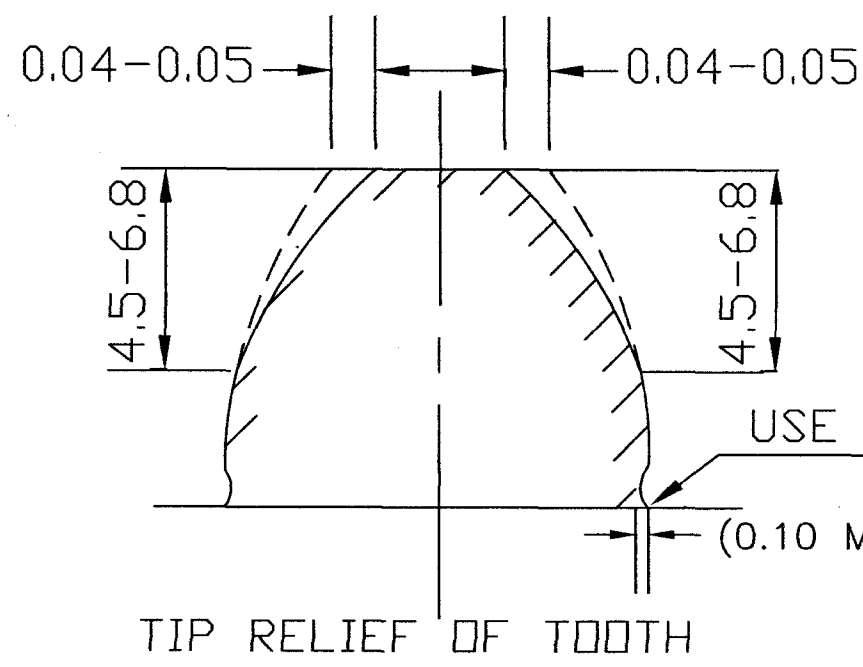
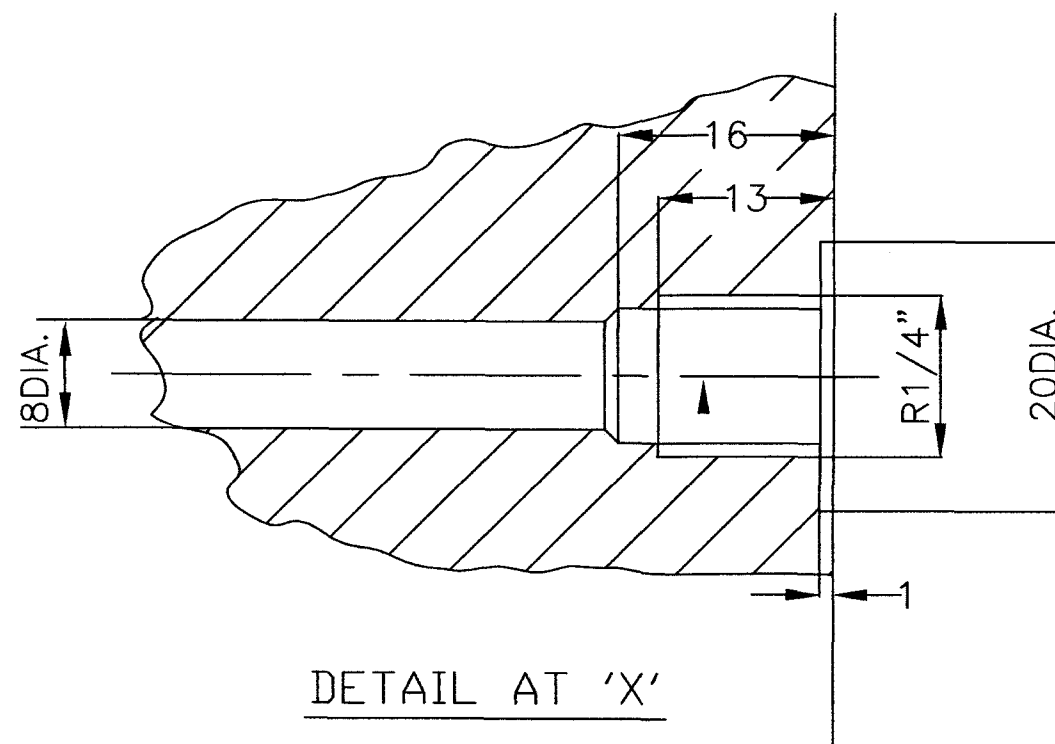
