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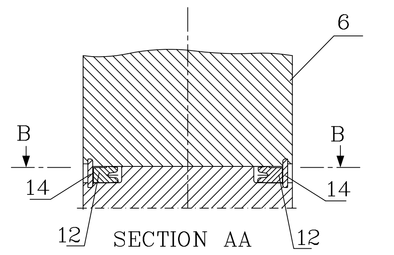
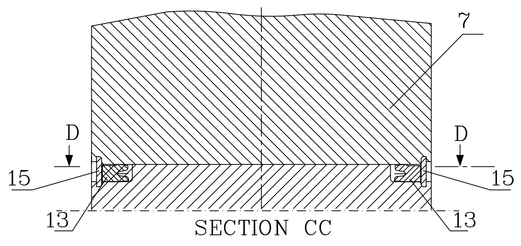
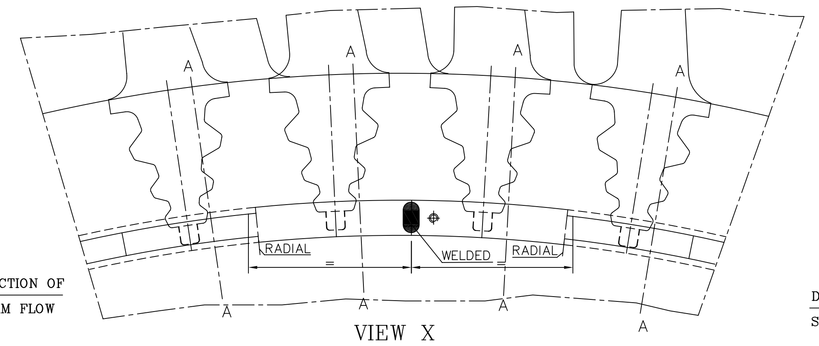
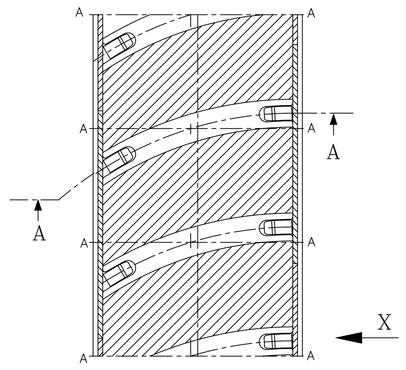
3.2/ ALL OVER

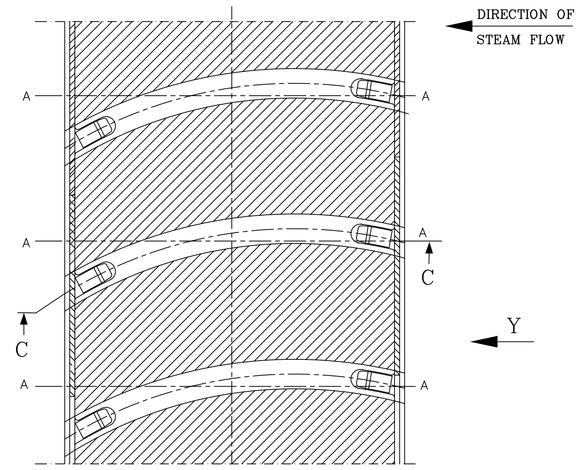
R (TURBINE SIDE)

