

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

CONTROL PLAN

SURFACE FINISH : EECD DOC. NO. : APO4 : 160 : 20

CONTROL PLAN NO : 5440 / 110			
EFF DATE	19.09.15	EFF DATE	
PROTOTYPE	<input checked="" type="checkbox"/>	PRELAUNCH	
O.E.	<input checked="" type="checkbox"/>	EXPORT	
PART NO.	ED 5440 (832 353 02 10)		
PART NAME	PINION	OPN. NO.	110
CUSTOMER	FORCE MOTORS		
OPERATION	* HEAT TREATMENT		
CELL [OPTIONAL]	M/C. CGCF & SHOT BLASTING	M / C NO. [OPTIONAL]	--

LOCATION →

REST →

CLAMP — N →

SPL.CHAR.
(CRITICAL DIMN.)

EECD

CUSTOMER'S

REVISION

MATERIAL : 25MoCr4E
MODULE : 4.886
WEIGHT : 2.1

* HEAT TREATMENT

PUNCHING ;
PRE-WASHING ;
PRE-HEATING ;
HEATING ;
CARBURISING ;
OIL QUENCHING ;
POST-WASHING ;
TEMPERING ;
SHOT BLASTING ;

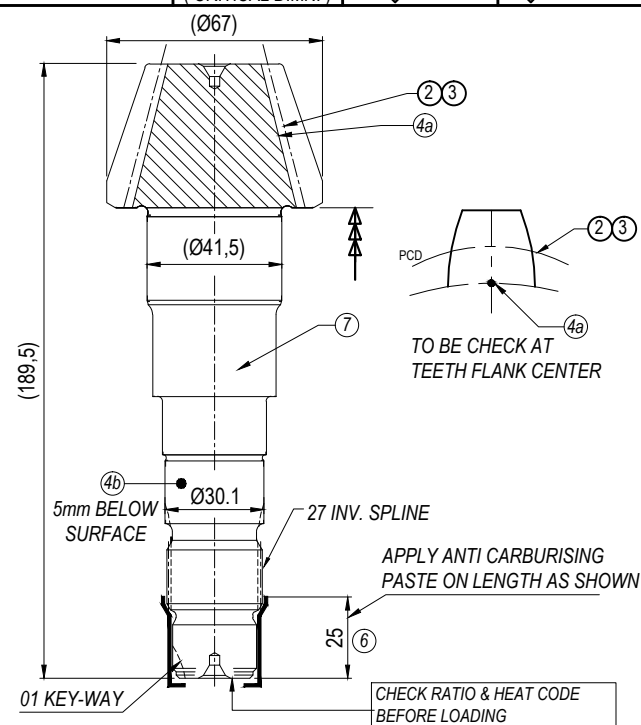
MICROSTRUCTURE

CASE -
FINE TEMPERED MARTENSITE,
FREE FROM CARBIDE NETWORK,
R.A. 5% MAX.
GBO 10µ MAX.

CORE -
BAINITE + TEMPERED MARTENSITE,
FREE FROM FERRITE

NOTE:-

- 1.HARDNESS SHOULD BE CHECKED, BOTH BEFORE & AFTER GRINDING
2. MAINTAIN RECORDS OF ALL H.T. PROCESS DONE.
3. FOR INITIAL DEVELOPMENT / LOTS. TEMP / TIME / CP GRAPH - DATA TO BE SUBMITTED.



SR. NO.	CHARACTERISTIC		SPL CHAR CLASS	PRODUCT / PROCESS SPECIFICATIONS	EVALUATION MEASUREMENT TECHNIQUE		SAMPLING		CONTROL METHOD	CORECTIVE ACTION / REACTION PLAN
	PRODUCT	PROCESS			INSTRUMENT	NO.	SIZE	FREQ.		
1.	SURFACE HARDNESS AT TEETH TOP			59 ~ 63 HRC	HARDNESS TESTER		5 PC	LOT	ON LINE AUTO CONTROL (CGCF)	CHECK FURNACE SETTING DATA & CONFIRM FOR CORRECTNESS
2.	SKIN HARDNESS AT FLANK AT 0.05mm BELOW SURFACE			700 Hv. MIN.	MICRO-HARDNESS TESTER		1 PC	LOT		
3.	CASE DEPTH AT PCD (CHECK AT FLANK CENTER)		◇	0.8 ~ 1.1 mm AT 550 Hv 1						
4a	CORE	AT R.C.D.		325 ~ 440 BHN (36 ~ 44 HRC)	HARDNESS TESTER	BHN ø2.5mm BALL 187.5 kg LOAD				
4b	HARDNESS	AT Ø 30.1 (1/3 R mm BELOW)					280 BHN MIN.			
5.	MICROSTRUCTURE #			MENTIONED ABOVE	MICROSCOPE		1 PC	LOT		
6.	HARDNESS AT SOFTENING ZONE (25mm)			40 ~ 50 HRC	HARDNESS TESTER		5 PC	LOT		
7.	DOT PUNCHING			H.T. BATCH CODE	DOT PUNCHING M/C.		100%			
8.	SHOT BLAST			FREE FROM RUST & SCALE	VISUAL		1 PC	LOT		

DRN BY

MW

CHKD BY

SDP

APRD BY

B. LEVA

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