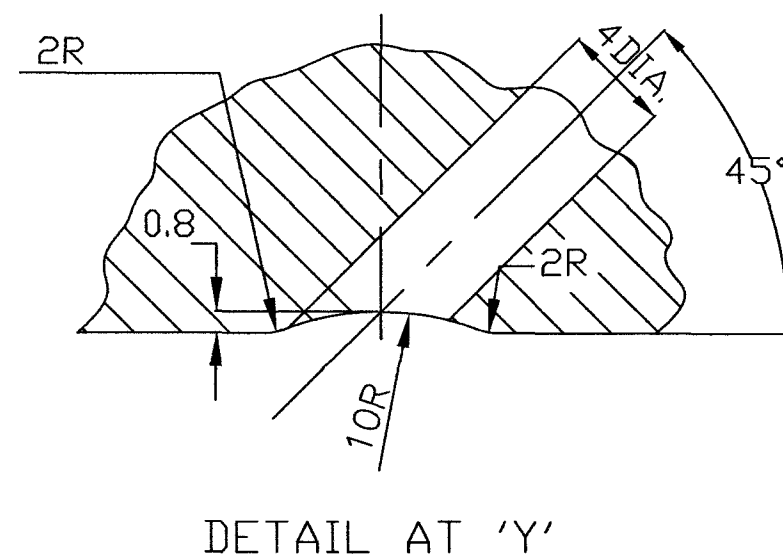
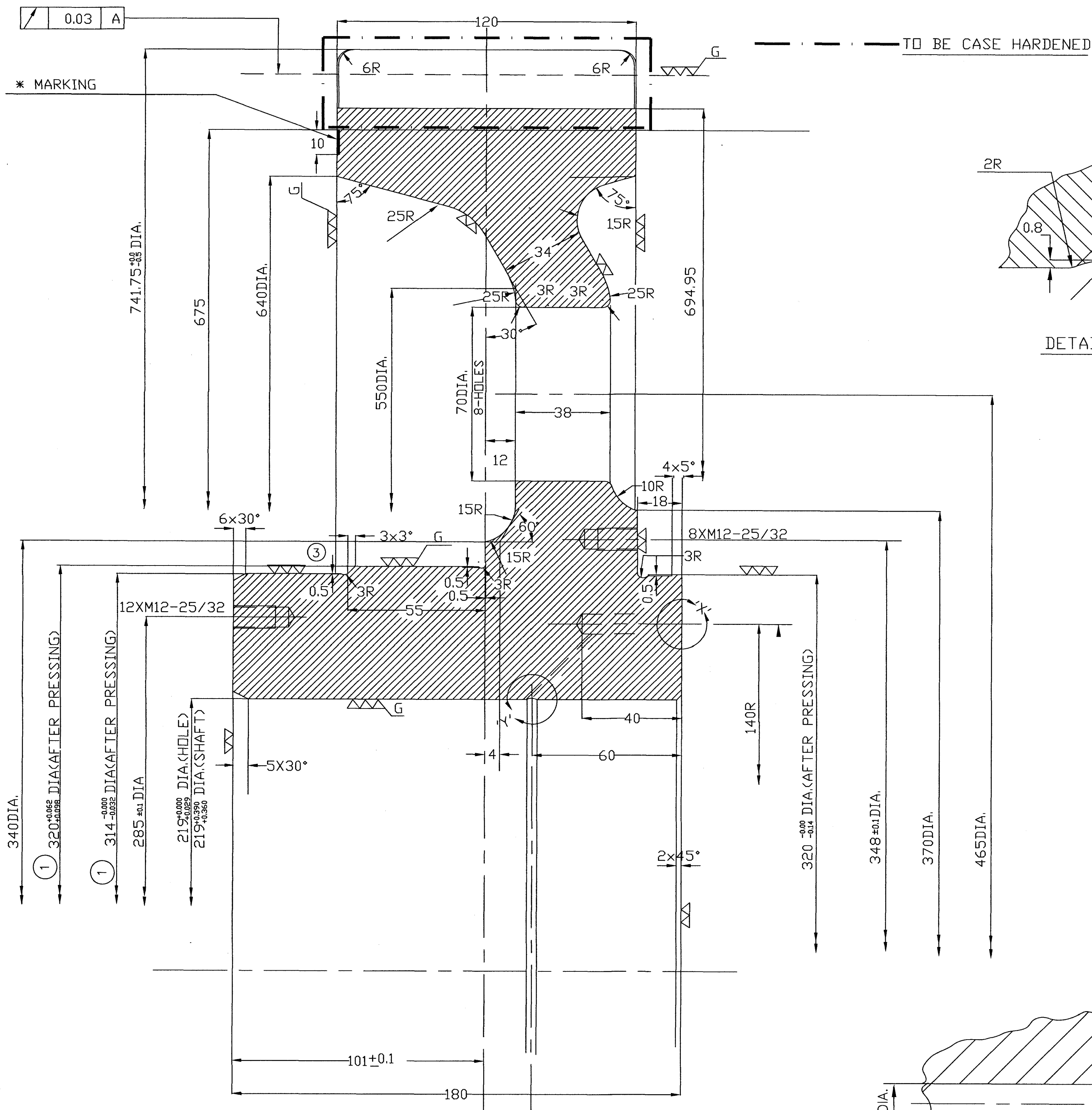


