

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

CONTROL PLAN

SURFACE FINISH :

DOC. NO. :

APO4 : 160 : 20

CONTROL PLAN NO : 5460 / 110

LOCATION →

REST →

CLAMP — N →

SPL.CHAR.
(CRITICAL DIMN.)



EECD



CUSTOMER'S

REVISION

EFF DATE	19.09.15	EFF DATE		EFF DATE	
PROTOTYPE	✓	PRELAUNCH		PRODN	
O.E.	✓	EXPORT			
PART NO.	ED 5460 (YT 686 353 05 10)				
PART NAME	PINION		OPN. NO.	110	
CUSTOMER	FORCE MOTORS				
OPERATION	* HEAT TREATMENT				
CELL [OPTIONAL]	M/C. CGCF & SHOT BLASTING		M / C NO. [OPTIONAL] --		

MATERIAL : 25MoCr4E
MODULE : 6.114
WEIGHT : 2.2

* HEAT TREATMENT

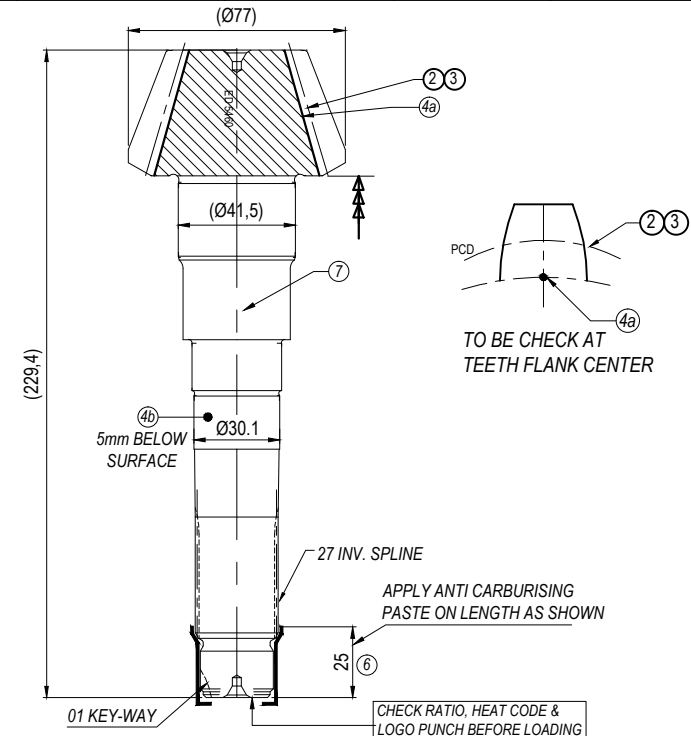
PUNCHING ;
PRE-WASHING ;
PRE-HEATING ;
HEATING ;
CARBURISING ;
OIL QUENCHING ;
POST-WASHING ;
TEMPERING ;
SHOT BLASTING ;

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
2. AFTER FINISHING OF ALL H.T. PROCESS
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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