

1. GEAR PARTICULARS :-

BASIC RACK	DIN - 867 & DIN 3960
NO. OF TEETH	21
MODULE (m)	7.20
PRESSURE ANGLE	24°
ANGLE OF HELIX	5.972°
DIRECTION OF HELIX	L.H.
ADDENDUM MODIFICATION COEFFICIENT (x)	0.283
BASE TANGENT LENGTH OVER 4 TEETH	77.53 MIN./ 77.58 MAX.
TOOL FOR PROTOUBRANCE	REQUIRED
CENTRE DISTANCE	464 <sup>+0.2</sup> <sub>-0.1</sub>
PITCH CIRCLE DIA (REF)	142.8
CLASS (ACCURACY GRADE)	6
NUMBER OF TEETH OF MATING GEAR	107
DRAWING NO OF MATING GEAR	SK.DP-3848

2.

DATA OF MATERIAL	
MATERIAL	STEEL 17 CrNi Mo6 TO DIN 17210
CASE HARDENED	TEETH TO BE CASE HARDEND.
CASE DEPTH AFTER GRINDING	1.8 TO 2.2 mm
SURFACE HARDNESS	60 - 62 Rc

3. FOR MATERIAL, MANUFACTURING & INSPECTION REF. TO RDSO SPECIFICATION NO. MP.0.2800.19 (LATEST REVISION).

4. 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.

5. ALL OVER UNLESS OTHERWISE STATED.

6. G-GROUND.

7. B- HARDENED , TEMPERED AND GROUND.

8. MACHINING TOLERANCES OF THE GEARING TO DIN 3962 & 3967 OR 3963

TOOTH TOLERANCES :-

DOUBLE FLANK TOTAL COMPOSITE ERROR	$f_t'' = 0.032$
BASE PITCH ERROR	$f_{pe} = 0.011$
TOOTH TO TOOTH PITCH ERROR	$f_u = 0.014$
PROFILE ERROR	$f_f = 0.014$
RADIAL RUN OUT	$f_r = 0.028$
FLANK ANGLE ERROR	$f_{H\alpha} = 0.011$

9. BACKLASH SHALL BE 0.29 mm MIN. AND 0.49 mm MAX.

10. SHOT PEEN TOOTH ROOT & FILLET RADIUS BEFORE GRINDING TEETH. USE S330 HARD SHOT TO OBTAIN 200% MINIMUM COVERAGE IN ROOT AREA. PEENING INTENSITY 0.007-0.010 C.

