

										Format No:- AP04:460:10Z																			
MATERIAL LABORATORY REPORT																													
Report No : U2F51804094																													
Part No/Part ID: 800 / 1324304005					Part Name: MAIN SHAFT					Date: 2018-04-28																			
Qty: -					Customer: ZF					Batch Code: E2D18661																			
1) Raw Material : ZF7B					Heat No: 24KM4					Steel Code: U575																			
1.1 Chemistry																													
Elements (%) →										C	Mn	S	P	Si	Ni	Cr	Mo	V	Al	B	Cu								
Min										0.15	1.10	0.020				1.0			0.028										
Max										0.20	1.40	0.035	0.025 MAX	0.30 MAX	0.30 MAX	1.30 MAX	0.080 MAX	0.003 9	0.050	-	0.30 MAX								
Observation										0.18	1.23	0.02	0.02	0.22	0.06	1.06	-	-	0.02	-	0.06								
2) Heat Treatment: Case carburised, hardened & tempered																													
<p style="text-align: center;">HARDNESS TRAVERSE GRAPH</p>										2.1 Hardness																			
										Location					Specification					Observation									
										SURFACE					59-63 HRC					61									
										AT Machine area					59 min. HRC					60									
										CORE AT RCD ?265HBW/ (27HRC) Min (5MM BELOW SURFACE)					265 MIN, HBW					362									
2.2 Effective Case Depth @ 610HV1																													
Location					Specification (mm)					Observation (mm)																			
At Spline RCD					0.60-1.0					1.0																			
										-																			
AT FINISH MACHINE AREA					0.60 MIN.					0.94																			
2.3 Hardness traverse report																													
Distance from surface in mm	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0									
PCD																													
RCD	767	758	731					650	634	610	575																		
B/G OD	755	734	720						624	589																			
2.4 Microstructure:																													
Location										Specification										Observation									
CASE										Tempered Martensite with 5 - 30 % RA										T.M+R.A.5-10%									
Carbides Network										Nil																			
CORE										Low carbon Martensite + Bainite Low carbon Martensite + Bainite Low carbon Martensite + Bainite Low carbon Martensite + Bainite										L.C.M+Bainite									
IGO- RCD										<20										18									
Disposition:- ACCEPTED																													
Remarks :- OK																													
Checked by :- Jai narayan					Verified by :- Rajvardhan gautam					Approved by :- Ravindra kale																			