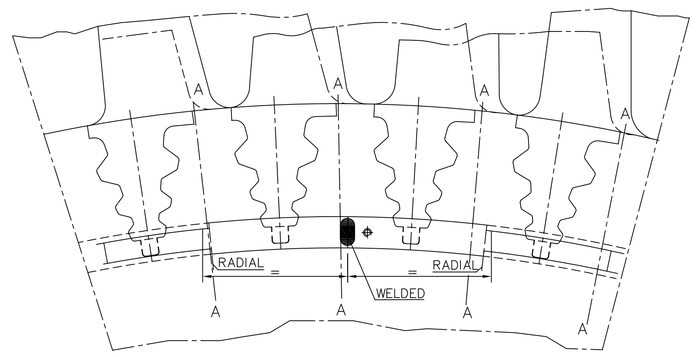






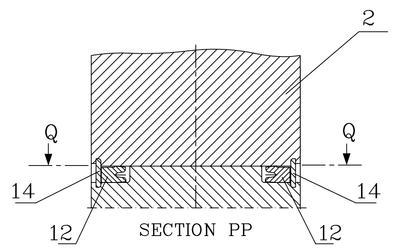


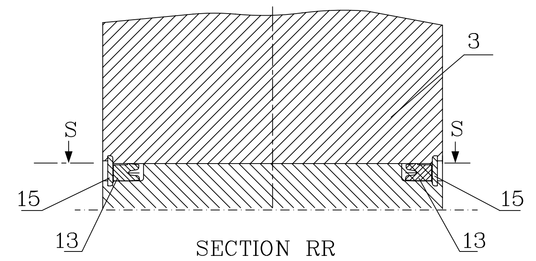


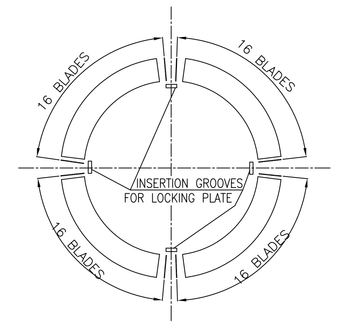


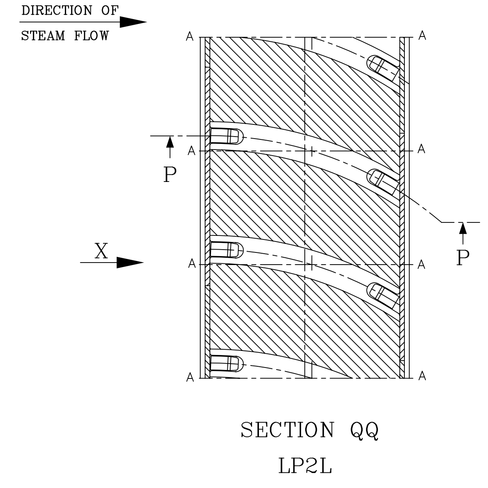
BLADE ASSEMBLY FOR STAGE LP2R AND LP3R

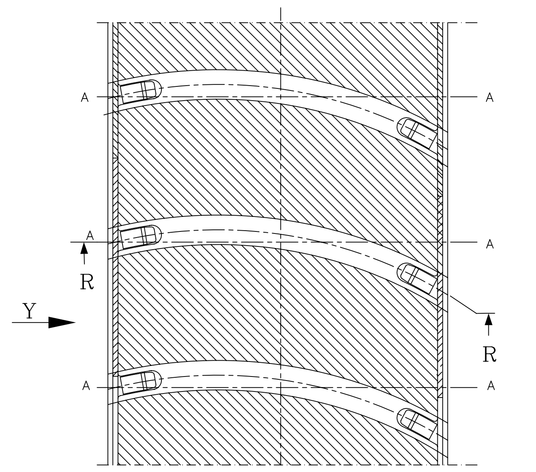
L (GENERATOR SIDE)