11. MAGNAFLUX INSPECT AS PER IS:3703

12. THE PINION SHAFT AND THE BORE 102.5 HAVE TO REMAIN SOFT AFTER HARDENING.

13. RC 34-40 AT SURFACE OF RELIEF GROOVE SHOWN IN VIEW 'C' AND ALONG SHAFT TAPER.

14. FOR BLUE MATCHING PRESS PLUG GAUGE BY HAND, KEEPING DISTANCE PIECE OF 15± 0.3mm AT PINION NECK 'C'.

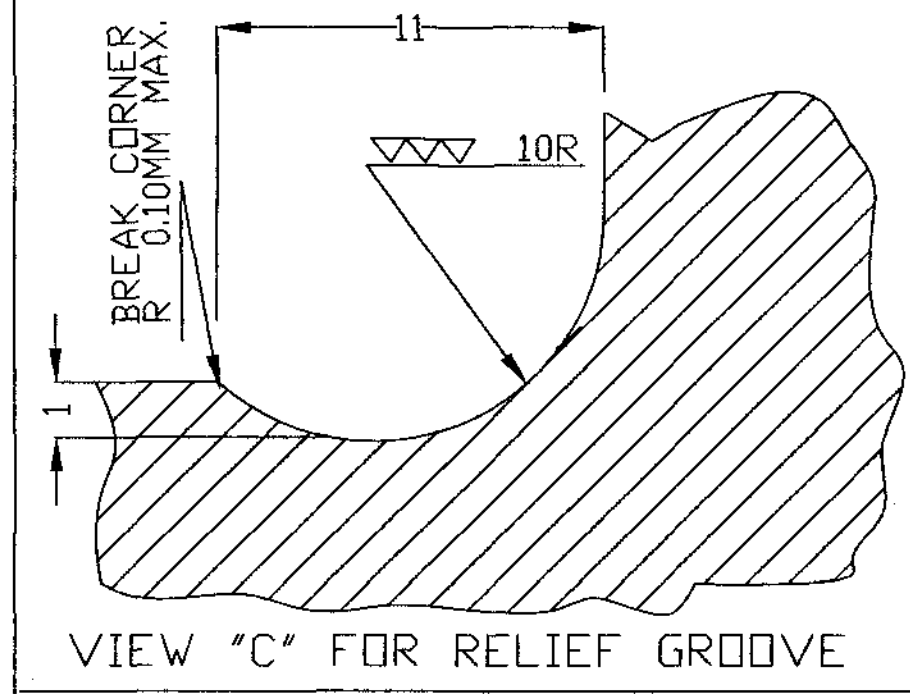
15. AS PER Q.LTY-10, CONDEMNING SERVICE LIMIT ON BASE TANGENT LENGTH OVER 4 TEETH = 77.115

16. AFTER FORGING THE FOLLOWING PHYSICAL PROPERTIES & CHEMICAL COMPOSITION ARE REQUIRED.

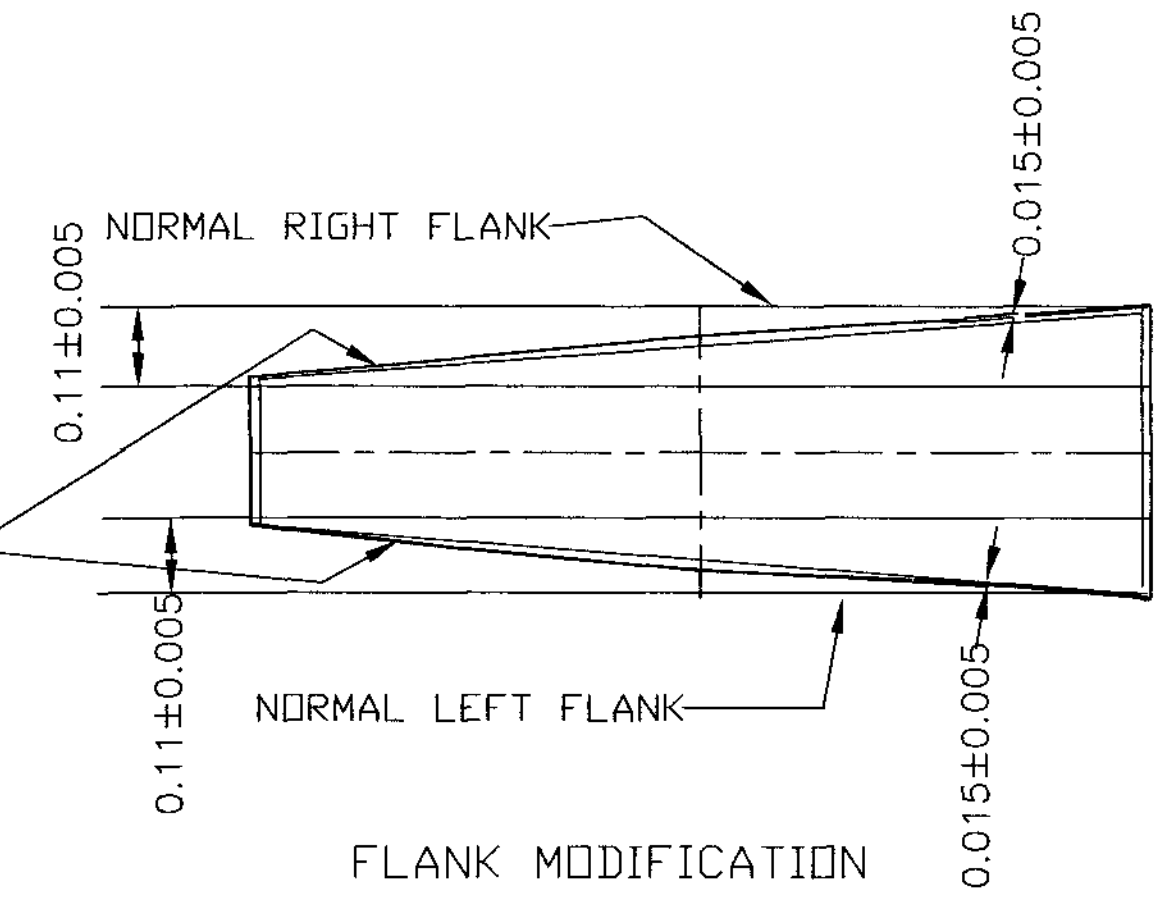
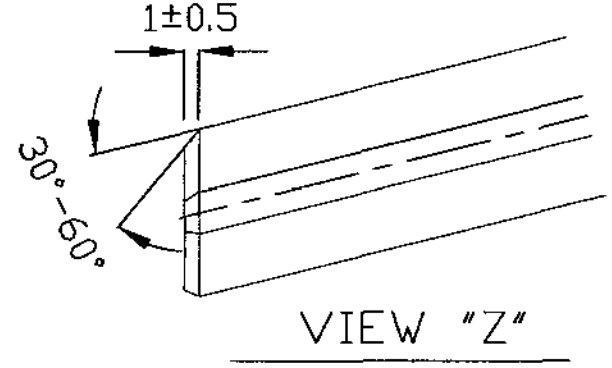
TENSIL STRENGTH(MIN.)	YIELD STRENGTH(MIN.)	FATIGUE STRENGTH(MIN.)	ELONGATION(MIN.)
1100MPa	780MPa	470MPa	8%

