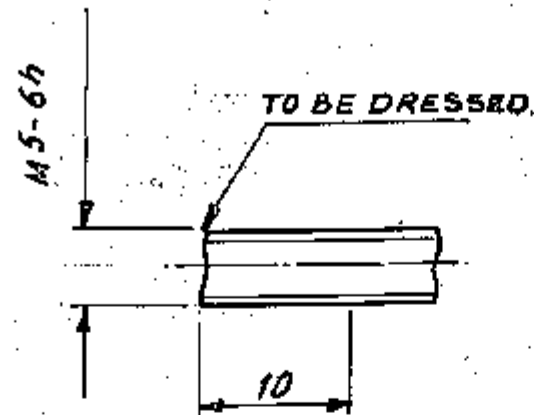






DRAWING NUMBER

356 51



1. THE REST OF THE TECHNICAL REQUIREMENTS AS PER STANDARD 82052-00.
2. TO BE CUT FROM THE BAR AS REQUIRED AFTER INSTALLATION INTO COMPONENT OR ASSEMBLY.
3. SHARP EDGES SHOULD BE BLUNTED.

## EXPLANATORY NOTE

## 4. REFERENCE MATERIAL QUOTED:

LEADED BRASS ROD PRESSURE TREATED GRADE LC 59-1 TO GOST 15527-70

## a). CHEMICAL COMPOSITION

GRADE OF BRASS	CONTENT OF ELEMENTS %						
	BASIC ELEMENTS		ADMIXTURES MAXIMUM				
	Cu	Pb	Fe	As	Bi	P	TOTAL
LC59-1	57.0 60.0	0.8 1.9	0.5	0.010	0.003	0.02	0.75

- 1 THE ADMIXTURES NOT INDICATED IN TABLE ARE CONSIDERED AS COMMON ADMIXTURES.
- 2 THE ALLOY OF GRADE LC59-1 THE CONTENT OF NICKEL UP TO 1% IS ALLOWED (DUE TO COPPER CONTENT)
3. THE TOTAL ADMIXTURES OF TIN AND SILICON SHOULD NOT EXCEED 0.5 %

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

EST WT  
0.0024 Kg

TO BE STAMPED OR MARKED WHERE INDICATED THUS # ( LETTERS )

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

DRN  
CHD  
TCD  
APPO  
DATE

SCALE: 2 : 1

DIMENSIONS IN mm

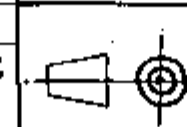
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED

ALL THREADS TO CONFORM TO

MATERIAL: BRASS LC 59-1  
GOST 15527-70

USED ON: Cb 3338-402-4  
CB 447 05 C820-63-07

CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)  
AVADI



TITLE:

WOOD SCREW LOCK

D S CAT NUMBER

DRAWING NUMBER

356 51

ISSUE	DATE	NATURE OF AMENDMENTS

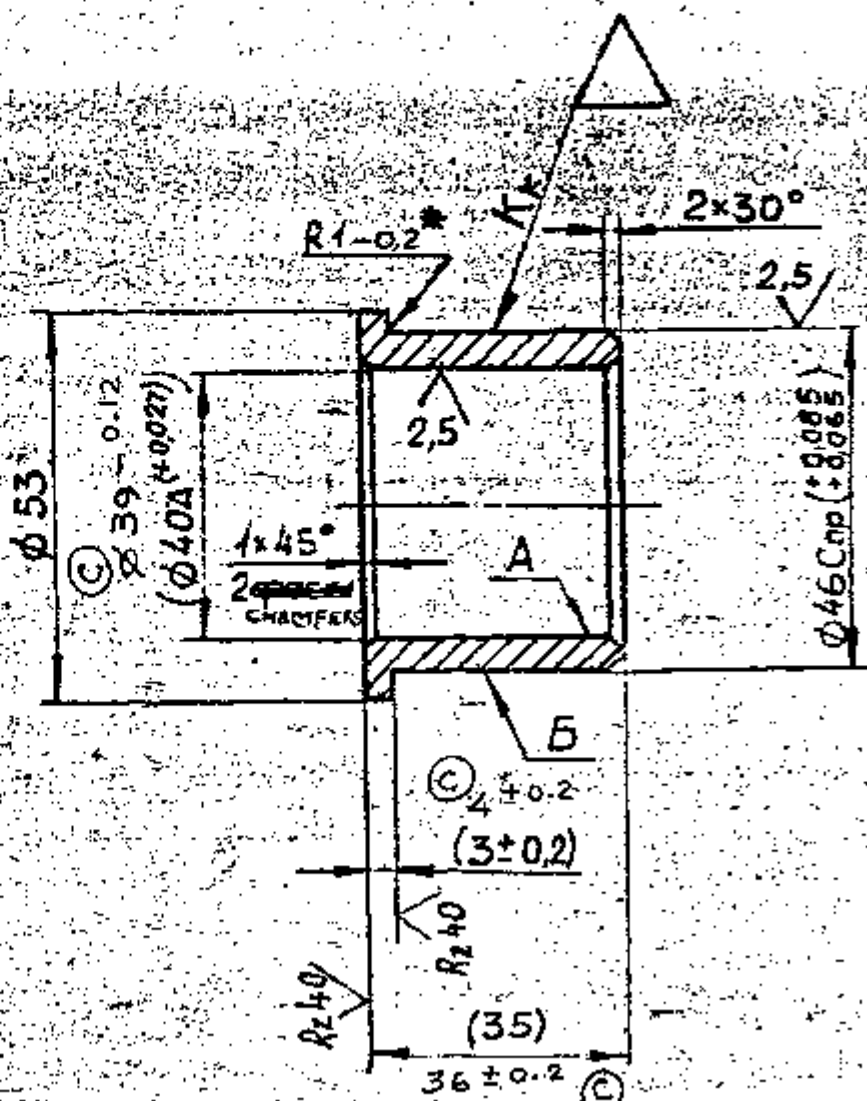
A-11

SIZE A3



DRAWING NUMBER  
514-33

Rz 80  
✓(✓)



1. ALTERNATE MATERIAL IS BRONZE ~~Sp 1X30~~ БРА9Х30 ГОСТ 493-79.
2. TOLERANCE FOR ALIGNMENT OF SURFACES A AND B (AS PER PRELIMINARY MACHINING) SHOULD NOT EXCEED 0.05 MM.
3. GIVEN IN BRACKETS ARE DIMENSIONS AFTER ASSEMBLY.
4. UNSPECIFIED LIMIT DEVIATIONS OF DIMENSIONS FOR SHAFTS ARE AS PER B.
5. \* DIMENSION IS PROVIDED WITH TOOLS.

EXPLANATORY NOTE:-

MATERIAL QUOTED : PIPE БРА № МЦ 10-3-1.5-60x12.5  
GOST 1208-73.  
БРА № МЦ 10-3-1.5 = GRADE OF BRONZE AS PER GOST 1208-73.

CHEMICAL COMPOSITION :% (AS PER GOST 18175-72)

BASIC COMPONENTS :% (BY WEIGHT)

ALUMINIUM = 9.0-11.0

IRON = 2.0-4.0

MANGANESE = 1.0-2.0

IMPURITIES :- % BY WEIGHT (MAXIMUM)

TIN = 0.1

SILICON = 0.1

LEAD = 0.03

PHOSPHORUS = 0.1

ZINC = 0.05

TOTAL = 0.7

MECHANICAL PROPERTIES : (AS PER GOST 1208-73)

TENSILE STRENGTH kgf/mm<sup>2</sup> = 60 (MIN)

% ELONGATION kgf/mm<sup>2</sup> = 12 (MIN)

BRINNEL HARDNESS HB = 140-220.

EXPLANATORY NOTE ADDED ON 20-9-91

\*\* БРА № МЦ 10-3-1.5-60x12.5  
PIPE GOST 1208-73.

