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 - CENTER LAPPING		AP04 : 160 : 20

CONTROL PLAN NO : 2453 / 80

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

EFF DATE	03.10.15	EFF DATE	03.10.15	EFF DATE	08.01.16
PROTOTYPE	✓	PRELAUNCH	✓	PRODN	✓
O.E.	✓	EXPORT			

PART NO.	***ED 2453*** *(574613 / b)*		
PART NAME	***SHAFT, COUNTER***	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 - : 16MnCr5

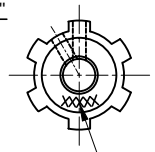
COMP. WT - : 0.59 Kg.

*** HEAT-TREATMENT- :**
MARKING ;
PRE-WASHING ;
PRE-HEATING ;
CARBURISING ;
HARDENING ;
POST-WASHING ;
SHOT BLASTING ;

CENTRE LAPPING ;
TEETH CHAMFERING ;
STRAIGHTNING ; #

NOTE :-
SEPARATE CONTROL PLANS AVAILABLE.

END VIEW "P"

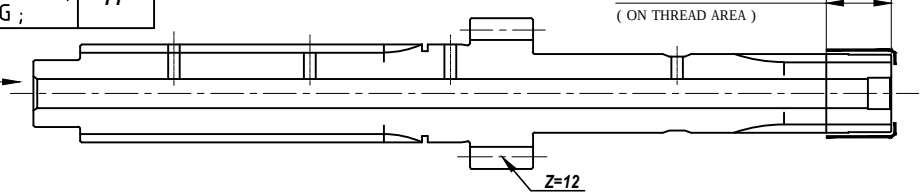


MARK CHARGE NO. HERE

FOR REFERENCE ONLY

APPLY STOP OFF PASTE HERE (ON THREAD AREA) "X"=15.0

VIEW "P"



Z=12

NOTE:

1. APPLY STOP OFF PASTE / ANTICARB PASTE IN THE AREA SHOWN " X " (15 mm)

SURFACE HARDNESS	CORE HARDNESS	EFFECTIVE CASE DEPTH	MICROSTRUCTURE		THREAD AREA HARDNESS
ALL AREA	***AT RCD***	***AT PCD***	***CASE***	***CORE***	***AT ROOT 0.2 mm DEPTH*** THREAD ROOT DEPTH
80-83 HRA	***300-450 HV1***	***0.6-0.9 mm CUT OFF 513 HV1***	***FINE TEMPERED MARTENSITE + RA <10% AND FREE FROM CARBIDES GBO<20 micron***	***LOW CARBON MARTENSITE + BAINITE***	***300-450 HV1*** (AFTER THREADING)

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

REVISION	
A	TEMPERING 160 – 200°C WAS 160°C CHANGED AS PER NEW CUST'S PART DRG. (MUKESH 15.10.15)
B	TEMPERING TEMPRATURE RELATED NOTE. REMOVED AS PER CUST'S LATEST PART DRG REV. (0). (MUKESH 21.12.15)
C	SHOT BLASTING TIME ADDED AS PER DCR NO. 834 (13.09.16)... (VAISHALI- 13.09.16)

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*		
5.	*HARDNESS ON THREAD AREA " X "*				*HARDNESS TESTER*	---	*1 PC*	*PER CHARGE*		
6A.	*SHOT BLAST*			*FREE FROM RUST & SCALE*	*VISUAL*	---	*100%*			
6B.		C *SHOT BLAS-TING TIME*		*5 MIN MAX.*	*SET-UP ON M/C*	---	*EVERY BATCH*			

DRN BY	*VAISHALI*		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.*