(B)

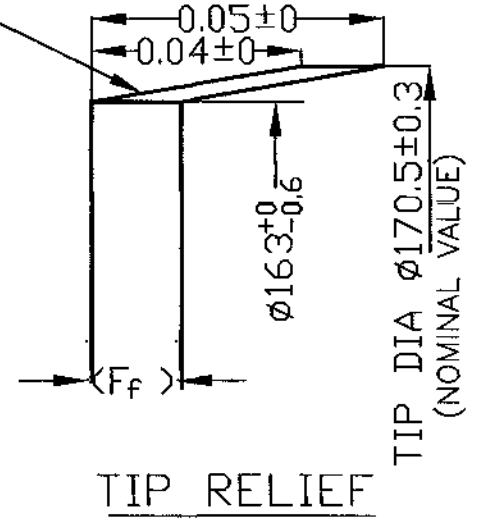
CHEMICAL COMPOSITION							
C	Si	Mn	Ni	Cr	Mo	S	P
0.15-0.20	0.40MAX.	0.40-0.60	1.40-1.70	1.50-1.80	0.25-0.35	0.035MAX.	0.035MAX.



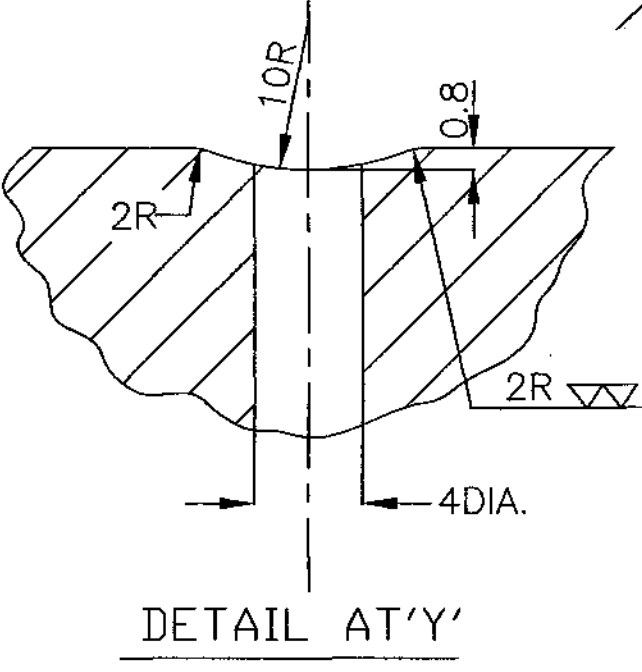
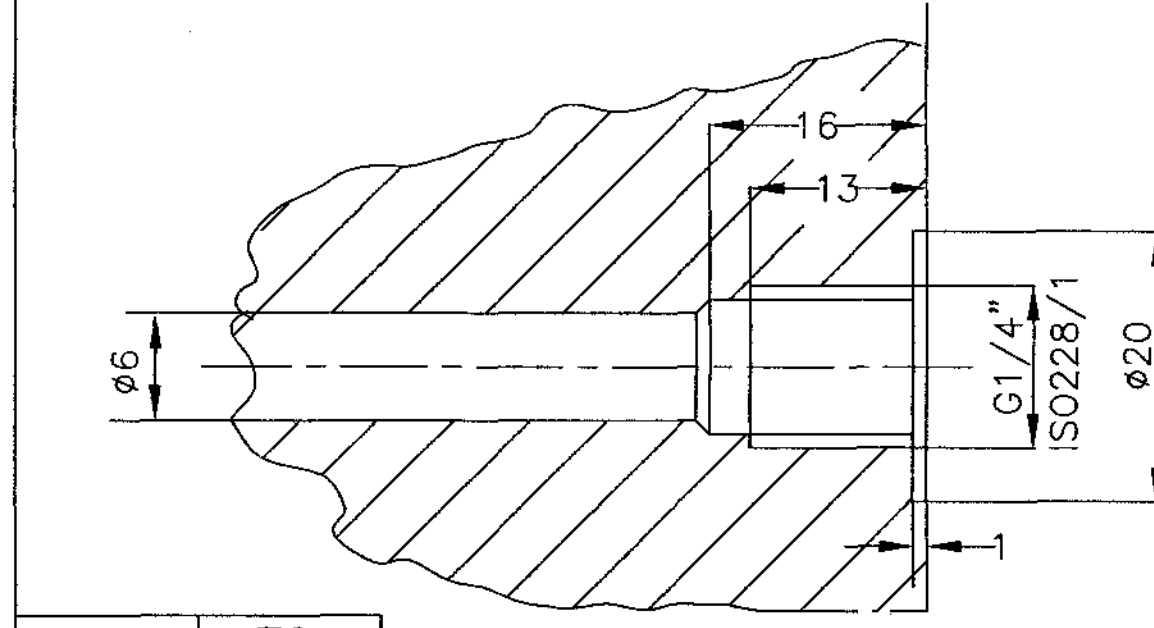
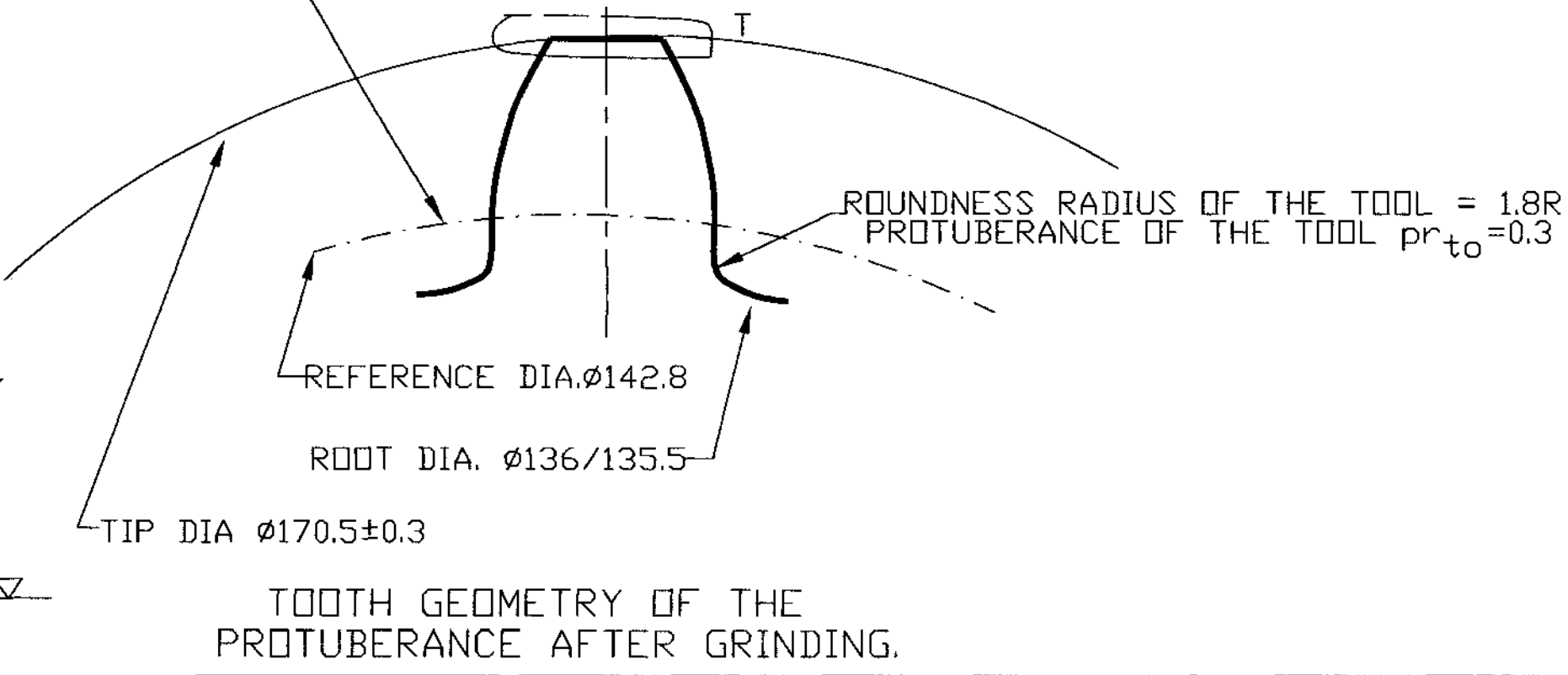
THE CONTOUR OF THE FLANK MUST ALWAYS BE CONVEX



