

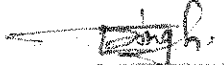
MACHINED COMPONENTS (GROUP -IV)

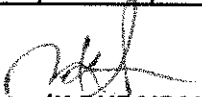
SI No	LF No	Drawing No	Nomenclature
1	6106401050	172.40.146	RING ENGAGING EXTREME RIGHT
2	6106401051	172.40.147	INITIATING RING MIDDLE R.H
3	6106401052	172.40.148	ENGAGING RING EXTREME LH
4	6106401053	172.40.149	ENGAGING RING MIDDLE, LH
5	6106401065	172.40.225	RELEASE RING III FRICTION CLUTCH
6	6101040031	172.40.225-1	3RD FRICTION CLUTCH RELEASING RING
7	6106401068	172.40.229	BOOSTER INNER
8	6106401070	172.40.231	BOOSTER
9	6106401071	172.40.232	BOOSTER
10	6106401084	172.40.246	EPICYCLE OF TRAIN IV
11	6106401085	172.40.247	GEAR CROWN 3RD PLANETARY GEAR SET
12	6106401096	172.40.270	BOOSTER
13	6101040033	172.40.270-1	BOOSTER
14	6106401097	172.40.271	CROWN
15	6106401098	172.40.308	DISCHARGE RING
16	6101040041	172.40.308-1	RELEASE RING
17	6101040042	172.40.309	CROWN GEAR OF 2ND PLANETARY GEAR SET
18	6101040043	172.40.310	CROWN GEAR OF 3RD PLANETARY GEAR SET
19	6101040044	172.40.311	EPICYCLIC GEAR OF 4TH PLANETARY SET
20	6101040052	172.40.319	DRUM
21	6101040053	172.40.320	CROWN
22	6101040054	172.40.321	BOOSTER
23	6101040055	172.40.322	INNER BOOSTER
24	6101040056	172.40.323	INNER BOOSTER
25	6101040057	172.40.324	BOOSTER
26	6101040059	172.40.326	THRUST DISK
27	6101040061	172.40.328	RIGHT HAND REAR ENGAGING RING
28	6101040062	172.40.329	RIGHT-HAND MIDDLE ENGAGING RING
29	6101040063	172.40.330	LEFT HAND REAR ENGAGING RING
30	6101040064	172.40.331	LEFT-HAND MIDDLE ENGAGING RING
31	6101040108	172.40.366	STOPPING BRAKE HOUSING (RIGHT-HAND)
32	6101040109	172.40.367	STOPPING BRAKE HOUSING (LEFT-HAND)
33	6106404014	172.43.008	PACKING COVER
34	6106401118	175.40.021	HOUSING OF MAIN BRAKE RH
35	6106401119	175.40.022	HOUSING OF MAIN BRAKE L
36	6106401120	175.40.023	BOOSTER INNER
37	6106401127	175.40.025	CROWN GEAR OF 2ND PLANETARY GEAR SET
38	6106401128	175.40.026	DRUM
39	6106401126	175.40.027-2	BOOSTER OUTER
40	6106401131	175.40.030-1	BOOSTER
41	6106401132	175.40.031	THRUST DISC
42	6106401146	175.40.052	BOOSTER BODY RIGHT
43	6106401147	175.40.053	HOUSING LH BOOSTER
44	6106402034	175.41.050	HUB FAN STEEL 38XC
45	6106402035	175.41.051	PLATE PRESSURE
46	6106406229	175.45.112	TOOTHED COUPLING
47	6101041013	188.41.006	FAN HUB

MACHINED COMPONENTS (GROUP -IV)

Sl no.	Nomenclature & drawing No.	Manufacturing technology & Testing / Inspection Facilities required to produce the item		Must be possessed by the vendor in his premises (P&M list and testing / inspection equipment list to be submitted)	May be possessed by the vendor in his premises or out sourced (Self declaration to be submitted)	FIRM Compliance (Y/N)	Remarks
1	Components as per enclosed list of Machined Components (Group IV) <i>Total items = 47 Nos</i>	TECHNOLOGY-1	Turning	CNC Turning dia 600mm suitable to accommodate component of diameter in the range of dia 250 to 600mm with 0.010mm accuracy			
			Milling & Drilling	HMC and/or VMC suitable to the components upto the size 630mm diameter with 0.010 accuracy			
			Gear Hobbing		Gear Hobbing of Mod 3 x cutting ϕ 400 with gear cutting accuracy of class of Din 7 or better accuracy		
		TECHNOLOGY-3	Gear Shaping		Gear Shaping of Mod 5 with gear cutting accuracy of class of Din 7 or better accuracy.		
			Hardening & Tempering		Hardening & Tempering furnace with Oil quenching facility		
			Protection coating		Oxidising Plant		
		TECHNOLOGY-4	Raw material		Firm should be capable to arrange the raw material like Forging, Casting, Bar material etc as per drawing specification and standard.		