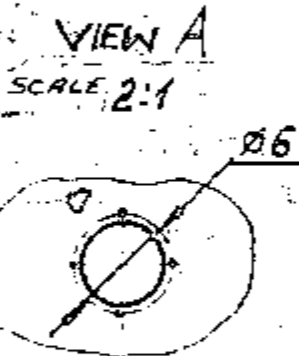
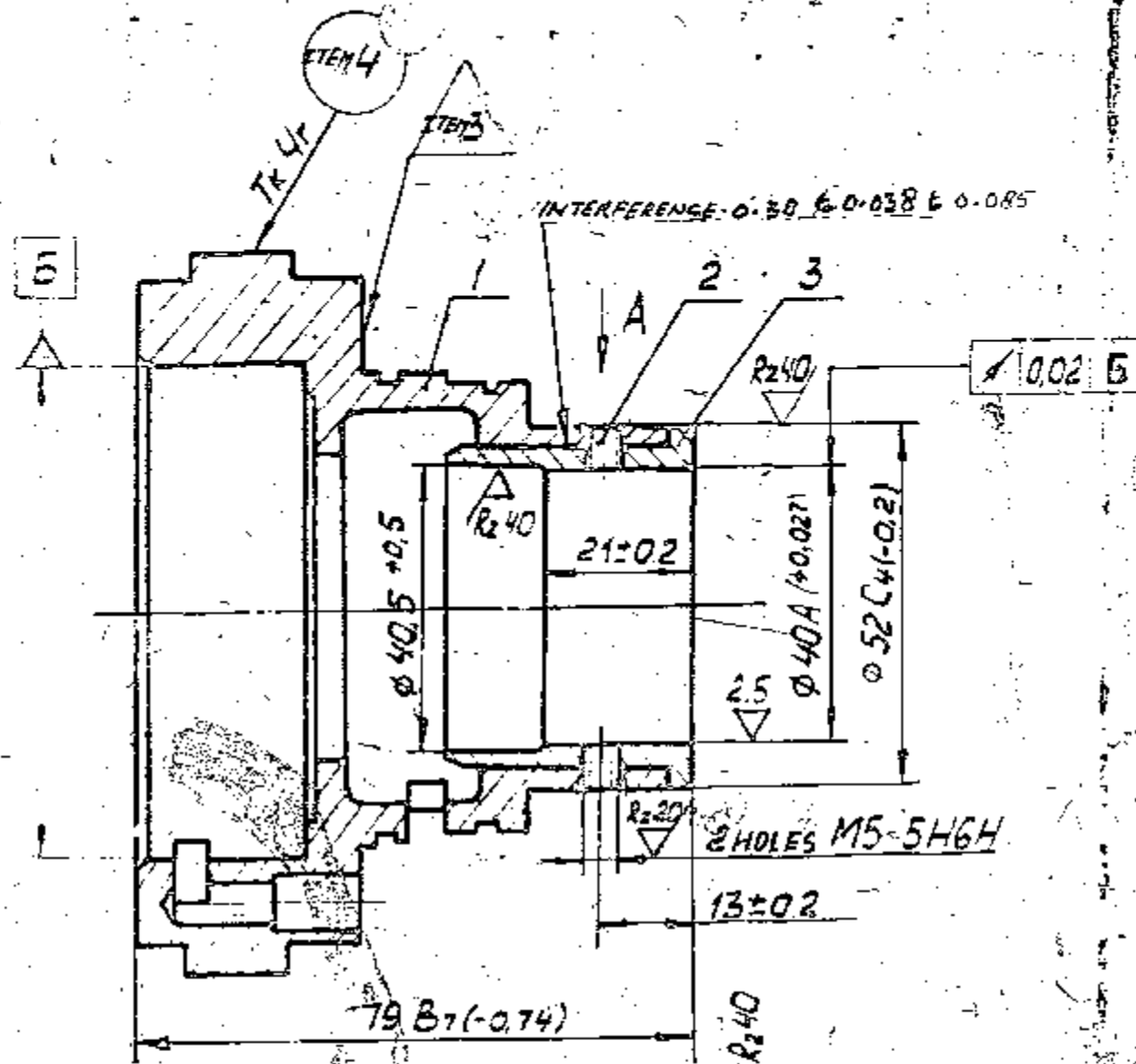
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. TO BE STAMPED OR MARKED WHERE INDICATED THIS # (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	gaf.	MATERIAL :-	USED ON :-
CHK	Liba P...	** SEE ABOVE	CG 20-63-07
TCD	...	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	
APPD	...	A V A D I	
DATE	10-9-87	TITLE	
SCALE	1:1	BUSHING	
DIMENSIONS IN mm		D'S CAT NUMBER	
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS 2102-69		DRAWING NUMBER	
C 9.4.97 EFA/P/PDO/023 dt 17-1-97		514-33	
B 28-2-96 AUTHY. LT.No. EFA/PDO/2556-4/DT: 21-2-96			
A 6-7-91 DO CORRECTION			
ISSUE	DATE	NATURE OF AMENDMENTS	





1. COOL THE BUSHING (Ref. No. 3) IN LIQUID NITROGEN BEFORE INSTALLING.
2. STOP PUNCH AT 4 POINTS AS SHOWN IN VIEW A AFTER FITTING THE LOCKING WOODSCREW (Ref. No. 2)
3. CARRY OUT STAMPING BY ELECTROCHEMICAL METHOD.
4. APPLY THE FOLLOWING MARKING ON THE ASSEMBLIES WHICH ARE MEANT FOR SPARE PARTS:
  1. DESIGNATION OF THE ASSEMBLY;
  2. TRADE MARK.

PROT. SUIBIA SHOULD BE APPROVED BY A.I.P.F. BEFORE OUR PRODUCTION

EST. MASS	120 Kg	TO BE STAMPED OR MARKED WHERE INDICATED THIS BY LETTERS I
ALL SHAFT LINES AND CORNERS TO BE ROUNDED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE RESPONSIBLE		
ISSUE DATE	NATURE OF AMENDMENTS	MATERIAL
DRWG 804	SCALE: 1:1	USED ON C6 20-63-00-5
CHD 03	DIMENSIONS IN mm	CONTROL RATE OF INSPECTION (HEAVY VEHICLES) AVAD
TEC 03	TOLERANCE ON DRWS UNLESS OTHERWISE STATED	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
APPD 20	ALL THREADS UNIFORM TO	D'S CAT NUMBER
DATE 26-11-81		SPACER ASSY
		PROVINCE NUMBER C6 20-63-07

AMDT-NO. 1502-B1









ENGINE FACTORY, AVADI

# PROCESS SCHEDULE

DESCRIPTION :- **SPACER**

COMPT. No :- **20-63-10-6**

MFG. SHOP :- **SPS**

REV. NO. 00

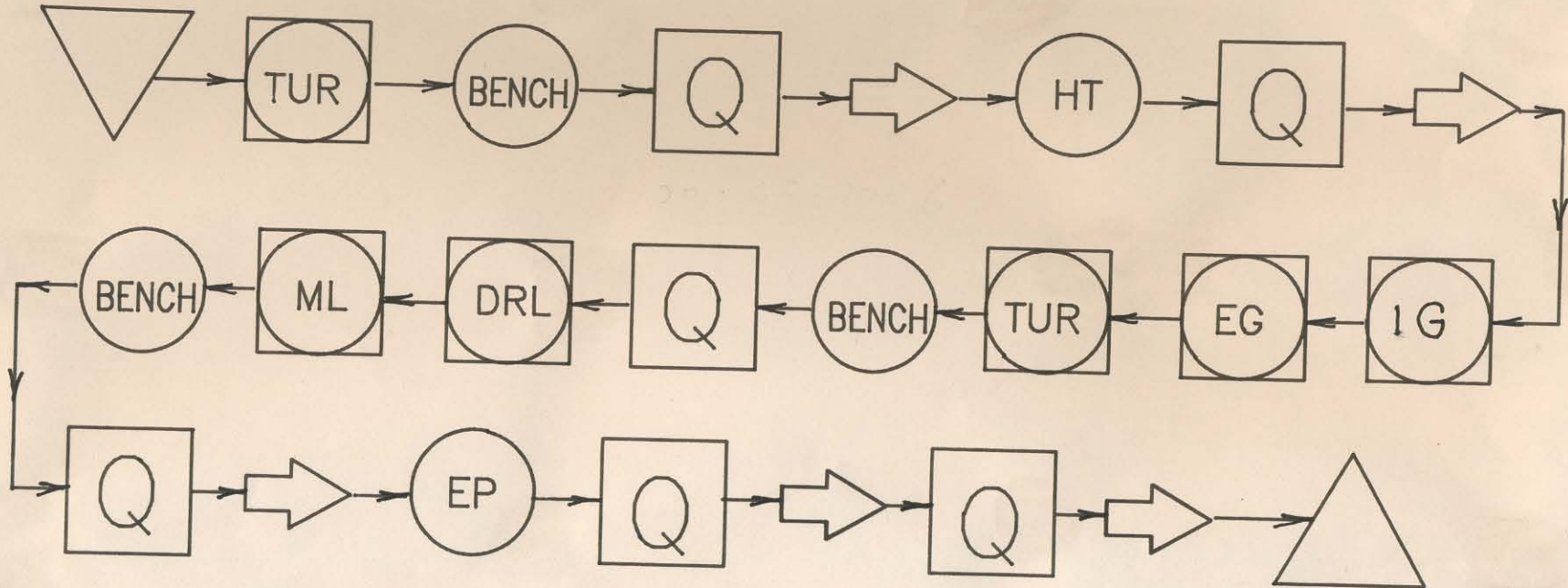
DATE - 22.10.96

STORE : *SPACER*

# FLOW PROCESS CHART

DRG. NO. : *20-63-10-6*

END STORE *UTD-20 ENGINE ASSY.*



HT = HEAT TREATMENT	TUR = TURNING	ML = MILLING	DRL = DRILLING	TRL = THREAD ROLLING	
EP = ELECTRO PLATING	EG = EXT. GRINDING	IG = INT. GRINDING	SG = SURFACE GRINDING	HC = HACKSAW CUTTING	
LEGEND			APPROVAL		SECTION
TEMP. STORAGE	▽	TRANSPORTATION	➡	SIGNATURE & DATE	
OPERATION	○	INSPECTION BY QC	Q	PREPARED BY	MGE
OPERATION CUM INSPECTION	◻	INSPECTION BY SQAE/CQA(ME) Etc.	I	APPROVED BY	QC
100 % INSPN. BY MFG. SEC.	□	STORAGE	△	AUTHORISED FOR ISSUE	
				<i>DHAR</i>	
				<i>GA</i>	
				<i>Make 22/01/26</i>	
					ENGINE FACTORY, AVADI, MADRAS-54
					SPS
					NO. OF SHEETS 1
					SHEET NO. 1



# ENGINE FACTORY AVADI

FORM No :EFA/P-038

PROCESS SCHEDULE	NOMENCLATURE : SPACER
	DRAWING No : 20.63.10-6
	MATL. SPECIFICATION : STEEL FORGING 45 X GOST 4543-71

OPN No	DESCRIPTION OF OPERATION	SHT No	WORK CENTRE	SET UP TIME	OPN TIME	REMARKS
010	TURNING	5	CENTRE LATHE HMT NH26			
020	TURNING	6	CNC LATHE HMT GDM 65/2A			
030	TURNING	7	- DO -			
035	DEBURRING	-	BENCH			
040	INSPECTION	8, 9	BENCH			
050	<u>HEAT TREATMENT</u> HARDEN TO 28 TO 33 HRC, OR 269 TO 302 BHN	-	HEAT TREATMENT SHOP			
060	INSPECTION	-	BENCH			
070	GRINDING	10	INTERNAL GRINDING M/C NOVA			

PREPARED BY	CHECKED BY	APPROVED BY	AUTHORISED BY						SHT. No
SIGN <i>[Signature]</i>	SIGN <i>[Signature]</i>	SIGN <i>[Signature]</i>	<i>[Signature]</i>						1 OF 23
DATE 19.10.96	DATE <i>[Date]</i>	DATE 22/10/96							
<i>[Signature]</i> /PDO	/PDO	HOS/PDO	DO/PDO	PDO REF	ISSUE	DATE	SIGN		



# ENGINE FACTORY AVADI

FORM No :EFA/P-038

## PROCESS SCHEDULE

NOMENCLATURE : SPACER  
 DRAWING No : 20.63.10-6  
 MATL SPECIFICATION : .....