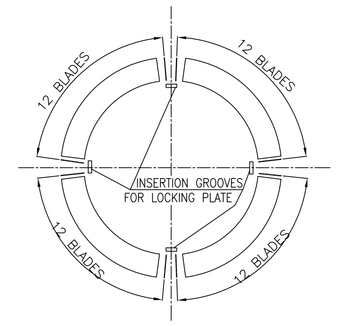




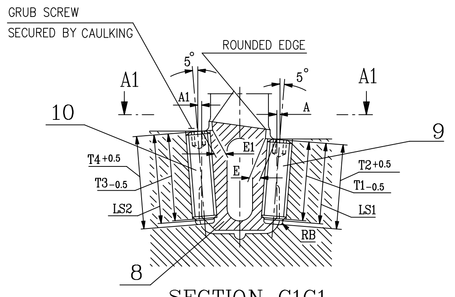


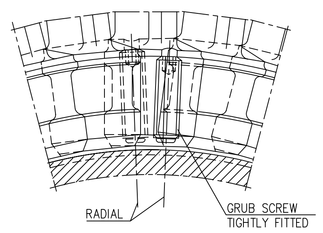


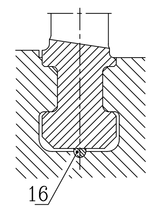


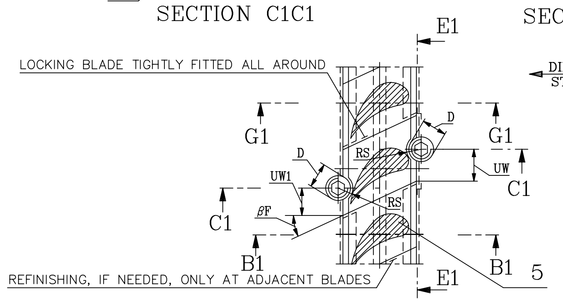


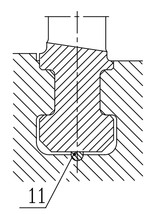
BLADE ASSEMBLY FOR STAGE LP2L AND LP3L











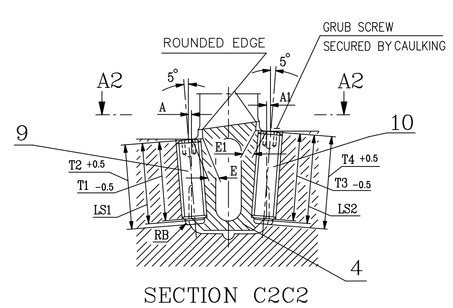
BLADE ASSEMBLY FOR STAGE LP1R

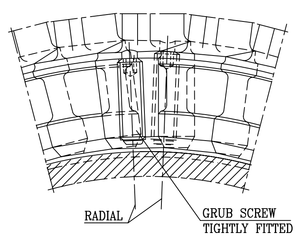
TABLE–1

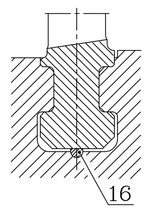
STAGE L & R	A	A1	E	E1	T1	T2	T3	T4	RB	LS1	LS2	D	RS	UW	UW1	βF DEG.	∠F DEG.
LP1	4.5	3.8	7.5	8.2	87.0	94.5	78.0	85.5	2.0	88.5	79.5	M22	12.0	24.0	20.3	23.0	5.0

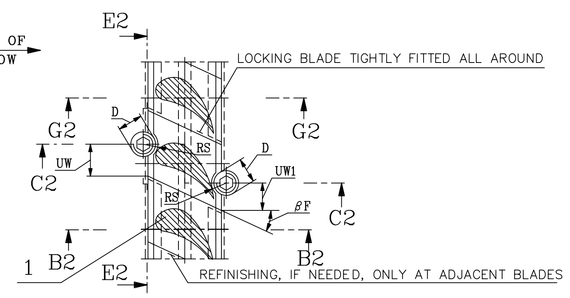
TABLE–2

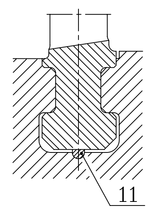
STAGE NO.	'a'	'b'
LP1L & R	$0.15^{+0.10}_{-0.05}$	$0.0^{+0.12}_{-0.15}$
'a' – ABSOLUTE ROTATION AT ROOT 'b' – ABSOLUTE ROTATION AT SHROUD		











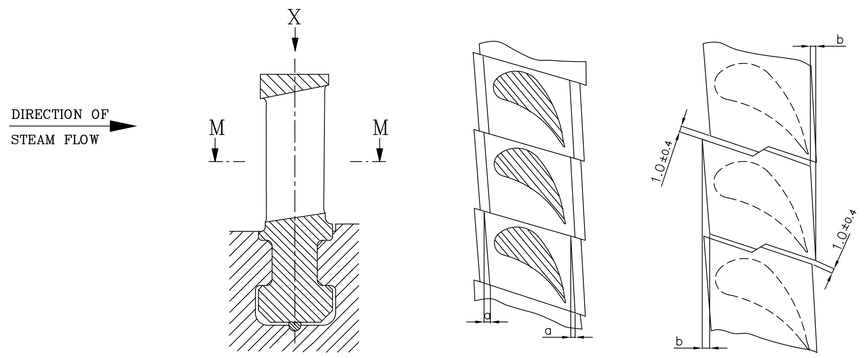
BLADE ASSEMBLY FOR STAGE LP1L

TECHNICAL REQUIREMENTS :