(D.SATHISH KUMAR)
 WM/QA(NF& QMSC)



(LUXMAN SINGH)
 WM/TRG-II, HT & EP



(K.DURAIRAJ)
 JWM/Trans -II

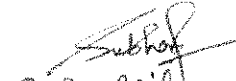
Sl no.	Nomenclature & drawing No.	Manufacturing technology & Testing / Inspection Facilities required to produce the item		Must be possessed by the vendor in his premises (P&M list and testing / inspection equipment list to be submitted)	May be possessed by the vendor in his premises or out sourced (Self declaration to be submitted)	FIRM Compliance (Y/N)	Remarks	
1	Components as per enclosed list of Machined Components (Group IV)	TEST / INSPECTION-1	3D CMM	3D CMM 500 x 500mm.				
			Gear Profile Tester			Gear Profile Tester (Max module 5)		
			Surface Roughness Tester	Surface Roughness Tester for Ra & Rz values				
			Gauges	Standard Gauges for checking Holes and threads suitable to the requirement of the components. Firm should submit the undertaking in this regard that they will create the facilities within 6 months from the date of receipt of order.				
			Measuring Instruments	Gear Teeth Micrometer, Vernier Caliper, Groove Vernier, Radius gauge, Feeler Gauge etc. suitable to the requirement of the components				
		TEST / INSPECTION-2	Hardness measurement			Brinell / Rockwell Hardness Tester		

Note : Justification for alternate facilities may be shared to prove that alternate facilities can be utilised to manufacture the item wherever the facilities are mentioned above are not available, but vendor has alternate facilities.


(D.SATHISH KUMAR)
 WM/QA(NF& QMSC)