OPN No	DESCRIPTION OF OPERATION	SHT No	WORK CENTRE	SET UP TIME	OPN TIME	REMARKS
080	GRINDING		INTERNAL GRINDING M/C NOVA			
110	GRINDING		CYL. GRINDING M/C G/17			
120	GROOVING		CNC LATHE HMT GDM 65/2A			
130	DRESSING		BENCH			
140	INSPECTION		BENCH			
150	DRILLING		CNC LATHE GDM 65/2A			
160	COUNTER SINKING		RADIAL DRILLING M/C			
170	COUNTER BORING & COUNTER SINKING		RADIAL DRILLING M/C			

PREPARED BY		CHECKED BY		APPROVED BY		AUTHORISED BY						SHT. No
SIGN	<i>[Signature]</i>	SIGN	<i>[Signature]</i>	SIGN	<i>[Signature]</i>	<i>[Signature]</i>						
DATE	19.10.96	DATE	<i>[Date]</i>	DATE	20/10/96	<i>[Date]</i>						2 OF 23
/PDO		/PDO		HOS/PDO		DO/PDO		PDO REF	ISSUE	DATE	SIGN	



# ENGINE FACTORY AVADI

FORM No :EFA/P-038

PROCESS SCHEDULE	NOMENCLATURE	: SPACER
	DRAWING No	: 20-63-10-6
	MATL SPECIFICATION	: .....

OPN No	DESCRIPTION OF OPERATION	SHT No	WORK CENTRE	SET UP TIME	OPN TIME	REMARKS
180	TAPPING	19	RADIAL DRILLING M/C			
190	MILLING	20	CNC LATHE GDM 65/2A			
200	MILLING	21	- DO -			
210	DRESSING		BENCH			
215	WASHING		WASHING M/C			
220	INSPECTION	22,23	BENCH			
230	COATING CHEMICALLY OXIDIZING & OILING		ELECTRO-PLATING SHOP			
240	INSPECTION		BENCH			

PREPARED BY	CHECKED BY	APPROVED BY	AUTHORISED BY						SHT. No
SIGN <i>[Signature]</i>	SIGN <i>[Signature]</i>	SIGN <i>[Signature]</i>	<i>[Signature]</i>						3 OF 23
DATE 19.10.96	DATE 19.10.96	DATE 20/10/96	22/10/96						
CM II /PDO	/PDO	HOS/PDO	DO/PDO	PDO REF	ISSUE	DATE	SIGN		

PLANNING SHEET - P&TE/CEP

NOMENCLATURE

SPACER

DRAWING No.

20-63-10-6

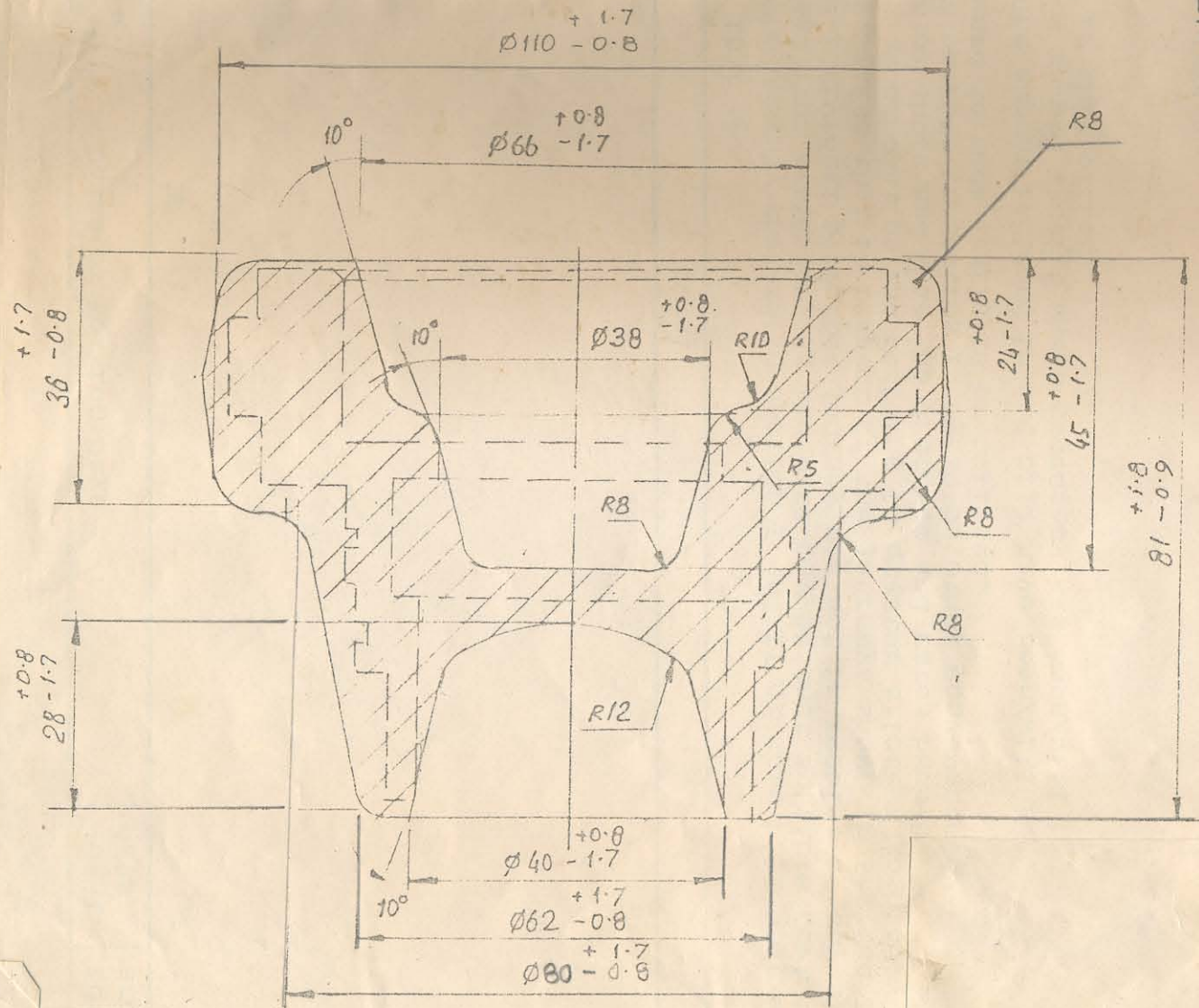
ISSUE

OPN. No.

00

OPERATION

FORGING



MATL: STEEL 45X GOST 4543-71

HARDNESS: BHN: 241-170

(INDENTATION  $\phi 3.9$  -  $4.6$  mm)

NOTE:-

1. UNSPECIFIED DRAFT SHOULD NOT BE MORE THAN  $6^\circ$
2. MISMATCH ALONG PARTING LINE SHOULD NOT EXCEED  $1$  mm
3. UNSPECIFIED RADII SHOULD BE R 2.5 mm.
4. FLASH PROTRUSION SHOULD NOT BE MORE THAN  $1$  mm.

CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P & T E / CEP

NOMENCLATURE

SPACER

DRAWING No.

20-63-10-6

ISSUE

OPN. No.

