

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

Item Description	SOCKET									
Ref. Document	MASK 1068/3 (P)									
Material	Steel to Spec BS:970(Pt 3)-91 Gde									
Heat Treatment	070 M20 Normalised									
Component name/operations	Characteristics	Class	Type of check	Quantum of check	Reference document	Acceptance norms	Format of record	Inspection Activity Categorisation	Inspection by	
Socket (Raw material)	General finish, appearance	Semi critical	Visual	100%			Visual Inspn. Report			
	Chemical properties	Critical	Chemical lab analysis	Three samples per lot or as per the discretion of inspection authority	BS:970(Pt 3)-91 Gde 070 M20 Normalised	BS:970(Pt 3)-91 Gde 070 M20 Normalised	Test report from NABL Lab / Govt Lab	Non-Critical		QC/HEPF
	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 & Plating	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. MASK 1068/3 (P)	Tolerance as specified in Drg. MASK 1068/3 (P)	Inspection report of Socket	Critical		NAI
Final Finish	Zinc & Chromate coating 20 micron thick	Critical	Visual & Test Sample	100%	IS:1573	IS:1573	Test report from NABL Lab / Govt Lab	Non-Critical		QC/HEPF

Inspection Report

Description of the item	SOCKET
Drawing No.	NASK 1068/3 (P)
Date of Inspection	

Sno.	Description of parameter	Nominal dimension as per drawing in mm	Gauge used	Tolerance	Nature of Parameter	Observed dimension in mm	Deviation in mm	Remarks
1	Outer diameter	26	Snap 'Go' & 'No Go' gauge No.25	As specified in the relevant drg.	Major			
2	External thread	M 24x 1.5	Screw ring 'Go' & 'No Go' gauge No.158		Major			
3	External thread length	13	T Plate 'Go' & 'No Go' gauge No.26		Major			
4	Under cut width	2.5			Minor			
5	Internal thread to be maintained through out length	M17 x1.5	Screw Plug 'Go' & 'No Go' gauge No.119.		Major			
6	Chamfer	1 x 45°			Minor			
7	Overall length	38	Snap 'Go' & 'No Go' gauge No.142		Minor			

Special Notes:

Sno.	Note	Observations
1	Material: Steel to Spec BS:970(Pt 3)-91 GDE 070 M20 (Normalised)	
2	General Tolerance specn. IS 2102 (Medium class) unless specified.	
3	Finish Zinc and Chromate coating 20 Micron thick to spec.IS:1573.	
4	Manufacturer's logo and Serial No. to be engraved in 10 to 20mm letter size on outer surface having Ø26.0. Depth of engraving 40 to 100 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		
080M15	Normalized + turned or ground	≥ 6 ≤ 63	350 min.	175	22	—	—	—	109 to 163
		> 63 ≤ 150	330 min.	165	22	—	—	—	101 to 152
	Hot rolled + cold drawn or hot rolled + cold drawn + ground	≥ 6 ≤ 13	450 min.	330	10	—	—	—	—
> 13 ≤ 29 > 29 ≤ 100		430 min. 400 min.	320 300	12 13	—	—	—	—	
070M20	Normalized + turned or ground	≥ 6 ≤ 150	430 min.	215	21	—	—	—	126 to 179
		> 150 ≤ 250	400 min.	200	21	—	—	—	116 to 170
	Hot rolled + cold drawn or hot rolled + cold drawn + ground	≥ 6 ≤ 13	560 min.	440	10	—	—	—	—
> 13 ≤ 16 > 16 ≤ 40 > 40 ≤ 63 > 63 ≤ 76		530 min. 490 min. 480 min. 450 min.	420 370 355 325	12 12 13 14	—	—	420 390 340 290 280	— — — —	
080M30	Normalized + turned or ground	≥ 6 ≤ 150	490 min.	245	20	—	—	—	143 to 192
		> 150 ≤ 250	460 min.	230	19	—	—	—	134 to 183
	Hot rolled + cold drawn or hot rolled + cold drawn + ground	≥ 6 ≤ 13	620 min.	480	9	—	—	460	—
> 13 ≤ 16 > 16 ≤ 40 > 40 ≤ 63 > 63 ≤ 76		600 min. 570 min. 560 min. 530 min.	470 430 415 385	10 11 12 12	—	—	450 400 345 320	— — — —	
Hardened and tempered + turned or ground	Hardened and tempered + turned or ground	P ≥ 6 ≤ 63	550 to 700	340	18	34	28	310	152 to 207
		Q ≥ 6 ≤ 19	625 to 775	415	16	34	28	400	179 to 229
Hardened and tempered + cold drawn or hardened and tempered + cold drawn + ground	Hardened and tempered + cold drawn or hardened and tempered + cold drawn + ground	P ≥ 6 ≤ 63	550 to 700	385	13	34	—	340	152 to 207
		Q ≥ 6 ≤ 19	625 to 775	460	12	34	—	430	179 to 229

^a See also option A.3.