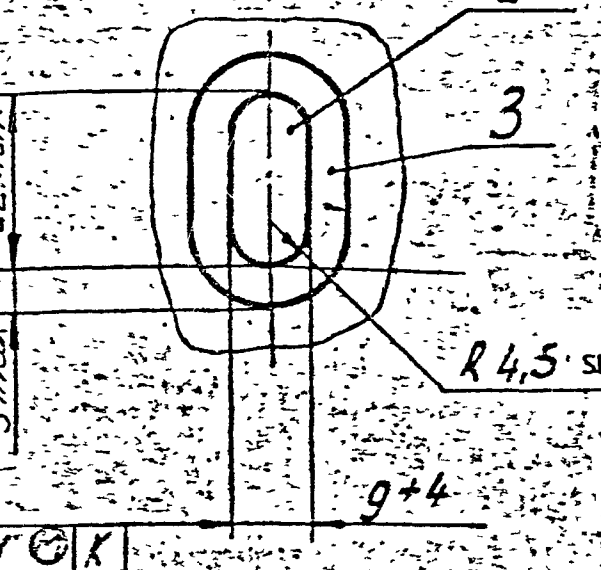
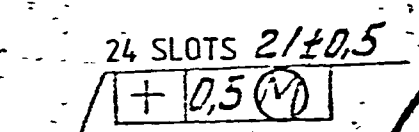
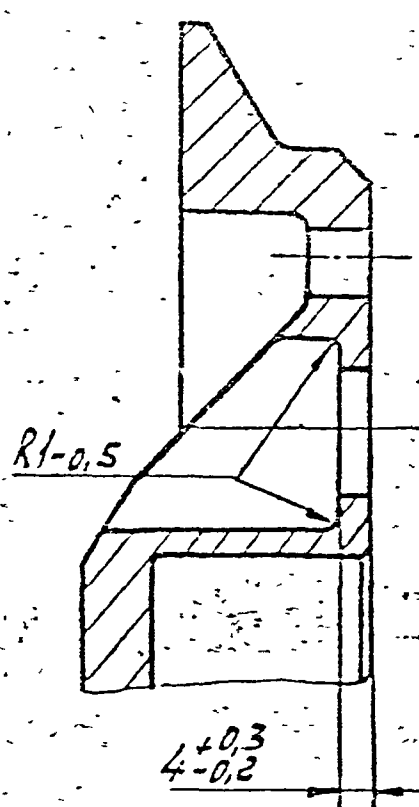
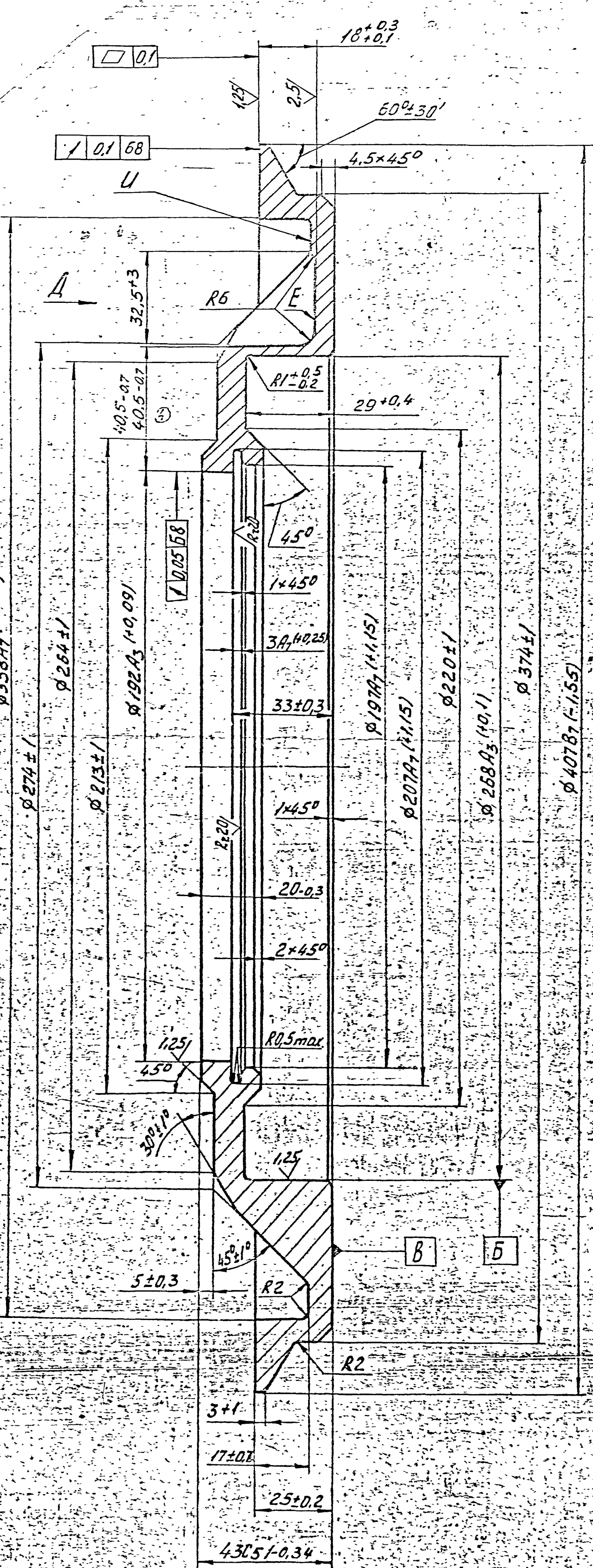