010

OPERATION

TURNING

MACHINE: CENTRE LATHE  
HMT NH 26/1000

Ra 10

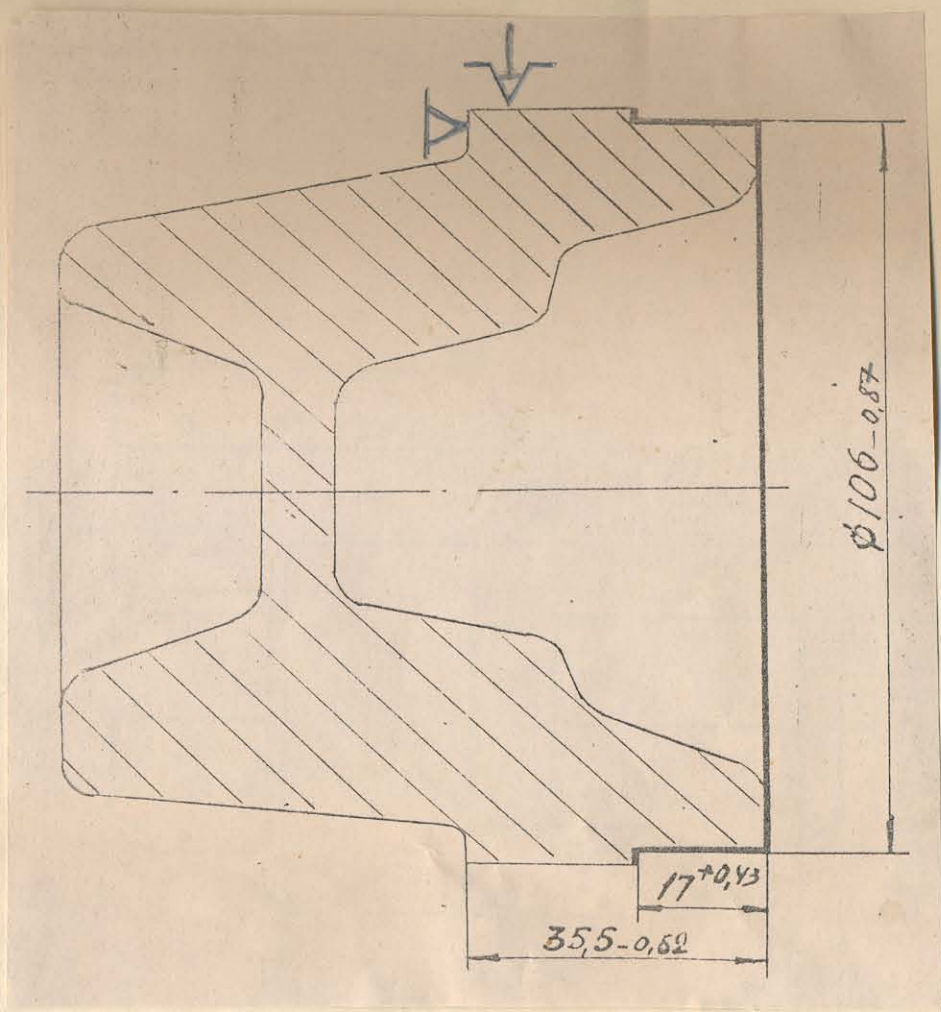
STD. TOOLS & GAUGES

FACING & TURNING PC LMR  
TOOL HOLDER 2525 M12

INSERT CNMG  
120408  
1135

SPECIAL TOOLS & GAUGES

HARD JAWS



CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P & T E / CER

FORM No: ET 15.039

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-6

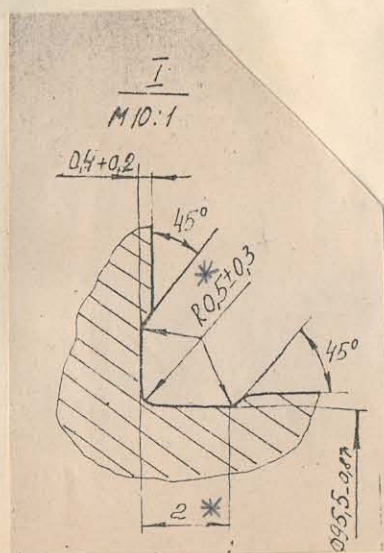
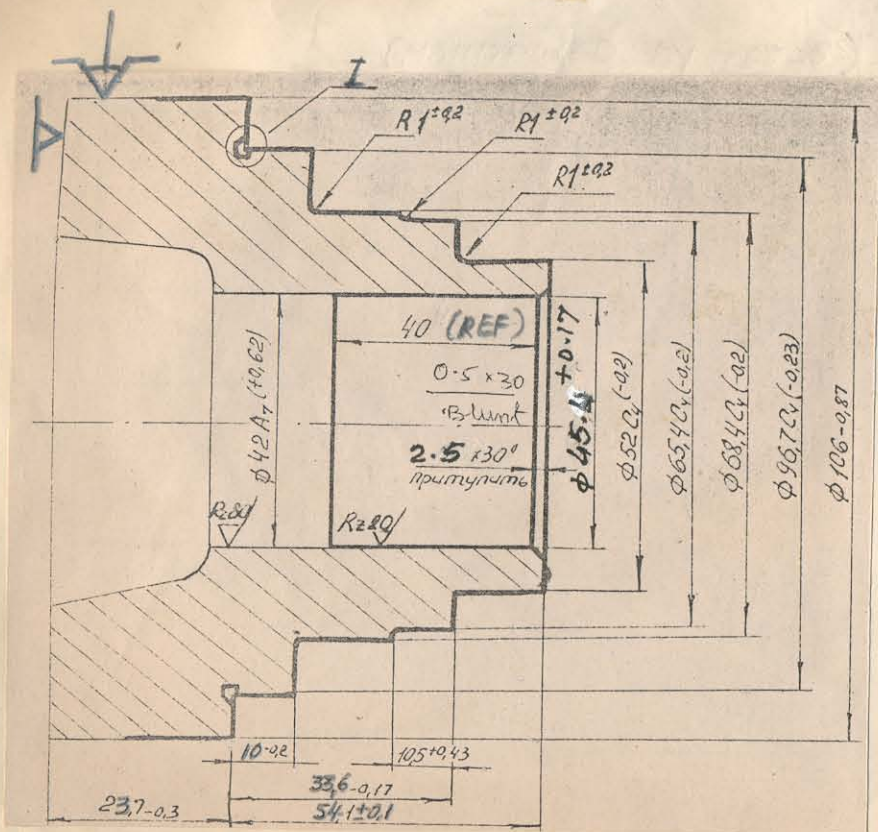
ISSUE

OPN. No.  
020

OPERATION  
TURNING

Ra 10 (✓)

MACHINE: CNC LATHE  
HMT GDM 65/2A



\* TO BE MAINTAINED BY TOOLS.

STD. TOOLS & GAUGES

TURN & FACE TOOL HOLDER	PCPNR 2525M12
INSERT	CNMG 120408
BORING TOOL HOLDER	SB2+ UPCLNR12
INSERT	CNMG 120408 TK35
BW DRILL $\phi 40$	SCMM 120412TR

SPECIAL TOOLS & GAUGES

OD - V/CUT TOOL HOLDER	W3373 44R
INSERT	W425087

SNAP GAUGES FOR  $\phi 52 - 0.2$

$\phi 52 - 0.2$	025/04/116
$\phi 65.4 - 0.2$	026/01/120
$\phi 68.4 - 0.2$	026/01/121
$\phi 96.7 - 0.23$	026/02/29

PLUG GAUGES FOR  $\phi 44.8 \pm 0.175$

$\phi 44.8 \pm 0.175$	020/03/40
GAUGES FOR $54.1 \pm 0.1$	030/107
AND $33.6 - 0.17$	030/108

CM		
PRED.	CHD.	APPD



PLANNING SHEET-P&TE/CERFORM No: EF 3/P-009

NOMENCLATURE

SPACER

DRAWING No.

20-63-10-6

ISSUE

OPN. No.

040

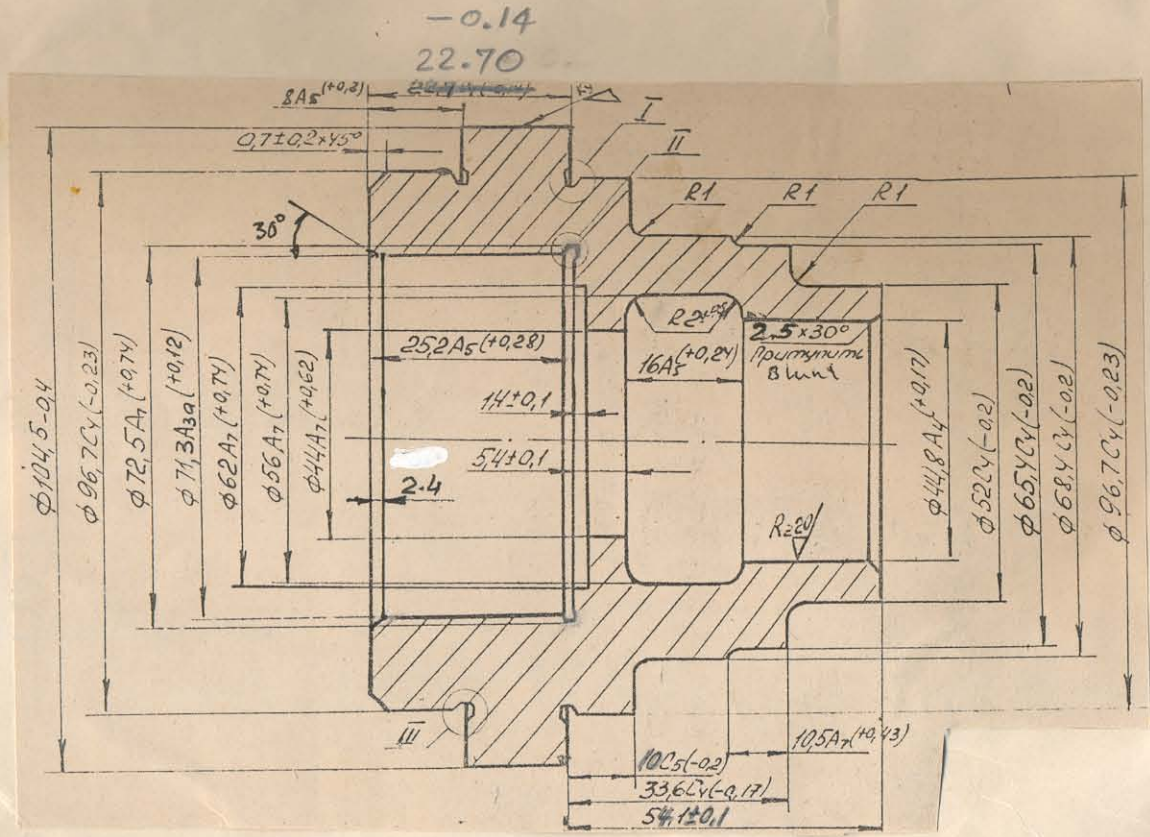
OPERATION

INSPECTION

Raj

MACHINE:

STD. TOOLS&GAUGES



SPECIAL TOOLS&GAUGES

- PLUG GAUGE  
 &  $\phi 71.3 \pm 0.12$  23/53  
 GAP GAUGE  
 $\phi 96.7 - 0.123$  026/02/29  
 $22.7 - 0.114$  024/26  
 GAUGE FOR  
 $8 \pm 0.2$  030/109  
 $10 - 0.2$   
 $33.6 - 0.17$  030/108  
 $54.1 \pm 0.1$  030/107  
 SNAP GAUGE  
 $\phi 52.0 - 0.2$  025/04/116  
 $\phi 65.7 - 0.2$  026/01/120  
 $\phi 68.4 - 0.2$  026/01/121

