



**NOTE:-**

1. PISTON TO BE MACHINED AS SHOWN.
2. GUIDE PIN TO BE FITTED AFTER MACHINING.
3. LOCKING DOWEL TO BE INSERTED IN THE GUIDE PIN IN POSITION.
4. CO-EFFICIENT OF FRICTION BETWEEN PISTON (REF. 1) AND STEEL SHOULD BE EQUAL TO 0.10.

**TABLE**

Sl.	PROPERTY	MATERIAL: Non-metallic, Wear Resistant, Self Lubricated					
		Nylatron or PA6 with solid lubricant (for Piston)			Polyethylene terephthalate (PET) with solid lubricant (for Sleeve)		
		TEST METHOD	UNITS	PERMISSIBLE LIMITS	TEST METHOD	UNITS	PERMISSIBLE LIMITS
1	Specific Gravity	ASTM D 792	-	1.12-1.25	ASTM D 792	-	1.39-1.45
2	Hardness	ASTM D 785	Shore D	80-90	ASTM D 785	Shore D	85-90
3	Tensile Strength at Yield	ASTM D 638	MPa	70 (Min.)	ASTM D 638	MPa	70 (Min.)
4	Compressive Strength	ASTM D 695	MPa	85 (Min.)	ASTM D 695	MPa	80 (Min.)
5	Izod Impact Strength (Notch)	ASTM D 256	Joules/m	25 (Min.)	ASTM D 256 Type A	kJ/m <sup>2</sup>	0.94 (Min.)
6	Elongation at Break	ASTM D 638	%	70 (Min.)	ASTM D 638	%	6 (Min.)
7	Melting Point	ASTM D 789	°C	200 (Min.)	ASTM D 789	°C	220 (Min.)
8	Flexural Modulus	ASTM D 790	MPa	2700 (Min.)	ASTM D 790	MPa	3200 (Min.)
9	Water Absorption at 23°C temperature after 24hrs. immersion	ASTM D 570	%	0.6 (Max.)	ASTM D 570	%	0.1 (Max.)
10	Coefficient of Friction	-	-	0.15 (Max.)	PTM 55007	psi-lpm	0.12-0.19
11	Compression Set at 80±1°C for 24(+0/-2) hours	ASTM D 395	%	45 (Max.)	ASTM D 395	%	15 (Max.)
12	Wear Rate	ASTM G 99	μm <sup>3</sup> /km	10-12	ASTM G 99	μm <sup>3</sup> /km	3-5

4	-	RECTANGULAR SLEEVE	8	SEE TABLE	
3	-	DOWEL	4	STEEL	IS:2062
2	-	PIN GUIDE	4	STEEL	IS:2062
1	-	PISTON	4	SEE TABLE	
	R 223/002	PISTON ASS'LY.	4	-	-
REF. NO	C&D NO	PART DRG. NO	DESCRIPTION	NO/LOCO	MATL. SPECN. WT. EACH IN KG.
DRAWN			REF. ASS'LY DRG. NO		CHITTARANJAN LOCOMOTIVE WORKS
CHECKED			03/11/15/47 REF. 8		
SSE					
AME (D)					
DY.CEE (D)			<b>PISTON ASS'LY</b>	USED FOR LOCOS	<b>NAM 1 &amp; WAP 4.</b>
DATE					DRAWING NO. <b>03/2/16/2</b>
SCALE	NTS		(FOR BOLSTER FRICTION DEVICE)		
APPROVAL REF.					
R.D.S.O DRG. NO.					
29.04.06 ALT 6					

ALT. NO	AUTHY	DESCRIPTION	DATED INITIAL	SURFACE ROUGHNESS VALUE TO IS: 3073	GRADE NUMBER	BROUGHT UP TO DATE AS PER RDSO LETTER NO SV. ALTERATION DT. 22.05.2009.											
						N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12
						Ra/1μm	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.4	12.5	25
						SYMBOL											