(J.P.SINGH)
 GM-OPERATIONS I


(LUXMAN SINGH)
 WM/TRG-II,HT & EP

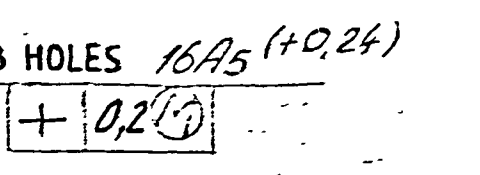
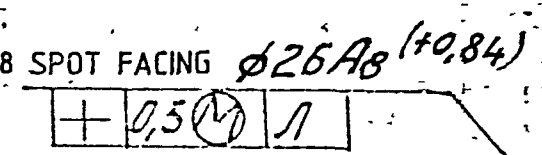
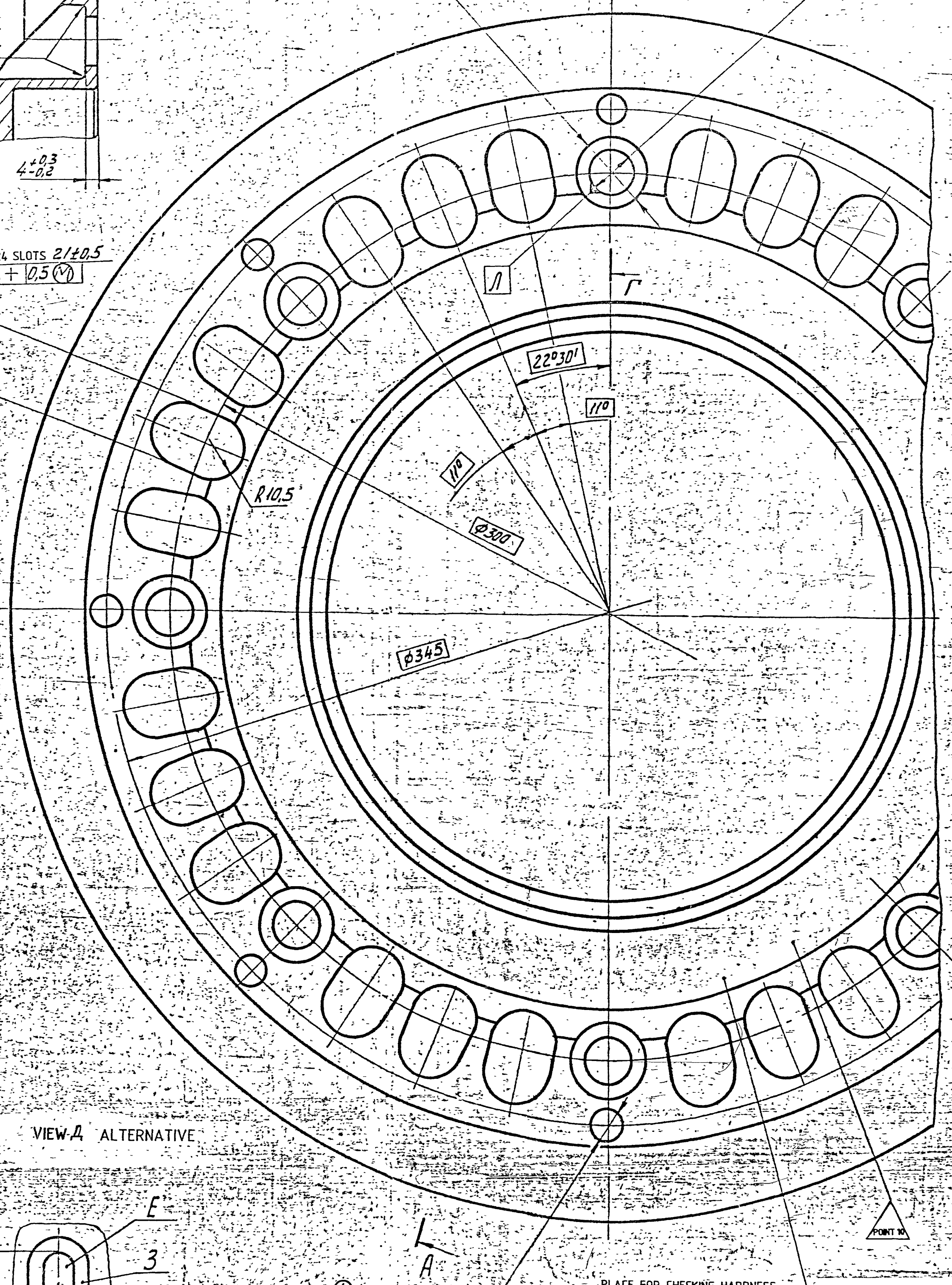

 Alt to **(NEERAJ KUMAR)**
 QA-RIG(OE)