CM		
PRED.	CHD.	APPD

PLANNING SHEET - P & T E / C E R F O R M N O : E F 8 / P - 0 0 9

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-6

ISSUE

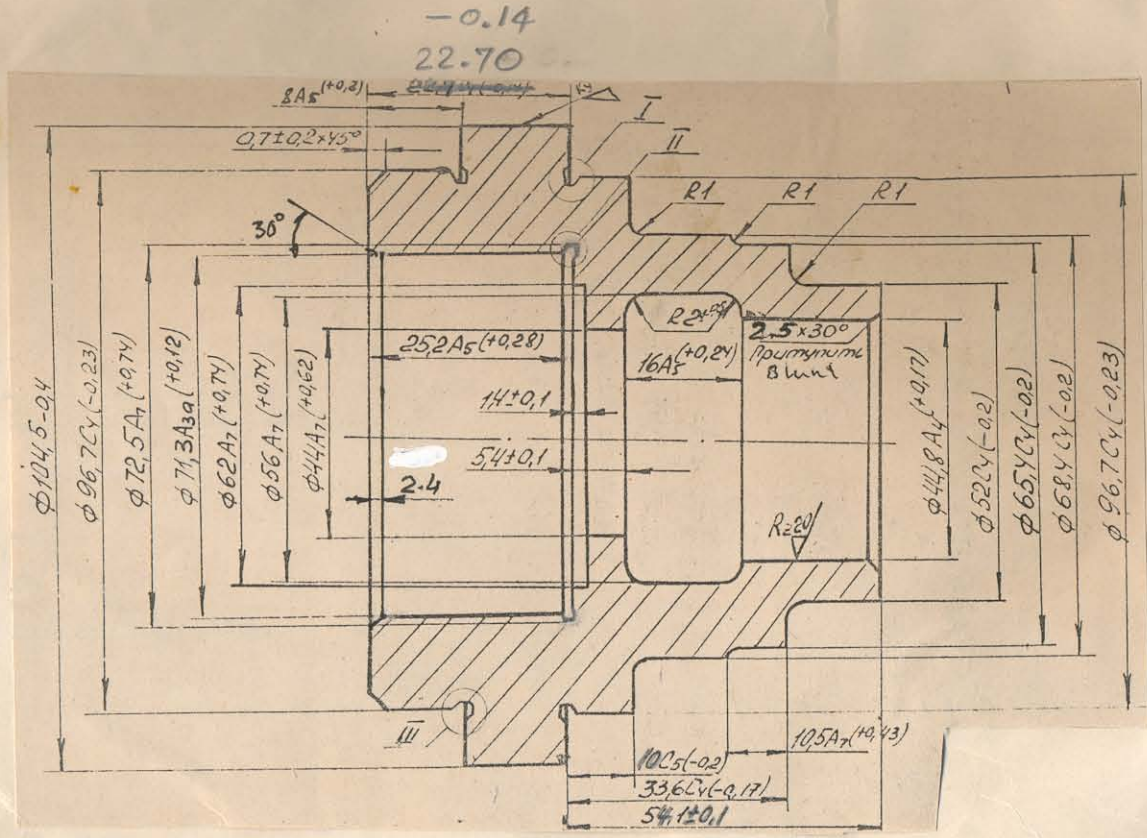
OPN. No.  
040

OPERATION  
INSPECTION

*Ra 10*

MACHINE:

STD. TOOLS & GAUGES



SPECIAL TOOLS & GAUGES

- PLUG GAUGE
- FOR  $\phi 71.3 \pm 0.12$  23/53
- GAP GAUGE
- $\phi 96.7 - 0.123$  026/02/29
- $22.7 - 0.14$  024/26
- GAUGE FOR
- $8 \pm 0.2$  030/109
- $10 - 0.2$
- $33.6 - 0.17$  030/108
- $54.1 \pm 0.1$  030/107
- SNAP GAUGE
- $\phi 52.0 - 0.2$  025/04/116
- $\phi 65.4 - 0.2$  026/01/120
- $\phi 68.4 - 0.2$  026/01/121

CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET-P&TE/CEP FORM No: EFA/P-039

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-6

ISSUE

OPN. No.  
040

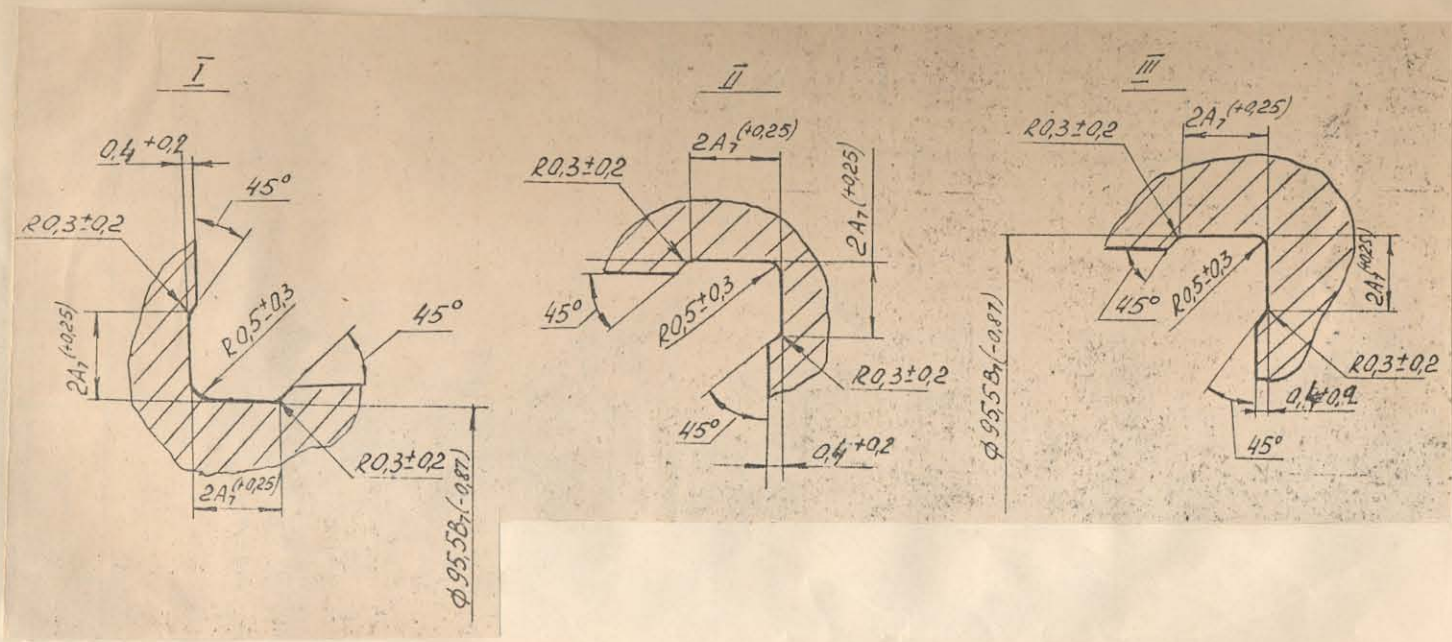
OPERATION  
INSPECTION

MACHINE:

STD. TOOLS&GAUGES

SPECIAL TOOLS&GAUGES

R10/



NOTE :- GROOVE DIMNS. ARE TO BE ENSURED WITH CUTTING TOOLS.

CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P & TE / CEP

FORM No: EFA/P-039

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-B

ISSUE

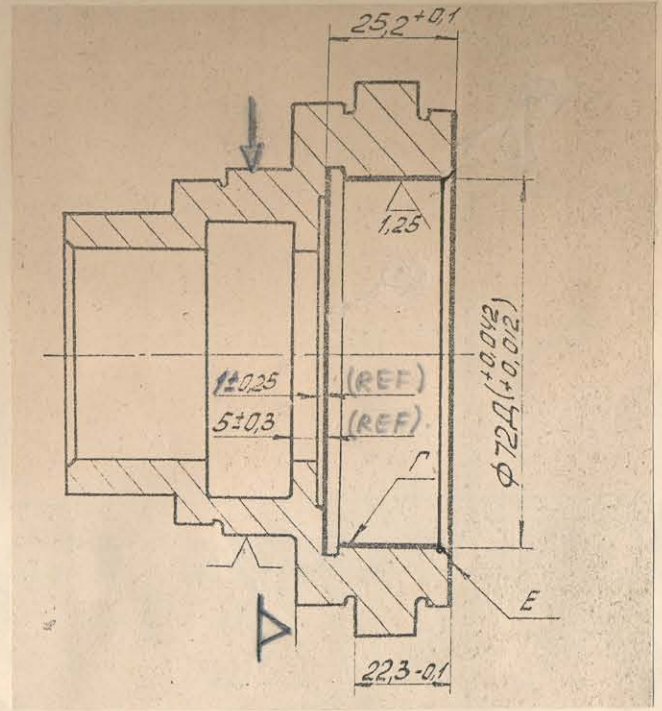
OPN. No.  
070

OPERATION  
GRINDING

MACHINE: INT. GRINDER  
NOVA

Ra 2.5 / (Ra 1.25)

STD. TOOLS & GAUGES



NOTE:- RUNOUT OF BUTTEND "E" WITH RESPECT TO SURFACE "P" SHOULD NOT EXCEED 0.02 mm. ON  $\phi 92$ .

SPECIAL TOOLS & GAUGES

PLUG GAUGE $\phi 72^{+0.042}$ $+0.012$	023/54
GAP GAUGE $22.3 - 0.1$	024/27
DEPTH GAUGE $25.2^{+0.1}$	030/110
SOFT JAWS	
INSPECTION } MANDREL }	081/00/34

cm	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET-P&TE/CEP  
FORM No. EP 8 / P-039

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-6

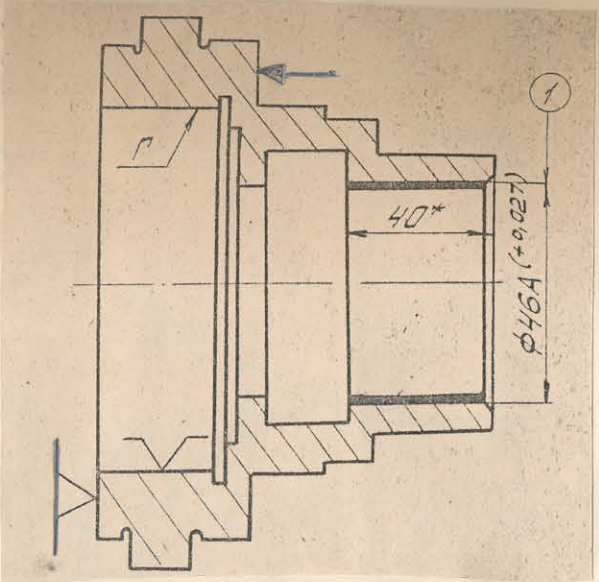
ISSUE

OPN. No. 080  
OPERATION GRINDING

Ra 2,5

MACHINE: INT. GRINDER  
NOVA

STD. TOOLS & GAUGES



TECH. REQUIREMENT

1. RUNOUT OF SURFACE ① WITH RESPECT TO AXIS OF SURFACE ' $\Gamma$ ' SHOULD NOT BE MORE THAN 0,15mm.

NOTE

\* DIMENSION IS GIVEN FOR REFERENCE.

