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	85 - DEBURR TEETH		AP04 : 160 : 20

CONTROL PLAN NO : 2434 / 080

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

EFF DATE	28.08.2014	EFF DATE	~~03.01.15~~ 06.07.15	EFF DATE	22.12.15
PROTOTYPE	✓	PRELAUNCH	✓	PRODN	✓
O.E.	✓	EXPORT			

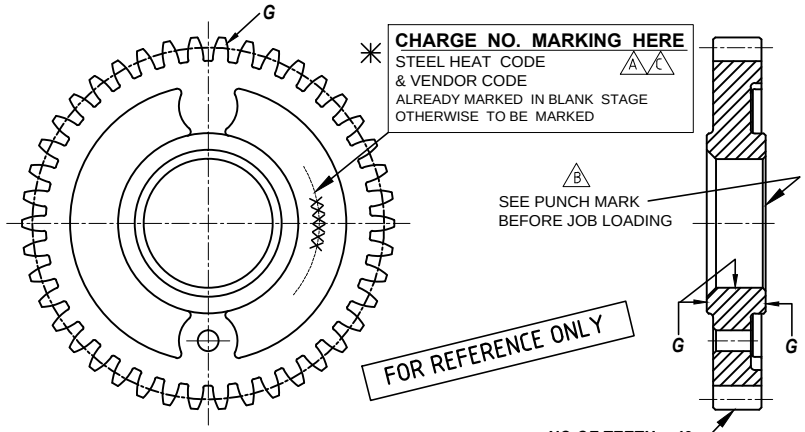
PART NO.	ED 2434 (574092)
PART NAME	GEAR, CRANK BALANCER DRIVE — OPN. NO. 080
CUSTOMER	ROYAL ENFIELD
OPERATION	* HEAT - TREATMENT

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

FIXTURE	FIX. NO.	TOOL	NO.
AVAILABLE AT H.T			

MATERIAL - : 16MnCr5
COMP. WT - : 0.35 Kg.

*** HEAT-TREATMENT- :**
✳ MARKING ;
PRE-WASHING ;
PRE-HEATING ;
CARBURISING ;
HARDENING ;
POST-WASHING ;
TEMPERING ;
GRATOMATE CHAMFER ;
SHOT BLASTING ;



NO OF TEETH :- 42
MODULE :- 2.0

GROUND SURFACE - BORE, BOTH OUTER FACES & GEAR TEETH, AS MENTIONED WITH 'G'.

SURFACE HARDNESS	CORE HARDNESS	EFFECTIVE CASE DEPTH *		MICROSTRUCTURE	
ALL AREA	AT RCD	UNGROUND AREA	AT PCD AFTER GEAR GRINDING	CASE	CORE
80 ~ 83 HRA	300 ~ 450 HV1	0.6 ~ 0.9 mm CUT OFF 513 HV1 (E)	0.5 ~ 0.8 mm CUT OFF 513 HV1 (E)(D)	FINE TEMPERED MARTENSITE + RA <10% AND FREE FROM CARBIDES GBO<20 micron	LOW CARBON MARTENSITE + BAINITE

NOTE:- 1) GROUND SURFACE :- HARDNESS AT 0.1MM SHALL BE 650 HV MIN.

* PLEASE NOTE, GEAR TEETH WOULD BE FURTHER GRIND.

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

REVISION

A	B	C
(A) ADDED MAKING DETAILS , MW 19.05.15	(B) ADDED PUNCH MARK, CHANGE AS PER CUST'S LATEST DRG. REV-e , MW 04.07.15	(C) REMOVED PART NO. MARKING AS PER REVISED BLANK DRG. REV-C
(D) ADDED MIN ECD AS PER DISCUSSION WITH CUST'S. (MAIL TO CUST. DATED -25.09.15) (DATE - 03.10.15) DIGPAL	(E) ECD AT PCD ADDED & TEMPERING TEMPRATURE RELATED NOTE. REMOVED AS PER CUST'S LATEST PART DRG REV. (e). (MUKESH 21.12.15)	

DRN BY	DIGPAL	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.