(K.DURAIRAJ)
 JWM/Trans -II


(ANIMESH PAIK)
 DGM/CA,TRG & RG



VIEW A ALTERNATIVE



1. BHN 363-302 (DIA OF INDENTATION 32 TO 35)
2. MAXIMUM PLAY OF SURFACES IS 0.3 mm
3. SHOULDER OF UPTO 1 mm WITH SMOOTH RADIUS OF APPROXIMATELY 3 mm OR THAT AT AN ANGLE OF ATLEAST 45° TO SURFACE (ROUGHNESS Rz 80/ ON SURFACE 3) IS PERMISSIBLE, IN THE PLACE WHERE SURFACE 'E' MERGES WITH SURFACE 3, ALONG THE ELLIPSE
4. WHILE MARKING RECESSES, SURFACE FINISH OF 2.5/15 IS TO BE MAINTAINED ON AREA ATLEAST 18.5 mm LONG AND 6.5 mm WIDE.
5. SURFACE FINISH OF 1.25/ ON 268 A3 IS TO BE MAINTAINED ALONG LENGTH OF ATLEAST 27 mm FROM FACE 'B' SURFACE FINISH OF 2.5/ IS PERMISSIBLE ALONG THE REMAINING LENGTH.
6. COMPONENT IS TO BE STATICALLY BALANCED UNBALANCED WEIGHT SHOULD NOT EXCEED 5 GRAMMES PER R 195mm. WHILE BALANCING IT IS PERMITTED TO DRILL THROUGH HOLES 10±1 ON SURFACE 'U' IN THIS CASE, THE WALL THICKNESS BETWEEN THE BALANCING HOLES AND ADJACENT HOLES 10mm SHOULD BE OF 5 mm, MINIMUM
7. THREAD M10-7H CAN BE APPLIED TO TWO DIAMETERICALLY OPPOSITES HOLES TAKEN FROM GROUP OF 8 HOLES ~~10±1~~ 10±0.3
8. COATING: CHEMICAL OXIDIZING PHOSPHATING, OIL FINISHED OR CHEMICAL OXIDIZING, OIL FINISHED. NO COATING MAY BE APPLIED TO SURFACES 192 AND 268.
9. OTHER REQUIREMENTS AS PER SPECIFICATIONS 520 TY1
10. TO BE MARKED
11. MUTUAL ANGULAR DISPLACEMENT OF GROUP OF HOLES ~~10±1~~ 10±0.3 RELATIVE TO GROUP OF HOLES 16 AS SHOULD BE OF 3 mm, MAXIMUM.
12. CHAMFER 1-0.5x45° MAY BE MADE INSTEAD OF RADIUS R 1-0.5 IN 8 SPOT FACINGS
13. CHAMFER 3x45° MAY BE MADE INSTEAD OF RADIUS R6 IN 24 SLOTS

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST WT	TO BE STAMPED OR MARKED WHERE INDICATED THUS #
8,45 Kg	(LETTERS)

ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE

DRN	CHD	TCD	APPD	DATE	SCALE	DIMENSIONS IN mm	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED 'S' : 2'92-6'	ALL THREADS TO CONFORM TO	D S CAT NUMBER	DRAWING NUMBER
					1:1					175 40 030-1

TITLE BOOSTER

D S CAT NUMBER

DRAWING NUMBER

AS.20044	PIERCING TOOL	1500 T
AS.20043	TRIMMING TOOL	1500 T
AS.20042	STAMPING DIES	EK-32
TOOL NO.	DESCRIPTION	MACHINE
SCALE	COMPONENT T-72	DG-32
1:1	175-40-030-1 BOOSTER	H-VF AVADI
DGN: CHD APPD AUTHD	DRAWING NO	175-40-030-1/F

