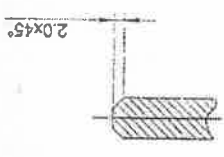
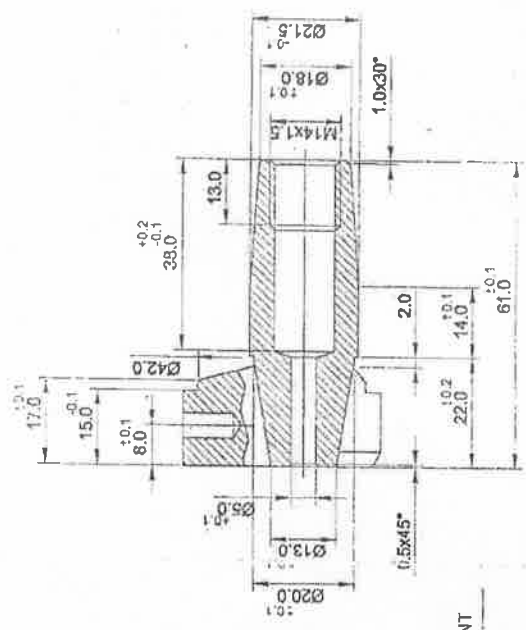


3 HOLES TO BE TAPPED M6 X 1 X 5 +1.0 DEEP ON RIB



SECTION 'A-A'



OPEN TOL. SUBJECT TO SATISFACTORY FITMENT

CORE TO BE PHOSPHATED TO IS: 3618, CLASS - B.
 EXTERNAL & INTERNAL SURFACES TO BE PAINTED WITH OLIVE GREEN ISC NO. 220 TO SPEC IS:5 EXCEPT THREADED SURFACE
 MATL. SPEC.: BS:970 (Pt-I)-83 Gde 080 M40 NORMALISED CONDITION

MARKING NOTES:-
 THE FOLLOWING MARKINGS TO BE ENGRAVED IN 08 TO 12MM LETTER SIZE ON ONE OF THE FINS OF THE CORE. HOLE AREA TO BE AVOIDED DURING ENGRAVING
 SERIAL NO. ☆ MANUFACTURER'S LOGO
 DEPTH OF ENGRAVING 80 TO 120 MIC

SCALE: N.T.S.		DIMENSIONS ARE IN mm		TOL		D.S. CAT No.		ASSY.DRG. No.: NASK 1068	
DN	PASSED	DRN	APPROVED	COMP	FORM	CHKD.	DRG	ASSY.DRG.LIST No.	
MATERIAL: STEEL		PROTECTIVE FINISH: SEE DRG		THREADS TO CONFIRM IS: 4218				DTE GEN OF NAVAL	
MATERIAL SPEC.: SEE DRG		INITIALS		GEN SPEC. IS: 2102				ARMAMENT INSPECTION	
AUTHORITY		BRIEF RECORD		STORE SPEC. NO.				IHQ, Mod (NAVY), N. DELHI	
R.No		DATE		STORE REF. No.				Gauge No.	
E-4		10 APR 18		GAUGE SCHEMULE No.				DRG.No.	
D-2324		13-02-14		MARKING NOTES ADDED				NASK 1068/9	
02-06-09		02-06-09		DRAWING AMENDED				(PROVISIONAL)	
DATE		ZONE		APPROVED					

CORE

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

Item Description	CORE
Ref. Document	NASK 1068/9 (PROV)
Material	Steel to spec BS 970(Pt 3)-91 Gde 080 M40
Heat Treatment	Normalised condition.

Component name/operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection Activity Categorisation	Inspection by
Core (Raw material)	General finish, appearance	Semi critical	Visual	100%	BS 970(Pt 3)-91 Gde 080 M40	BS 970(Pt 3)-91 Gde 080 M40	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 - Rod cutting, turning, milling,drilling and tapping	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 1068/9 (P)	Tolerance as specified in Drg. NASK 1068/9 (P)	Inspection report of Core	Critical	NAI
Final finish	Phosphating	Critical	Visual / Test sample	100%	IS:3618 Class B	IS:3618 Class B	Test report from NABL Lab / Govt Lab	Non-Critical	QC/HEPF
	Olive green painting								

