

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

CONTROL PLAN

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

CONTROL PLAN NO : 5441 / 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 5441 (602-353 52 12)				
PART NAME	CROWN WHEEL (9 X 44)			OPN. NO.	110
CUSTOMER	FORCE MOTORS				
OPERATION	* HEAT TREATMENT				
CELL [OPTIONAL]	M/C. CGCF & PRESS QUENCHING			M / C NO. [OPTIONAL]	

MATERIAL : 25MoCr4E
MODULE : 4.886
WEIGHT : 5 Kg.

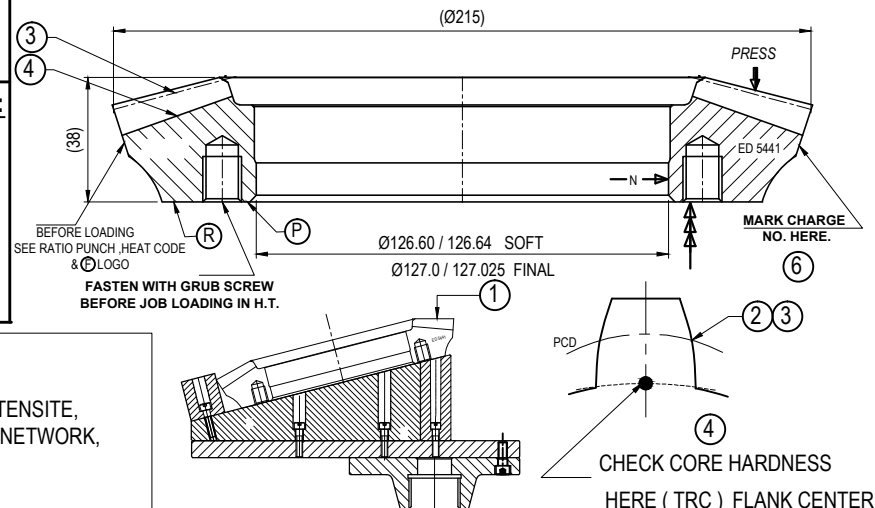
* HEAT-TREATMENT :

PUNCHING ;
PRE-WASHING ;
PRE-HEATING ;
HEATING ;
CARBURISING ;
PRESS QUENCHING ;
POST-WASHING ;
TEMPERING ;

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 ON FIXTURE AT THREE LOCATIONS.
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 SURFACE			59 ~ 63 HRC	HARDNESS TESTER & ANGLE PLATE	G. 156-007	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						
4.	CORE HARDNESS AT RCD (CHECK AT FLANK CENTER)			325 ~ 440 BHN (36 ~ 44 HRC)	HARDNESS TESTER	BHN ø2.5mm BALL 187.5 kg LOAD				
5.	MICROSTRUCTURE #		MENTIONED ABOVE	MICROSCOPE		1 PC	LOT			
6.	PUNCHING			H.T. BATCH CODE	MANUAL PUNCHING		100%			
7.	GRUB SCREW FASTENING ON 10 NOS. TAPPED HOLE			M12 X 1 GRUB SCREW	MANUALLY		100%			
8.	SHOT BLAST			TAPPED HOLE SHOULD BE FREE OF STEEL SHOTS AND DUST	VISUAL		1 PC	LOT		
9.	BACK FACE FLATNESS			0.05 AT 'R' & 0.075 AT 'P', (FILLER SHOULD NOT ENTER)	SURFACE PLATE	STD.	EVERY 10th COMP.			
					FILLER GAUGE	STD. 0.05- 0.075 mm				

DRN BY

M.W.

CHKD BY

S.D.P.

APRD BY

B. LEVA

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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.