TOLERANCE OF THE TIP RELIEF ACC. TO LENGTH OF THE TIP RELIEF  $W_a = 6.77$



PROTUBERANCE MILLED AND GROUND. REFERENCE DIA. MUST BE FULFILL FOR FUNCTION MAX. 142.8 ( REFERENCE DIA. = ROOT DIA. AFTER GRINDING.)



~	50
▽	25
▽	6.3
▽	0.8
▽	0.1
Ra	0.8
SYMBOL	(MAX.)

\* SURFACE ROUGHNESS TO IS:3073  
WELDING SYMBOLS TO IS:813  
TOLERANCES ON UNTOLERANCED DIMENSIONS TO IS:2102( MEDIUM )

ALT.	NO. OF PLACES	REF. NO.	DESCRIPTION	ALT. NO.	NOTE NO.	SIGN.	DATE
1	2	-	DOUBLE FLANK TOTAL COMPOSITE ERROR $f_t'' = 0.032$ DELETED. AT S.NO.3, PARA REVISED.	L2-220	13.06.19		

REF. NO.	I.R. PART NO.	DESCRIPTION	NO. / LOCO	WT.(kg) EACH	MATL.	SPEC.
21	TEETH	PINION SHAFT				
SCALE: 1:1, 2:1 & 4:1	REF: ABB DRG. NO.-3EJD000000-1906	FIRST ISSUED				
INDIAN RLYS. R.D.S.O. (MP)	DRG. NO. SK. DP.- 3847	SUPERSEDES				
		SUPERSEDED BY				