SPECIAL TOOLS & GAUGES

PLUG GAUGE  
 $\phi 46^{+0,027}$   
SOFT JAWS  
20/10/3

CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P & T EX (REP) EFA/P-039

LATURE

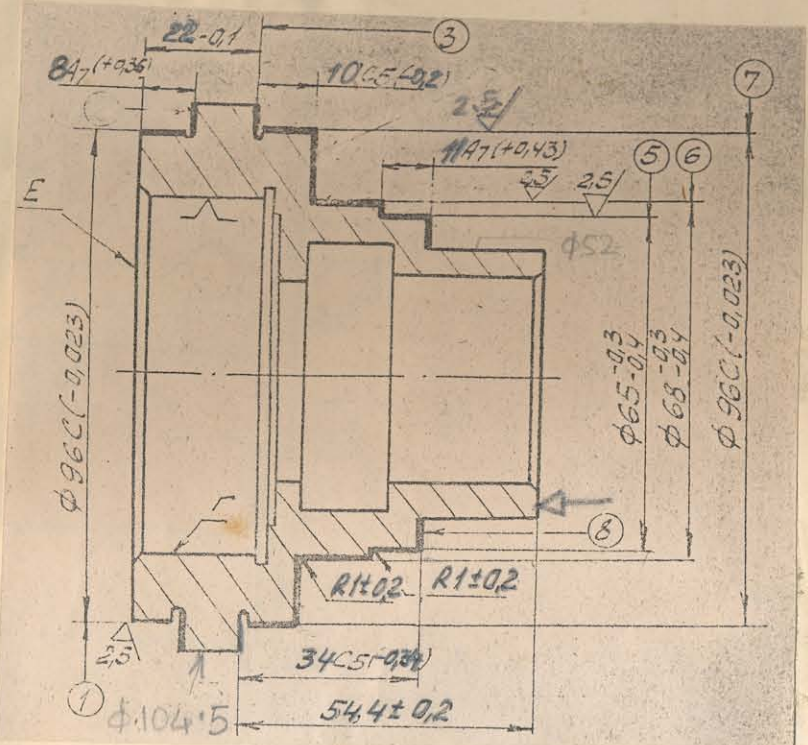
SPACER

DRAWING No.  
20-63-10-6

ISSUE

OPN. No.  
110

OPERATION  
GRINDING



Ra 2.5 (✓) (✓)

MACHINE: CYL. GRINDER  
HMT G, 17/1200 P.

SPL. STD. TOOLS & GAUGES	
PLAIN GAP GAUGE 11 +0.43	030/00/125
PLAIN GAP GAUGE 34 -0.24	020/00/126
PLAIN GAP GAUGE 65 -0.3 68 -0.4	026/01/134
PLAIN GAP GAUGE 68 -0.3 68 -0.4	026/01/135

TECH. REQTS

1. RUNOUT OF SURFACE ⑦ WITH RESPECT TO AXIS OF SURFACE 'E' SHOULD NOT EXCEED 0.04 mm. AND SURFACE ① SHOULD NOT EXCEED 0.05 mm.
2. RUNOUT OF SURFACES ⑥ AND ⑤ WITH RESPECT TO AXIS OF SURFACE ⑦ SHOULD NOT EXCEED 0.05 mm.
3. NON-PARALLELISM OF SURFACES "E" AND ③ SHOULD NOT EXCEED 0.02 mm ON OVER A LENGTH OF 102 mm.

SPECIAL TOOLS & GAUGES	
SNAP GAUGE φ 96 - 0.023	026/02/10
WIDTH GAUGE 22 - 0.1	024/00/28
GAUGE FOR 10 - 0.2	030/11
54.4 ± 0.2	030/12
MANDREL (ALT.)	011/3
GRINDING MANDREL }	081/00/34

CM	<i>[Signature]</i>	
PRED.	CHD.	APPD

PLANNING SHEET - P & T E / CEP

FORM No: EFA/P-039

NOMENCLATURE

SPACER

DRAWING No.

20-63-10-6

ISSUE

OPN. No.

120

OPERATION

GROOVING

MACHINE: CNC LATHE

HMT GDM 65/2A

Ra 5 ✓

STD. TOOLS & GAUGES

INSERT

GROOVING TOOL  
HOLDER

69327-10  
41410

INSERT

44415820  
TTS

TURNING TOOL PC-LNR 2525M12

INSERT CNMG 120408

SPECIAL TOOLS & GAUGES

GROOVE WIDTH  
GAUGE 3.1<sup>+0.3</sup>

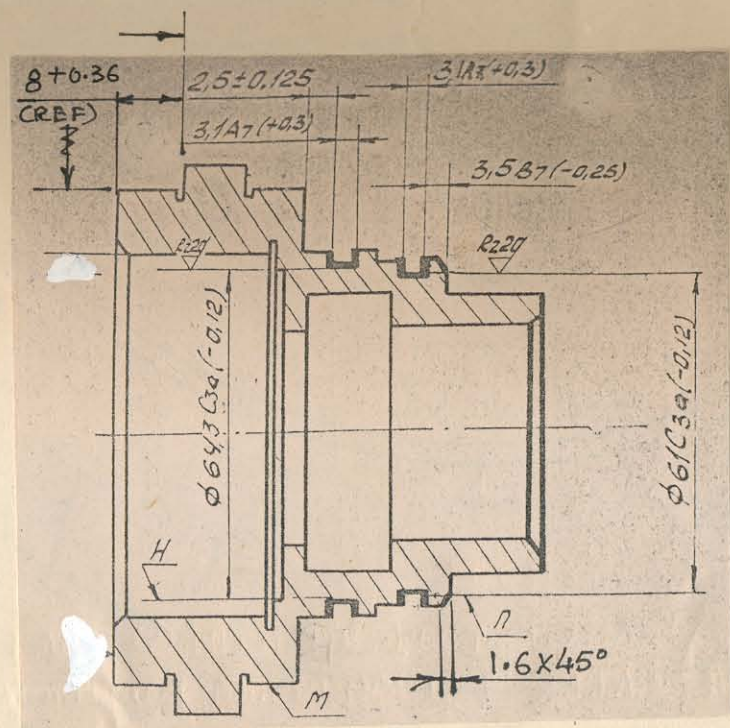
028/41

GROOVE SNAP  
GAUGE  $\phi 61.0$

026/01/25

$\phi 64.3$  026/01/26

SOFT JAWS



TECH. REQ.

RUNOUT OF SURFACES 'H' AND 'N' WITH RESPECT TO AXIS OF SURFACE 'M' SHOULD NOT EXCEED 0.15mm.

em	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P & T E / CEP

DESCRIPTIVE NOMENCLATURE

SPACER

DRAWING No. 20-63-10-6

ISSUE

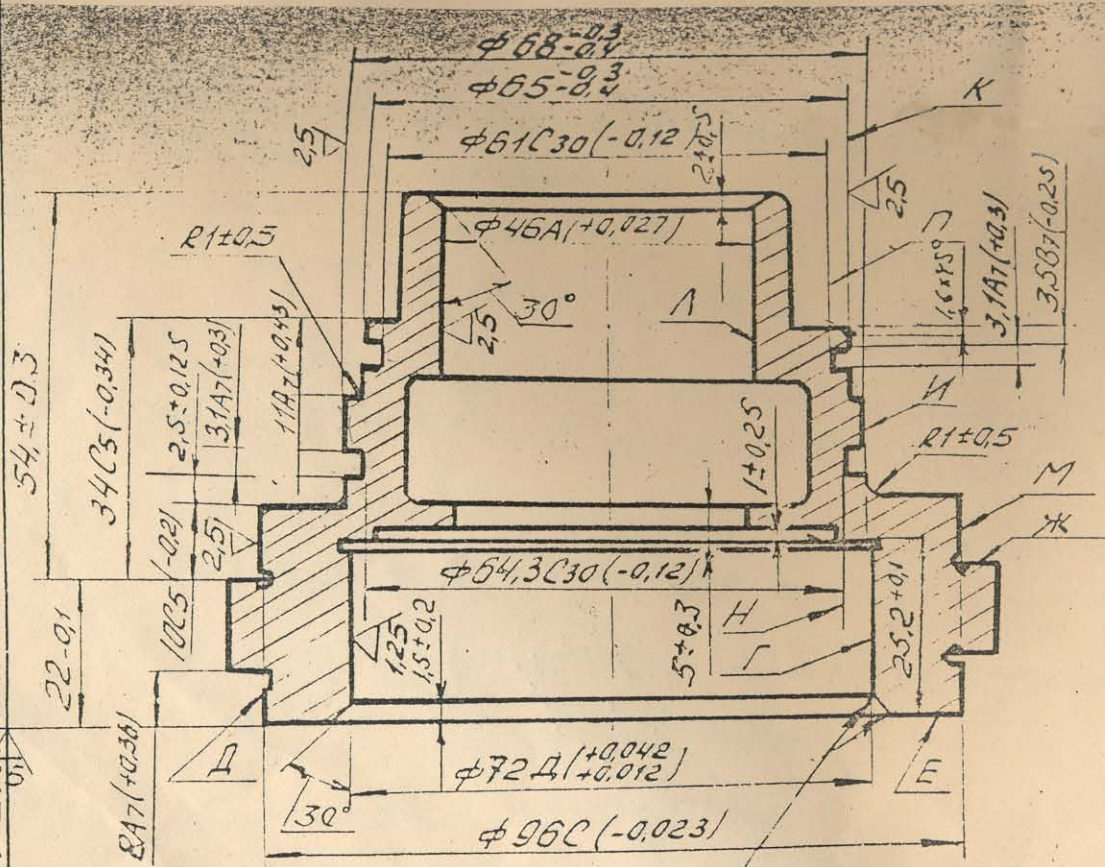
No. 140 PER IN INSPECTION

MACHINE:

STD. TOOLS & GAUGES

SPECIAL TOOLS & GAUGES

INSPECTION MANDREL } 081/00/34



$R0.3 \pm 0.2$   
 none problems Polish

CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED	CHD	APPD

MACHINE:

STD. TOOLS & GAUGES

- 1) - Run out of surface M should not exceed 0.04 mm,  
 - run out of surface N should not exceed 0.05 mm,  
 - run out of surface E should not exceed 0.02 mm  
 on  $\phi 92$  mm with respect to axis of surface N.
- 2) Run out of surfaces N and K should be maximum  
 of 0.05 mm with respect to axis of surface M
- 3) Non-parallelism of surfaces E and K should be  
 maximum 0.02 mm over length of 100 mm
- 4) Run out of surface L should be maximum 0.15 mm  
 with respect to axis of surface N
- 5) Run out of surfaces H and N should be maximum 0.15 mm  
 with respect to axis of surface M

SPECIAL TOOLS & GAUGES

CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED	CHD	APPD

PLANNING SHEET - P & T E / CEP

SPACE

20-03-10-6

150 DRILLING

MACHINE: CNC LATHE  
GDM 65/2A

Ra 5

STD. TOOLS & GAUGES

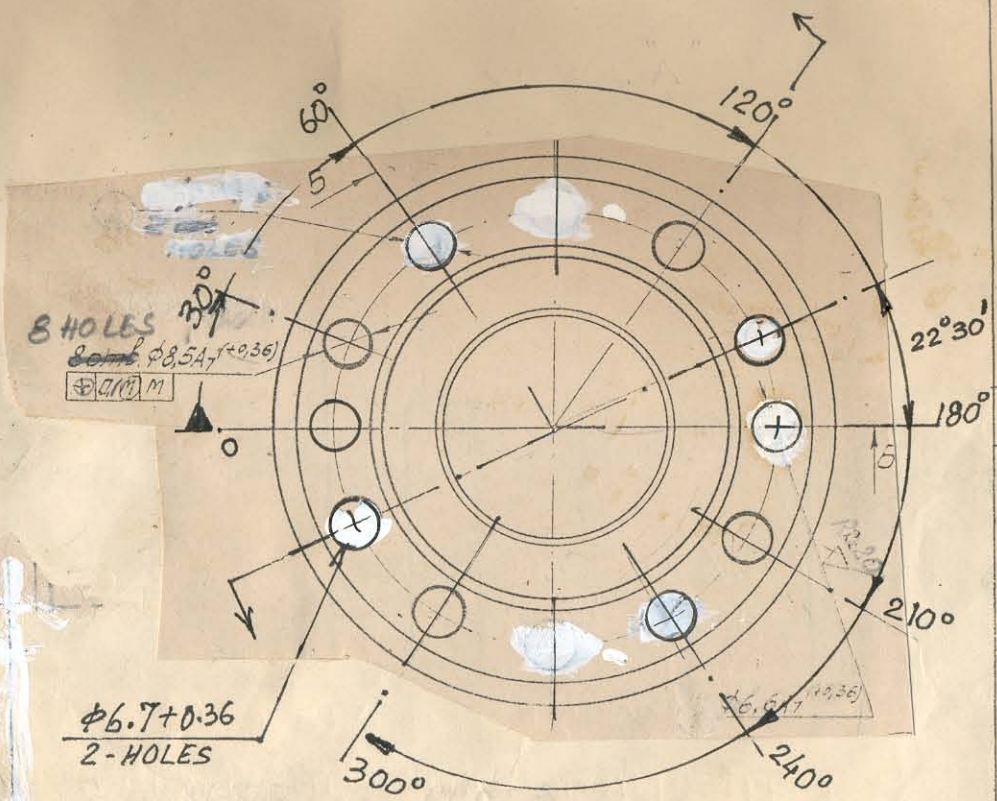
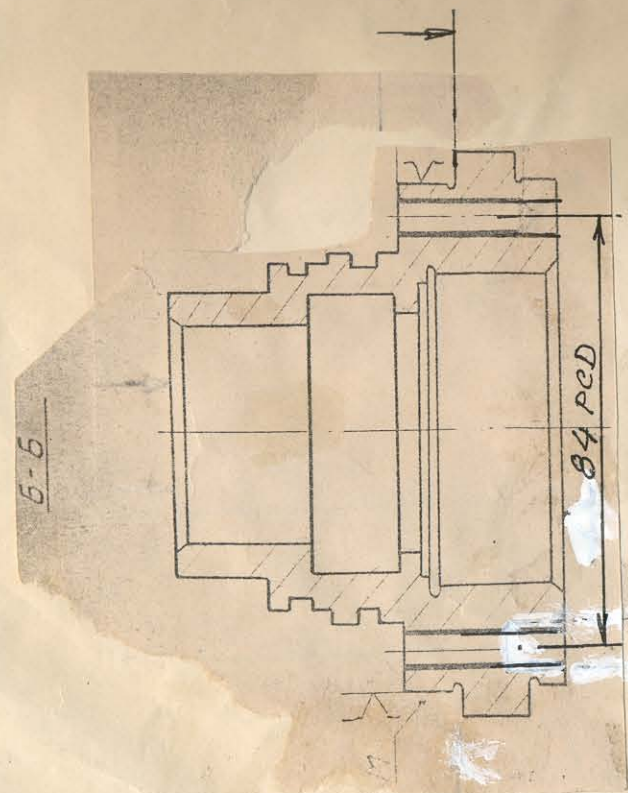
DRILL  $\phi 6.7$   
 $\phi 8.5$   
 $\phi 6.6$

SPECIAL TOOLS & GAUGES

DRILL JIG (for R/DRILL M/e) 201130

DRILL JIG  $\phi 6.7 \times 27$  201132

GAUGE TO CHECK CO-ORDINATION OF HOLES  $\phi 8.5$  203058



NOTE:  $\phi$  = DIMENSION OF TOLERANCE.