D R.P.SAHAI  
T C.AK.BRAMHANE  
APPD.  
Sd/-  
Vivek Khare  
Dt 01-03-99

~	50	
▽	25	
▽▽	6.3	
▽▽▽	0.8	* SURFACE ROUGHNESS TO IS:3073
▽▽▽▽	0.1	WELDING SYMBOLS TO IS:813
SYMBOL	Raum (MAX.)	TOLERANCES ON UNTOLERANCED DIMENSIONS TO IS:2102 (MEDIUM)

ALT.	NO. OF PLACES	REF. NO.	DESCRIPTION	ALT. NOTE NO.	SIGN.	DATE
④	2	-	DOUBLE FLANK TOTAL COMPOSITE ERROR $F_r' = 0.056$ DELETED, AT S.NO. 3, PARA REVISED.	L2-223	Sd/- Vivek Khare	13.06.19
③	1		RADIUS 3R AT THE STEP ON GEAR HUB IS ADDED.	L3-129		08.10.07
②	3		SPECIFICATION NO. MP.0.2800.19 (OCT 2005) WAS SPECIFICATION NO. MP. 0.2800.09 (DEC.1990) NOTE NO. 8,10,11,12, AND 13 ARE ADDED.	L3-88	S.Srinivas	03.10.05
①	1		$\phi 320^{+0.062}_{-0.098}$ WAS $\phi 320^{+0.062}_{-0.098}$ AFTER PRESSING	L3-506	S.MANI	7-7-99
	1		$\phi 314^{+0.062}_{-0.098}$ WAS $\phi 314^{+0.062}_{-0.098}$ AFTER PRESSING	L3-506	S.MANI	7-7-99



- GEAR PARTICULARS :-

BASIC RACK	DIN 867 & DIN 3960
NO. OF TEETH	72
MODULE (m)	10
PRESSURE ANGLE	20°
ANGLE OF HELIX	4°
DIRECTION OF HELIX	R.H.
DISPLACEMENT OF PROFILE (x.m)	0.05985
BASE TANGENT LENGTH OVER 9 TEETH	260.958 MIN./ 260.992 MAX.
TOOL FOR PROTOUBRANCE	REQUIRED
CENTRE DISTANCE	464
PITCH CIRCLE DIA (REF)	721.758
CLASS (ACCURACY GRADE)	7
NUMBER OF TEETH OF MATING PINION	20
DRAWING NO OF MATING PINION	SK.DP-3473
- DATA OF MATERIAL

