60	0.70 to 1.00	—	3.00 to 3.75
665M17	0.14 to 0.20	0.10 to 0.40	0.35 to 0.75	—	0.20 to 0.30	1.50 to 2.00
805M17	0.14 to 0.20	0.10 to 0.40	0.60 to 0.95	0.35 to 0.65	0.15 to 0.25	0.35 to 0.75
805M20	0.17 to 0.23	0.10 to 0.40	0.60 to 0.95	0.35 to 0.65	0.15 to 0.25	0.35 to 0.75
815M17	0.14 to 0.20	0.10 to 0.40	0.60 to 0.90	0.80 to 1.20	0.10 to 0.20	1.20 to 1.70
820M17	0.14 to 0.20	0.10 to 0.40	0.60 to 0.90	0.80 to 1.20	0.10 to 0.20	1.50 to 2.00
822M17	0.14 to 0.20	0.10 to 0.40	0.40 to 0.70	1.30 to 1.70	0.15 to 0.25	1.75 to 2.25
835M15	0.12 to 0.18	0.10 to 0.40	0.25 to 0.50	1.00 to 1.40	0.15 to 0.30	3.90 to 4.30

NOTE See also 3.3 c), 3.3 i) and options A.2 and A.5.

^a Sulfur 0.05 % max., phosphorous 0.04 % max. for all qualities.

Table 20 — Mechanical properties for carbon and carbon manganese steels (18)

Steel	Condition (2)	Size (1) (diameter across flats or thickness) mm	R_m N/mm ²	R_e min. N/mm ²	A min. on 5.65 $\sqrt{S_0}$ %	Impact ^a		$R_{p0.2}$ (3) min. N/mm ²	HB (13)	
						Izod min. J	KCV min. J			
080M40	Normalized + turned or ground	$\geq 6 \leq 150$	550 min. 510 min.	280 245	16 17	20	16	—	152 to 207 146 to 197	
		$\geq 6 \leq 13$	660 min.	530	7	—	—	495		
		$> 13 \leq 16$ $> 16 \leq 40$ $> 40 \leq 63$ $> 63 \leq 76$	650 min. 620 min. 600 min. 570 min.	510 480 465 430	8 9 10 10	— — — —	— — — —	485 435 370 350		
080M50	Hardened and tempered + turned or ground	$\geq 6 \leq 63$ $R \geq 6 \leq 19$	625 to 775 700 to 850	385 465	16 16	34 34	28 28	355 450	179 to 229 201 to 255	
		$\geq 6 \leq 63$ $R \geq 6 \leq 19$	625 to 775 700 to 850	435 490	12 12	34 34	— —	380 460	179 to 229 201 to 255	
		Normalized + turned or ground	$\geq 6 \leq 150$ $> 150 \leq 250$	620 min. 570 min.	310 295	14 14	— —	— —	— —	179 to 229 163 to 217
080M50	Normalized + cold drawn or normalized + cold drawn + ground	$\geq 6 \leq 13$ $> 13 \leq 16$ $> 16 \leq 40$ $> 40 \leq 63$ $> 63 \leq 76$	740 min. 730 min. 690 min. 680 min. 650 min.	590 585 555 540 510	7 8 8 9 10	— — — — —	— — — — —	555 545 485 420 400		
		Hardened and tempered + turned or ground	$\geq 6 \leq 150$ $R \geq 6 \leq 63$ $S \geq 6 \leq 29$ $T \geq 6 \leq 13$	625 to 775 700 to 850 775 to 925 850 to 1 000	390 430 495 570	15 14 14 12	— — — —	— — — —	360 400 465 555	179 to 229 201 to 255 223 to 277 248 to 302
			(4)							
080M50	Hardened and tempered + cold drawn or hardened and tempered + cold drawn + ground	$\geq 13 \leq 150$ $R \geq 6 \leq 63$ $S \geq 6 \leq 29$ $T \geq 6 \leq 13$	625 to 775 700 to 850 775 to 925 850 to 1 000	430 490 540 595	11 10 10 9	— — — —	— — — —	390 450 500 550	179 to 229 201 to 255 223 to 277 248 to 302	
		Turned, ground or cold drawn and finally softened	—	—	—	—	—	—	—	187 max.

^a See also option A.3.