


TEST CERTIFICATE

(EN 10204-3.1)

QMS/LAB(MET)/F/05
REV. No.: 02

Customer:- UNIQUE FORGINGS (INDIA) PVT.LTD		TC No.:- 038199		Date:- 12.05.2019		Invoice No. 541901000					
P.O. No.:- Email		P.O Date:- 04.05.2019		Process Route		Input Bloom size 8:1 min					
Sale Ord No.:- 9813012027		S.O. Date:- 06.05.2019		EAF/LRF/VDC/CCP/EMS/RM		262 MM OCT 8.63:1					
Heat No. R 29178		Grade SAE 8620H		Section (mm) 75 RCS		Qty (MT.) 27.200					
				Supply condition AS ROLLED		Colour code ORANGE+WHITE+ORANGE					
CHEMICAL ANALYSIS (ASTM E-415-14), IS 8811-1998											
ELEMENTS%	C	Mn	Si	S	P	Cr	Ni	Mo	Al	Cu	Ca
Min.	0.18	0.65	0.15	-	-	0.35	0.35	0.15	0.020	-	-
Max.	0.23	0.95	0.30	0.040	0.035	0.65	0.75	0.25	0.060	-	-
Ladle Analysis	0.19	0.85	0.22	0.025	0.013	0.56	0.42	0.20	0.026	0.16	0.0009
OTHER ELEMENTS				GAS LEVELS							
				O2 ppm N2 ppm H2 ppm							
Min				-							
Max				20.0 90.0 2.0							
Ladle Analysis				7.6 60.0 1.62							
MECHANICAL PROPERTIES: (ASTM A 370)								Test Condition :-			
		UTS (Kg/mm ²)		Y.S. (Kg/mm ²)		%EL		%RA		Impact Strength	
Min		-		-		-		-		-	
Max		-		-		-		-		-	
Act. value		-		-		-		-		-	
METALLURGICAL PROPERTIES & PHYSICAL INSPECTION :											
Inclusion Rating (ASTM E45, Method "A")					Grain Size		Decarb (mm)		Macro test (ASTM E381)		
		A	B	C	D	(ASTM E112)					
Spec.		2.5/1.5	1.5/-	1.5/-	1.5/-	6 -7		0.10		C2 R2 S2	
Thin/Thick		2.0/1.0	0.5/-	-	1.0/-						
Spark & Spectral Test : 100% OK											
Surface Inspection : 100% MPI done & found Satisfactory											
Ultrasonic Test : 100% done, Satisfactory (As per ASTM A 388)											
Supply Hardness SPEC. : 240 BHN max											
ACTUAL : 172 - 174 BHN											
JOMINY HARDENABILITY :-(ASTM A-255 /SAE J406 /IS : 3848)											
DIST IN INCH :		J4/16									
Spec. (HRC) :		34/37									
ACTUAL HRC :		36									
Material specification :- TDC : As per Jominy given in S.O.											
Remark :- We here certified that the material shipped under this test certificate did not come in direct contact with any mercury, cadmium hexavalent chromium containing devices, Free from radioactive contamination employing a single boundary of containment during the manufacturing process, tests, inspection & storage.											
Distribution : (1) Party				(2) MARKETING				(3) Q/C			
										 Authorised Signatory	