QUALITY ASSURANCE PLAN OF INPUT MATERIAL

12.7mm AD GUN (Metallic Component)

1.Nomenclature :- LEVER REMOTE CONTROL FEED BELT **(A 6029)**

2.Drawing No./ DS.CAT.No :- 6P11 - 6 - 29 / 1005 - 007447

3.Material Specification :- STEEL 30 X PA OST 3 - 98 - 80

Alt.Matl : STEEL 30 x H2 M Ø A OST 3 - 98 - 80 (OR)
STEEL 30 x H2 M Ø A GOST 4543 - 71

Matl. For India :- IS : 5517 - 1993 DESIG 31 Ni10, Cr3, Mo6
With Restriction of S & P content upto 0.025%max for each
LRS - 63mm

4.Chemical Composition :-

For STEEL 30 x PA OST 3 - 98 - 80

C = 0.28 to 0.33	Si = 0.17 to 0.37
Mn = 0.50 to 0.80	S = 0.025 (max)
Cr = 1.00 to 1.30	P = 0.025 (max)
Ni = 0.25 to 0.50	

Note:-

1)In steel grades 50PA and 30XPA boron is added in a quantity of not more than 0.0045% without taking into account melting loss.In this case, residual boron content in the steel should not be less than 0.001%.
2) A residual content of copper not more than 0.30% is permitted in steel manufactured by Pig and Scrap process.

For STEEL 30 x H2 M Ø A OST 3 - 98 - 80

C = 0.27 to 0.34	V = 0.10 to 0.18
Si = 0.17 to 0.37	Mo = 0.20 to 0.30
Mn = 0.30 to 0.60	S = 0.010 (max)
Cr = 0.60 to 0.90	P = 0.016 (max)
Ni = 2.00 to 2.40	Cu = 0.20 (max)

STEEL 30 x H2 M Ø A GOST 4543 - 71

C = 0.27 to 0.34	V = 0.10 to 0.18
Si = 0.17 to 0.37	Mo = 0.20 to 0.30
Mn = 0.30 to 0.60	S = 0.025 (max)
Cr = 0.60 to 0.90	P = 0.025 (max)
Ni = 2.00 to 2.40	Cu = 0.30 (max)

For IS : 5517 - 1993 DESIG.31, Ni 10, Cr 3, Mo 6

C = 0.27 to 0.35	Cr = 0.5 to 0.8
Mn = 0.40 to 0.70	Mo = 0.40 to 0.70
Si = 0.10 to 0.35	S = 0.025 (Max)
Ni = 2.25 to 2.75	P = 0.025 (Max)

5.Physical Properties :-

For STEEL 30 x PA OST 3 - 98 - 80

1. Tensile Strength	=	160 kgf/mm^2 (Min)
2. Yield Striength	=	130 kgf/mm^2 (Min)
3. Elongation	=	9 % (Min)
4. Reduction Area	=	40 (Min)
5. Impact	=	5 kgfm/cm^2

For STEEL 30 x H2 M Ø A OST 3 - 98 - 80

1. Tensile Strength	=	160 kgf/mm^2
2. Yield Striength	=	130 kgf/mm^2
3. Elongation	=	8 %
4. Reduction Area	=	40
5. Impact	=	6 kgfm/cm^2

For STEEL 30 x H2 M Ø A GOST 4543 - 71

1. Tensile Strength	=	90 kgf/mm^2
2. Yield Striength	=	80 kgf/mm^2
3. Elongation	=	10 %
4. Impact	=	9 kgfm/cm^2

For IS : 5517 - 1993 DESIG.31, Ni 10, Cr 3, Mo 6

1. Tensile Strength	=	1200 to 1350 N/mm^2
2. 0.2 % PS	=	1000 N/mm^2 (min)
3. Elongation	=	10 % (Min)
4. Izod	=	35J (Min)

Coupon Hardness : - A separate test piece to be heat treated to achieve hardness 43 to 49 HRC

6.Other tests: 1. Macro etch test as per ASME - 381 with acceptance standard as C2,R2,S2.

2. NMIR test as per IS : 4163 - 82 STRESSED component.

QUALITY AUDIT FOR INPUT MATERIAL

Following documents are to be submitted:

a. Supply Order
b. MIS
c. I.Note
e. Batch Number/Heat Number
f. Chemcial Test Certificate
g. Mechanical test Certificate
(for Hardness & Shear strength)

d. Status : Critical / Non - critical
Batch size
Sample size
Frequency of sampling

7.Dimensional , Checking & Gauge Schedule control / surveillance points :-

Sl. No.	Audit points	DRG. ZONE	GAUGE No./METHOD	Class of defect DCL	Acceptance (AQL as per IS: 2500)
1	$70^{+0.3}$	A9	62G 6029 020 A3		
2	$71.5^{+0.3}$	C9	62G 6029 021 A4		
3	& $12^{+0.3}$	E5	62G 6029 022 A4		
4	$38^{\pm0.1}$	E12	62G 6029 024 A3		
5	21.5	F9	62G 6029 025 A3		
6	99	C9	62G 6029 026 A4		
7	$27^{\circ\pm30'}$	F5	62G 6029 027 A3		
8	17	E9	62G 1013 041 A4		
9	$Ø7.95^{+0.05}$	F11	62G 2066 020 A4		
10	$Ø8^{+0.03}$	D11	62G 2520 110 A4		
11	R6	E7	62G 6029 023 A4		
12	$Ø4^{+0.3}$	E10	62G 6029 151 A4		
13	$12^{+0.12}$	E8	62G 1006 197 A4		
14	$75^{\pm0.2}$	F9	62G 6029 020 A3		
15			62G 6029 021 A3		
16			62G 6029 022 A4		

8. **Heat Treatment / Hardness :-** 43 TO 49 HRC to be checked on test piece.
9. **Surface Treatment :-**
10. **Protective Finish :-** Phosphated to Specn.JSS: 0465-01 : 1988 Class-II (Accelerated), Oil Finish.

Note :-

11. Physical Properties and other tests as per requirement of relevent specn.
12. Test report is to be issued from NABL approved Lab / DGQA Lab / DGQA approved Lab ./ Ord FyLab
13. Record of test report with reference to MIS No are to be maintained
14. Ensure details of manufacturer 's code , Lot No , Yr.of. Mfg are marked on the stores suitably and entering QC Report .

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