1. FITTING AND ASSEMBLY OF BLADES FOR STAGE LP 1L & 1R IS TO BE DONE AS PER TECHNOLOGICAL PROCESS NO. FV100086.
   FITTING OF LOCKING BLADE IS TO BE DONE AS PER TECHNOLOGICAL PROCESS NO. 0992.001(FV100082).
2. DETAILS OF GRUB SCREWS FOR STAGE LP1L AND 1R ARE GIVEN IN TABLE 1.
3. THE BLADES OF STAGE LP1L & 1R ARE TO BE CHECKED FOR PRE STRESSING DURING ASSEMBLY. THE REQUIRED VALUES OF BLADE ROTATION 'a' & 'b' ARE GIVEN IN TABLE 2. 'a' AND 'b' VALUES ARE TO BE MEASURED EITHER ON INLET EDGE SIDE OR ON EXIT EDGE SIDE AS SHOWN IN SECTION MM AND VIEW X.
4. INSERTION GROOVE DRAWINGS :–
   STAGE DRAWING NO.
   LP1L & 1R 41030446021 & 41030446022
5. LENGTH OF GRUB SCREWS IN C.B.O.M. INCLUDES FITTING ALLOWANCE.
6. THE LENGTH OF CAULKING BRASS IS TO BE CUT INTO SUITABLE NUMBER OF PIECES OF 5MM, 10MM AND 15MM.
7. AFTER FITTING OF BLADES, FINAL MACHINING OF SHROUD IS TO BE DONE AS PER BLADE PLAN LPT DRG. NO. 9103046000.
8. ROTOR GROOVES ARE TO BE MACHINED AS PER FOLLOWING DRAWINGS :
   LP 1L AND 1R : 41030446011
   LP 2L : 11030746031
   LP 3L : 01030746032
   LP 2R : 11030746033
   LP 3R : 01030746034
9. LOCATION FOR INSERTION GROOVES FOR LOCKING PLATES ARE TO BE AS PER SKETCH SHOWN ABOVE.
10. AFTER BEING ASSEMBLED IN ROTOR, EACH BLADE IS TO UNDERGO FREQUENCY MEASUREMENT AS PER TECHNOLOGICAL PROCESS NO.HW0990019. MAX. ALLOWABLE DROP IN NATURAL FREQUENCIES FROM THE MEASURED FIXTURE VALUES ARE TO BE AS FOLLOWS :

STAGE		LP2	LP3
MODE	I	5 HZ	3 HZ
	II	10 HZ	6 HZ

11. WELD CLASSIFICATION GROUP CS ACCORDING TO HW0620099; WELDING TEST SCOPE ACCORDING TO HW0850199 WITH CATEGORY OF SERVICE REQUIREMENT 4.



FOR STAGE LP1L AND LP1R

GMS No. / C.B.O.M			STATUS OF ORG	
01030746000			U	
AGREED DEPT	NAME	SIGN	DATE	
STT	V.K.J.	Sd/–	3/08/02	
TBM	B.DAS	Sd/–	3/08/02	

GRADE OF UNTOL.DIM
M/CG.–$\mathcal{E}/\mathcal{K}/\mathcal{F}$ AA0230208
WELDING–$\mathcal{A}/\mathcal{B}/\mathcal{E}/\mathcal{D}$ AA0621104
GAS CUTTING–'T3'AA0621101

REV	DATE	ALTERED / CHECKED

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: STEAM TURBINE

BHARAT HEAVY ELECTRICALS LTD. RANIPUR, HARDWAR

	NAME	SIGN	DATE
DRN	B.P.SINGH	Sd/–	22.05.02
CHD	PK BANSAL	Sd/–	25.05.02
APPD	TK GHOSH	Sd/–	30.09.02

NO. OF VAR

DEPT	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM No.	NO. OF ITEMS
STE	NTS	4804.0			

CODE 4011

TITLE : LP ROTOR BLADING MODULE STAGES

CARD CODE

DRAWING NO. 0–10307–46000

SHEET No. 1 No. OF SHEETS 1

A0 SIZE