Inspection Report

Description of the item	CORE
Drawing No.	NASK 1068/9 (P)
Date of Inspection	

Sno.	Description of parameter	Nominal dimension as per drawing in mm	Gauge used	Tolerance (As specified in the relevant drawing)	Nature of Parameter	Observed dimension in mm	Deviation in mm	Remarks
1	Inner hole	5	Plug 'Go' & 'No Go' gauge No.104	+0.1	Major			
2	Face dia.	13		±0.1	Major			
3	Outer dia.	47.8	Ring 'Go' & 'No Go' gauge No.51		Major			
4	Rib height	16		±0.1	Major			
5	Rib width	8		±0.1	Major			
6	Rib chamfer	2 x 45°			Minor			
7	Chamfer	0.5 x 45°			Minor			
8	Under cut dia.	20		±0.1	Minor			
9	Outer step dia.	42			Major			
10	Tapped hole 3 nos on rib	M 6 x 1 x 5 deep on Rib		+1.0 deep	Major			
11	Centre distance of tapped hole from end	8		±0.1	Major			
12	Outer length	15		-0.1	Major			
13	Outer length	17		±0.1	Major			
14	Under cut width	2			Minor			
15	Length	22		±0.2	Major			
16	Length	14		±0.1	Major			
17	Overall length	61	Snap 'Go' & 'No Go' gauge No.133	±0.1	Major			
18	Outer dia.	21.5	Snap 'Go' & 'No Go' gauge No.17	-0.1	Major			
19	Taper dia	18		±0.1	Major			
20	Internal thread	M 14 x 1.5	Srew Plug 'Go' & 'No Go' gauge No.162		Major			
21	Internal thread length	13			Major			
22	Length of inner dia.	38		+0.2 / -0.1	Major			
23	Chamfer	1.0 X 30°			Minor			

Special Notes:

- 1 Material: Steel to Spec BS 970(Pt 3)-91 Gde 080 M40 Normalised condition.
- 2 General Tolerance spec IS 2102 (Medium class) unless specified in the drawing.
- 3 To be phosphated to IS 3618 Class B
- 4 External and internal surfaces to be painted with olive green IS No.220 to Spec IS 5 except threaded surfaces
- 5 Manufacturer's logo and Serial No. to be engraved in 08 to 12mm letter size on one of the fins of the core. Hole area to be avoided during engraving. Depth of engraving 80 to 120 microns.

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√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	≥ 6 ≤ 150	550 min.	280	16	20	16	—	152 to 207
		> 150 ≤ 250	510 min.	245	17	—	—	—	146 to 197
	Hot rolled + cold drawn or hot rolled + cold drawn + ground	≥ 6 ≤ 13	660 min.	530	7	—	—	495	—
		> 13 ≤ 16	650 min.	510	8	—	—	485	—
Hardened and tempered + turned or ground	Q ≥ 6 ≤ 63 R ≥ 6 ≤ 19	> 16 ≤ 40	620 min.	480	9	—	—	435	—
		> 40 ≤ 63	600 min.	465	10	—	—	370	—
Hardened and tempered + turned or ground	Q ≥ 6 ≤ 63 R ≥ 6 ≤ 19	> 63 ≤ 76	570 min.	430	10	—	—	350	—
		Q ≥ 6 ≤ 63 R ≥ 6 ≤ 19	625 to 775 700 to 850	385 465	16 16	34 34	28 28	355 450	179 to 229 201 to 255
Hardened and tempered + cold drawn or hardened and tempered + cold drawn + ground	Q ≥ 6 ≤ 63 R ≥ 6 ≤ 19	≥ 6 ≤ 13	625 to 775	435	12	34	—	380	179 to 229
		> 13 ≤ 16	700 to 850	490	12	34	—	460	201 to 255
080M50	Normalized + turned or ground	≥ 6 ≤ 150	620 min.	310	14	—	—	—	179 to 229
		> 150 ≤ 250	570 min.	295	14	—	—	—	163 to 217
	Normalized + cold drawn or normalized + cold drawn + ground	≥ 6 ≤ 13	740 min.	590	7	—	—	555	—
		> 13 ≤ 16	730 min.	585	8	—	—	545	—
Hardened and tempered + turned or ground	Q ≥ 6 ≤ 150 R ≥ 6 ≤ 63 S ≥ 6 ≤ 29 T ≥ 6 ≤ 13	> 16 ≤ 40	690 min.	555	8	—	—	485	—
		> 40 ≤ 63	680 min.	540	9	—	—	420	—
Hardened and tempered + turned or ground	Q ≥ 6 ≤ 150 R ≥ 6 ≤ 63 S ≥ 6 ≤ 29 T ≥ 6 ≤ 13	> 63 ≤ 76	650 min.	510	10	—	—	400	—
		Q ≥ 6 ≤ 150 R ≥ 6 ≤ 63 S ≥ 6 ≤ 29 T ≥ 6 ≤ 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
Hardened and tempered + cold drawn or hardened and tempered + cold drawn + ground	Q ≥ 13 ≤ 150 R ≥ 6 ≤ 63 S ≥ 6 ≤ 29 T ≥ 6 ≤ 13	Q ≥ 13 ≤ 150	625 to 775	430	11	—	—	390	179 to 229
		R ≥ 6 ≤ 63	700 to 850	490	10	—	—	450	201 to 255
Turned, ground or cold drawn and finally softened	(4)	S ≥ 6 ≤ 29	775 to 925	540	10	—	—	500	223 to 277
		T ≥ 6 ≤ 13	850 to 1 000	595	9	—	—	550	248 to 302
									187 max.

^a See also option A.3.