

Laboratory	Labs & Testing Section, R & D Centre for Bicycle & Sewing Machine, B-38-39, Phase-V, Focal Point, Ludhiana, Punjab		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	19.11.2014
Certificate Number	T-1054	Valid Until	18.11.2016
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	METALS & ALLOYS			
1.	Cast Iron Malleable cast Iron Nodular cast Iron	Carbon Sulphur Phosphorous Silicon Manganese Nickel	ASTM E1999: 1999	2.0 % to 3.8% 0.03% to 0.16% 0.01% to 0.2% 0.5 % to 2.8% 0.02% to 1.2% 0.05% to 0.1%
2.	High Manganese Steel	Carbon Manganese Phosphorous Sulphur Silicon Nickel Chromium Molybdenum	SOP-SPEC-01: 2014	0.7% to 1.45% 8.8% to 19.5% 0.03% to 0.045% 0.01 % to 0.08% 0.25 % to 1.41% 0.5 % to 1.4% 0.25 % to 3.9% 0.02 % to 2.0%
3.	Stainless Steels	Carbon Sulphur Phosphorous Silicon Manganese Nickel Chromium Molybdenum Titanium Vanadium	ASTM E1086-94 (RA 2000) IS-9879-1998	0.03 % to 0.10% 0.01 % to 0.03% 0.025% to 0.03% 0.35 % to 1.28% 0.4 % to 1.8% 4.5% to 35.5% 11.8 % to 24.5% 0.15% to 1.4% 0.15 % to 0.48% 0.06 % to 0.14%

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4.	Tool Steel	Carbon Sulphur Phosphorous Manganese Chromium Vanadium Molybdenum Cobalt Tungsten	ASTM E1086-1994 (RA 2000) IS 9879: 1998	0.7% to 1.05% 0.02% to 0.04% 0.025% to 0.045% 0.2% to 0.4% 3.0% to 5.0% 0.25% to 1.8% 0.25% to 9.4% 0.1% to 8.0% 2.0% to 20.4
5.	Brass & Bronze	Copper Tin Lead Zinc Nickel Phosphorous Iron Silicon Manganese Aluminum	SOP-SPEC-02: 2014	58.0% to 83.0% 0.1% to 10.3% 0.2% to 10.6% 0.2% to 38.4% 0.1% to 1.9% 0.025% to 0.13% 0.05% to 2.0% 0.02% to 0.16% 0.1 % to 0.77% 1.7 % to 6.9%
6.	Low Alloy Steels	Carbon Sulphur Phosphorous Silicon Manganese Nickel Chromium Molybdenum	IS 8811: 1998	0.02 % to 1.00% 0.01 % to 0.07% 0.01 % to 0.07% 0.02 % to 2.05% 0.101% to 2.0% 0.101 % to 3.50% 0.101% to 1.50% 0.05% to 0.500%

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Low Alloy Steels	Aluminium		0.005% to 0.70%
		Vanadium		0.02% to 0.30%
		Copper		0.02 % to 0.50%
		Boron		0.0008% to 0.01%
7.	Aluminium Alloy	Copper	ASTM E1251: 1994	0.05 % to 9.9%
		Magnesium	Reapproved 1999	0.06 % to 10.3%
		Iron		0.2% to 1.05%
		Silicon		0.1 % to 13.3%
		Manganese		0.1 % to 0.75%
		Nickel		0.05 % to 2.1%
		Zinc		0.05 % to 7.55%
		Titanium		0.03% to 0.2%
		Lead		0.06 % to 0.22%
		Tin		0.06 % to 0.2%

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