PROJECT NAME : P-1

VE COMMERCIAL VEHICLES LIMITED.
(UNIT:EICHER ENGINEERING COMPONENTS;DEWAS)UNIT:–II

CONTROL PLAN

PREV. OPN.	NEXT. OPN.	SURFACE FINISH :	DOC. NO. :
70 - PRE HT INSPECTION	90 - TEETH CHAMFERING		AP04 : 160 : 20 REV-01 (DATE-05.10.17)

CONTROL PLAN NO : 2473 / 80

LOCATION → REST →→ CLAMP —N→ SPL.CHAR. (CRITICAL DIMN.) Ⓑ EECD ◇ CUSTOMER.

REVISION: A1 A2 A3

EFF DATE	30.08.2016	EFF DATE	30.08.2016	EFF DATE	
PROTOTYPE	✓	PRELAUNCH	✓	PRODN	
O.E.	✓	EXPORT			

KEY CONTACT PERSON :- S. KOMULWAD

CORE TEAM :- SK, LEVA, SRS, IDS, MM, KUNAL, MJ, VSG

PART NO.	ED 2473 (575431 / c)
PART NAME	GEAR, 5TH DRIVE — OPN. NO. 80
CUSTOMER	ROYAL ENFIELD
OPERATION	* HEAT - TREATMENT

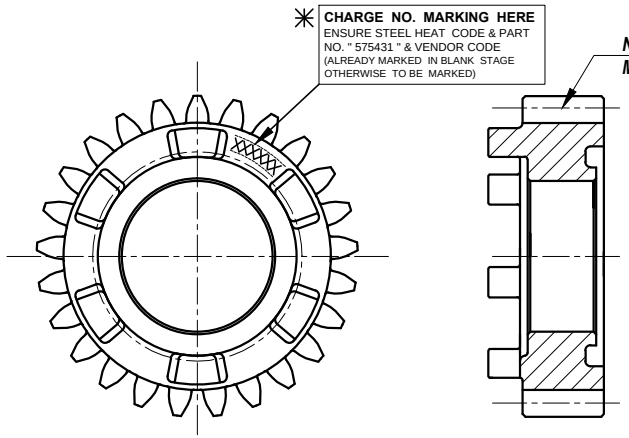
CELL [OPTIONAL]	M./C.	M / C NO. [OPTIONAL]
	S.Q.F.	

FIXTURE	FIX. NO.	TOOL	NO.

MATERIAL - : SAE 8620H
COMP. WT - : 0.23 Kg. A2

*** HEAT-TREATMENT- :**

✳ MARKING ;
PRE-WASHING ;
PRE-HEATING ;
CARBURISING ;
HARDENING ;
POST-WASHING ;
TEETH CHAMFERING ;
SHOT BLASTING ;



✡

SURFACE HARDNESS	CORE HARDNESS	EFFECTIVE CASE DEPTH		MICROSTRUCTURE	
ALL AREA	AT RCD (MIDDLE OF TEETH)	AT PCD A3		CASE	CORE
58 ~ 62 HRC (TARGET 60 - 62 HRC) A1 A3	330 ~ 480 HV1 A1	PROCESS REQUIRED	0.75 ~ 0.95 mm CUT OFF 513 HV1 (TARGET 0.8-0.85mm)	FINE TEMPERED MARTENSITE + RA <10% AND FREE FROM CARBIDES GBO<20 micron.	LOW CARBON MARTENSITE + BAINITE
		FINAL REQUIRED	0.65 ~ 0.95 mm CUT OFF 513 HV1		

NOTE:- 1) GROUND SURFACE : HARDNESS @ 0.1mm SHALL BE 650 HV MIN.

SR. NO.	CHARACTERISTICS PRODUCT	CHARACTERISTICS PROCESS	SPL CHAR CLASS	PRODUCT SPECIFICATIONS	EVALUATION MEASUREMENT TECHNIQUE INSTRUMENT	NO.	SAMPLING SIZE	SAMPLING FREQ	RESP.	CONTROL METHOD	CORRECTIVE ACTION / REACTION PLAN
1.	EFF. CASE DEPTH		Ⓑ	✡ REFER ABOVE TABLE	MICRO-HARDNESS TESTER	---	1 PC	PER CHARGE	~ INSPTR.	TESTING	CHECK FURNACE SETTING DATA & CONFIRM FOR CORRECTNESS
2.	SURFACE HARDNESS				HARDNESS TESTER	---	5 PC	PER CHARGE	~ INSPTR.		
3.	CORE HARDNESS					---	1 PC	PER CHARGE	~ INSPTR.		
4.	MICROSTRUCTURE		Ⓑ		MICROSCOPE	---	1 PC	PER CHARGE	~ INSPTR.		
						---	1 PC	PER CHARGE	~ INSPTR.		
5.	SHOT BLAST			FREE FROM RUST & SCALE	VISUAL	---	100%	PER CHARGE	~ INSPTR.		

FOR REFERENCE ONLY

D	E	F
A1 SURFACE HARDNESS 80-84 HRA WAS 80-83 HRA & CORE HARDNESS 330-480 HV1 WAS 300-450 HV1 AS PER CUSTOMER'S LATEST DRAWING REV.b. BY-VSG DT-19.07.17	A2 MATERIAL SCM 420 REMOVED REVISED AS PER CUST'S LATEST DRG. REV.-c. BY-VSG, DT-13.12.17.	A3 SURFACE HARDNESS 58 - 62 HRC WAS 80 - 84 HRA & ECD 0.65-0.95 MM WAS 0.6-0.9 MM REVISED AS PER DCR NO.-1115 DT-29.01.18. BY-VSG, DT-29.01.18.

DRN BY	VIJAY S GIRI	CHKD BY	R. PATHAK	APRD BY	B.LEVA	PAGE 01 / 02

UNSPECIFIED TOLERANCES AS PER IS : 2102 (PART-1) : 1993 MEDIUM CLASS. | ALL DIMENSIONS ARE IN MILLIMETERS. | DO NOT SCALE, IF IN DOUBT, PLEASE ASK. | BREAK SHARP CORNERS.