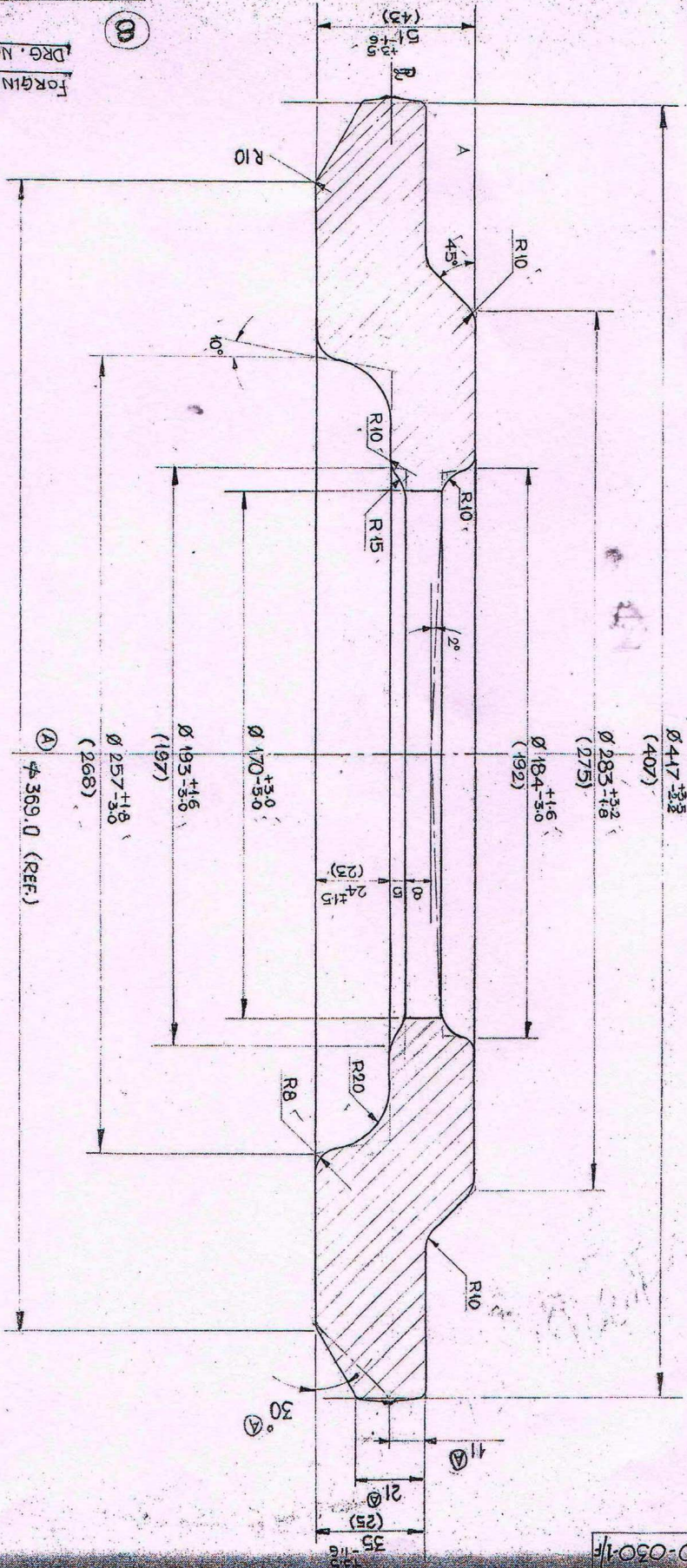
(B)

FORGING IS COMMON FOR T-90 FORGING. TO
 DRG. NO. 172.401324/F

MATERIAL:- STEEL 38XC. GOST 4543-71
 WEIGHT OF FORGING:- 31.7kg

1. STAMP IDENTIFICATION MARK.
2. HEAT TREAT. DIA. OF IND. ≥ 3.8
3. DESCAL.
4. DEPTH OF SURFACE DEFECTS AND FIT MARKS FROM SCALES UP TO 0.5 OF ACTUAL MACHINING ALLOWANCE IS ACCEPTABLE.
5. MISMATCH SHOULD NOT EXCEED 1.5 mm.
6. RESIDUAL FIN ALONG PARTING LINE SHOULD NOT EXCEED 1.5 mm.
7. FOLDING OF FIN IN PIERCED HOLE AND IN PLACE MARKED 'A' SHOULD NOT EXCEED 4 mm.
8. BUCKLING SHOULD NOT EXCEED 2.0 mm.
9. ECCENTRICITY OF PIERCED HOLE SHOULD NOT EXCEED 3.5 mm.
10. UNSPECIFIED RADII TO BE R 5 mm.
11. UNSPECIFIED DRAFTS TO BE 7°.
12. MACHINING DIMENSIONS ARE GIVEN IN BRACKETS.
13. UNTOLERANCED DIMENSIONS ARE NOT TO BE CHECKED.

TECHNICAL REQUIREMENT



ISSUE	MODIFICATION	DATE
A	DRAFT ANGLE 30 WAS 45° 369 REF. DIMN. ADDED	29/12/87
B	MACHINE DG-32 WAS PARTING LINE SHIFTED 21 DIMN. ADDED	30/12/87
C	NOTE ADDED FOR T90. FORGING IS COMMON FOR T90. FORGING	30/12/87

DRAWING NO. 175-40-030-1/F