VE COMMERCIAL VEHICLES
A VOLVO GROUP AND EICHER MOTORS JOINT VENTURE

CATERPILLAR®
TODAY'S WORK. TOMORROW'S WORLD.™

Format No:- AP04:460:10CAT

METALLURGICAL TEST REPORT

Report No:- U2F61806075

Customer	CATERPILLAR	Date	2018-06-25 00:23:54
Cust Part Id	187-8980	Batch Code	E2F18742
EECD Part No.	31114	Qty	85
Part Name	GEAR - LG CLUSTER	Material	1E1120A
Steel Mill		Heat No.	

S.No	Parameters	Location	Specification	Observation			Remark
1.	Effective Case Depth in mm	X=3.8	0.50-1.0	-			OK
		C	0.30 MIN.	0.64	-		OK
							OK
2.	Hardness in HRC	AT 1mm Depth loc X	30 MIN, HRC	-			OK
3.	Core Hardness in HRC	B	25-48	44			OK
		D	48 MAX	39			OK
							OK
4.	Surface Hardness after final grinding in HRC	AT GROUND BORE	50 MIN,	-			OK
5.	Surface Hardness in HRC	AT 0.1MM DEPTH AT LOC X	77 MIN.HR30N	79			OK
6.	Surface Bainite	X	B1 Acceptable B2 Borderline	B1			OK
		C	B7 Acceptable (0.02mm max depth)	B6			OK
7.	Sub Surface Bainite	X	BB3 Borderline	BB2			OK
		C	BB5 Boederline	BB4			OK
8.	Grain Boundary Oxidation	X	O2 Acceptable O3 Boarderlone	O1			OK
9.	Dark etched Microstructure Retained Austenite	X	A3 ACCEPTABLE,A4 REJECTABLE	A1-A1			OK
	Carbides	X	DC1 borderline	DC0			OK
	Decarb	X	D1 Borderline	D0			OK
	Core Ferrite	D	F5 Acceptable	F2-3			OK

Remark	Burn test done on two part No grinding burn seen. OK

Micro Photographs Magnification : 500 X	
Surface Bainite Loc-X	Surface Bainite Loc-C
Case Microstructure Loc-X	Core Microstructue Loc-D

Checked by :-	Dharmendra Rathore	Verified by : -	Aditya mishra	Approved by :-	Ravindra kale