MATERIAL - STEEL 17Cr Ni Mo6 TO DIN 17210
CASE HARDENED-- TEETH TO BE CASE HARDEND.
CASE BPTH AFTER GRINDING. : 1.8 TO 2.2 mm
SURFACE HARDNESS : 60 - 62 Rc
TEETH - GROUND
- FOR MATERIAL, MANUFACTURING & INSPECTION REF. TO RDSO SPECIFICATION NO. MP.0.2800.19 (LATEST REVISION).
- MARKING :

ALL GEARS SHALL BEAR THE FOLLOWING MARKINGS ON BOTH END FACES( BY PUNCHING OR BY ELECTRICAL ETCHING) ,WHICH SHOULD BE INDELIBLE AND CLEARLY LEGIBLE.

a) NAME OF SUPPLIER/MANUFACTURER.

b) NUMBER OF MONTH AND LAST TWO DIGITS OF THE YEAR OF MANUFACTURE  
e.g. 5/96, & GEAR RATIO.

c) MATERIAL AND SPECIFICATION OF STEEL.

d) DRAWING NUMBER OF THE PART.

e) MANUFACTURER/CONSECUTIVE NUMBER OF THE PART.
- ALL OVER UNLESS OTHERWISE STATED.
- G-GROUND AND B- HARDENED TEMPERED & GROUND
- MACHINING TOLERANCES OF THE GEARING TO DIN 3962 & 3967 OR 3963
- TOOTH TOLERANCES :-

DOUBLE FLANK TOTAL COMPOSITE ERROR	$F_r' = 0.056$
BASE PITCH ERROR	$f_{pe} = 0.016$
TOOTH TO TOOTH PITCH ERROR	$f_u = 0.020$
PROFILE ERROR	$f_f = 0.020$
RADIAL RUN OUT	$F_r = 0.050$
FLANK ANGLE ERROR	$f_{\theta} = 0.016$
- BACKLASH SHALL BE 0.254mm MIN. AND 0.458mm MAX.
- THE HUB OF THE WHEEL HAS TO REMAIN SOFT AFTER HARDENING.
- SHOT PEEN TEETH & ROOT SECTION OF TEETH BEFORE GRINDING TOOTH PROFILE. USING S330 HARD SHOT TO OBTAIN 200% MINIMUM COVERAGE IN ROOT AREA. PEENING INTENSITY 0.007-0.010 C.
- MAGNAFLUX INSPECT AS PER IS:3703
- AS PER QLT-11, CONDEMNING SERVICE LIMIT ON BASE TANGENT LENGTH OVER 9 TEETH = 260.451
- AFTER FORGING THE FOLLOWING PHYSICAL PROPERTIES ARE REQUIRED.

TENSIL STRENGTH(MIN.)	YIELD STRENGTH(MIN.)	FATIGUE STRENGTH(MIN.)	ELONGATION(MIN.)
1100MPa	780MPa	470MPa	8%

C	Si	Mn	Ni	Cr	Mo	S	P
0.15-0.20	0.40MAX.	0.40-0.60	1.40-1.70	1.50-1.80	0.25-0.35	0.035MAX.	0.035MAX.

REF. NO.	I.R. PART NO.	DESCRIPTION	NO. / WT.(kg) LOCO EACH	MATL.	SPEC.
		APPLICABLE FOR WAGS (PASSENGER VERSION) WAP 7			
		SCALE: 1:1&2:1 AND 4:1			
		INDIAN RLYS. R.D.S.O. (MP)	DRG. NO. SK. DP.-3474		
			ABB DRG. NO.1B011-00270.		FIRST ISSUED
					SUPERSEDES
					SUPERSEDED BY