CM	<i>[Signature]</i>	
PRED.	CHD.	APPD

PLANNING SHEET - P&TE/CEP

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-6

ISSUE

OPN. No.  
160

OPERATION  
COUNTER  
SINKING

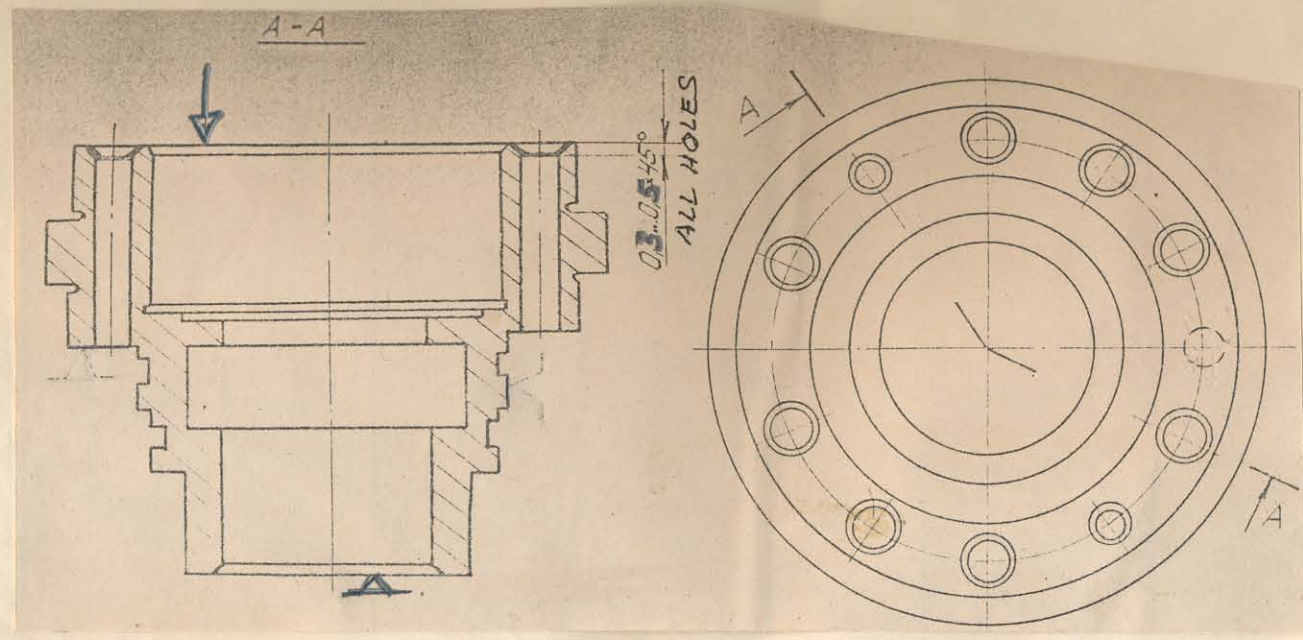
Ra5 ✓

MACHINE:  
RADIAL DRILLING  
M/C. HMT RM63

STD. TOOLS & GAUGES

COUNTER  
SINKING CUTTER 90°

SPECIAL TOOLS & GAUGES



CM		
PRED.	CHD.	APPD

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-6

ISSUE

OPN. No.  
170

OPERATION  
C' BORING &  
C' SINKING &  
DRILLING

RA 5

MACHINE:  
RADIAL DRILLING  
M/C HMT RM63

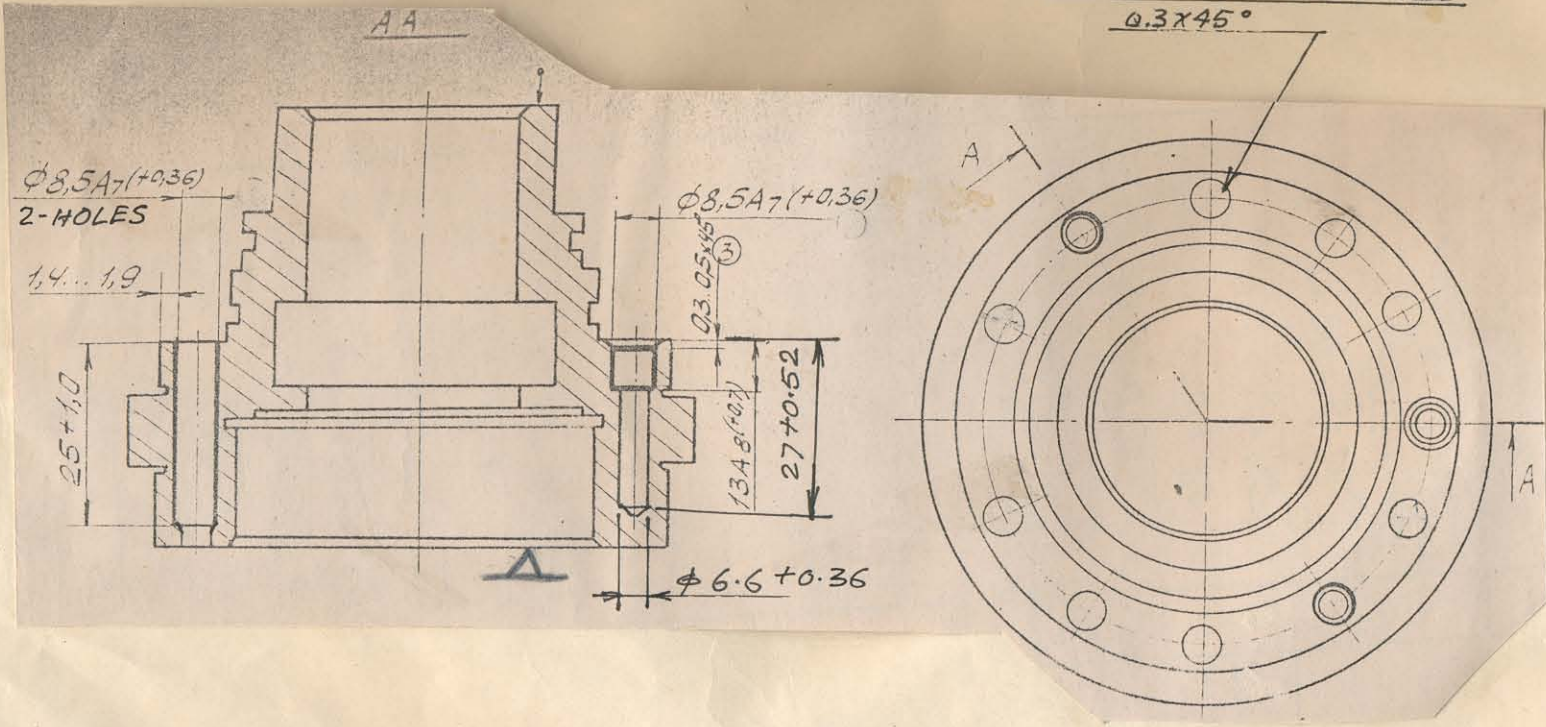
STD. TOOLS & GAUGES

DRILL  $\pm 6.6$   
DRILL  $\pm 8.5$   
C'SK CUTTER  $90^\circ$

SPECIAL TOOLS & GAUGES

DRILL JIG } 201352  
COUNTER }  
BORING TOOL } 013/22  
WITH PILOT }  
PLUG GAUGE }  
GAGES }  
? }

To BE CHAMFERED ALL HOLES  
 $0.3 \times 45^\circ$



CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P&TE/CEP

NOMENCLATURE

SPACER

DRAWING No.

20-63-10-6

ISSUE

OPN. No.

180

OPERATION

TAPPING

Ras ✓

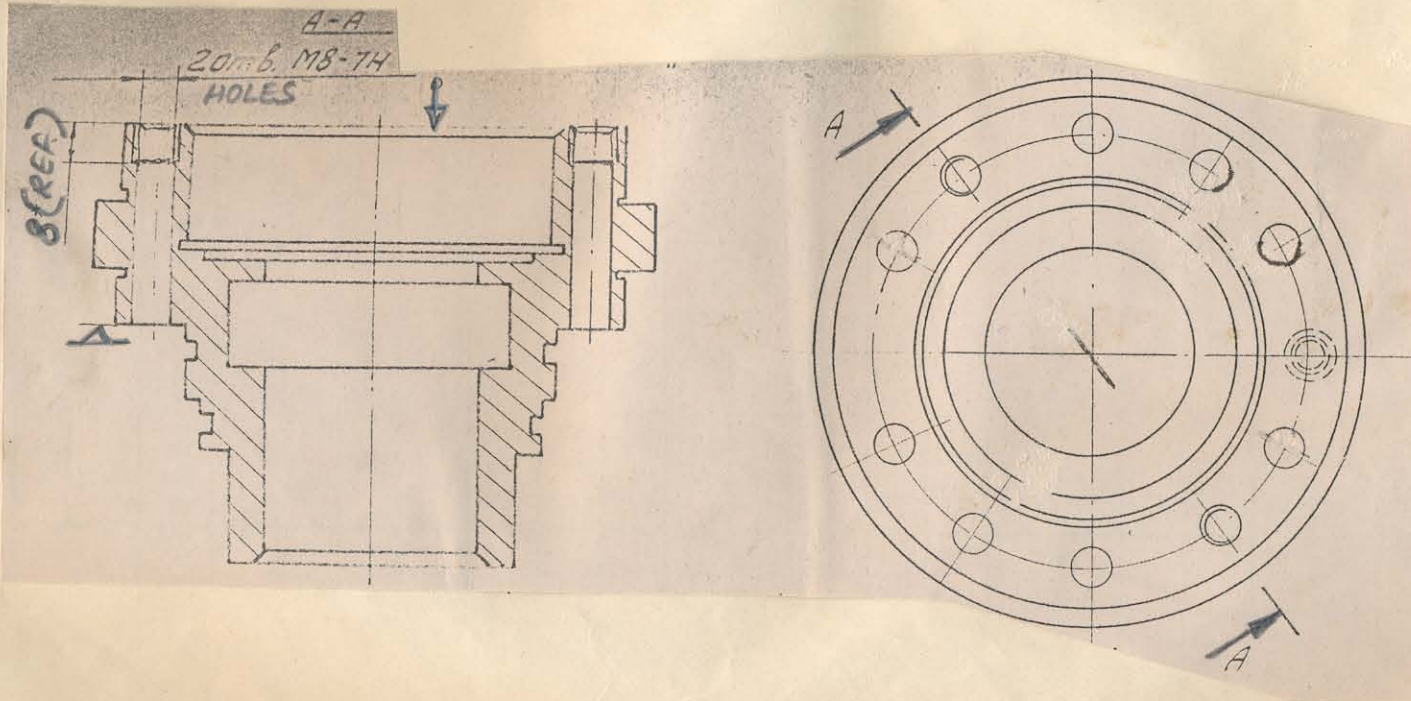
MACHINE: RADIAL DRILLING  
M/C. HMT RM 63

STD. TOOLS&GAUGES

TAP FOR  
M8X1.25 -7H  
SCREW PLUG  
GAUGE  
FOR M8X1.25-7H  
TAPPING  
ATTACHMENT.

SPECIAL TOOLS&GAUGES

TAPPING  
ATTACHMENT  
TAP  
PLUG GAUGE  
FOR M8X1.25



CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

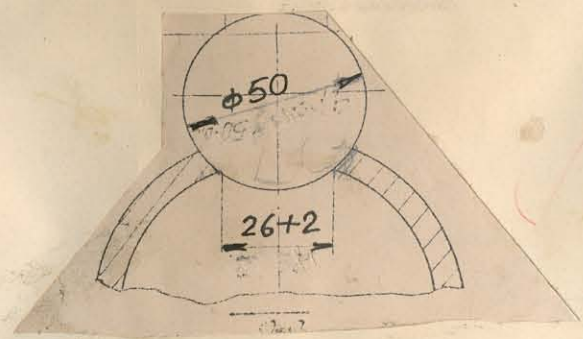
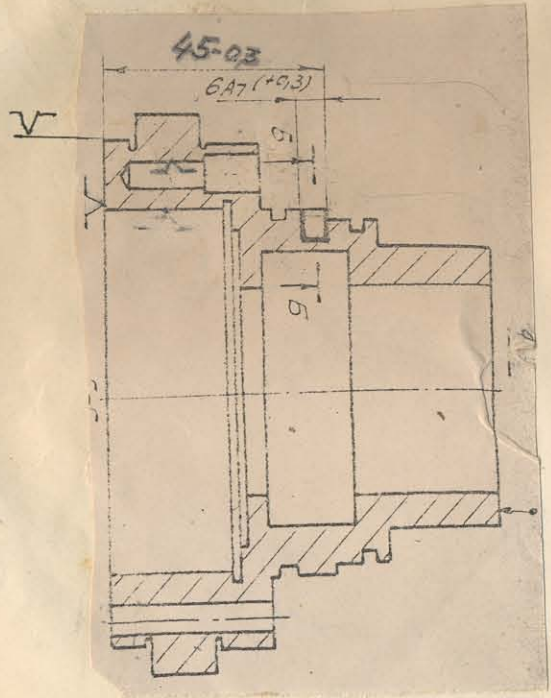
PLANNING SHEET-P&TE/CEP

MACHINE: CNC LATHE  
GDM 65/2A

Ratio  
▽

STD. TOOLS&GAUGES

SIZE 2 FILE  
201510



SPECIAL TOOLS&GAUGES

(ALT) FIXTURE → 20129  
(FOR MILLING M/C)

SPECIAL STUB MILLING ARBOR 20151

GAUGE FOR 45-013. 051/25

(ALT) HOLDING FIXTURE 20136  
(FOR CNC M/C)

T-SLOT MILLING CUTTER  $\phi 50 \times 6$  010/01/01

CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

NOMENCLATURE

SPACER

DRAWING No.  
20-63-10-6

ISSUE

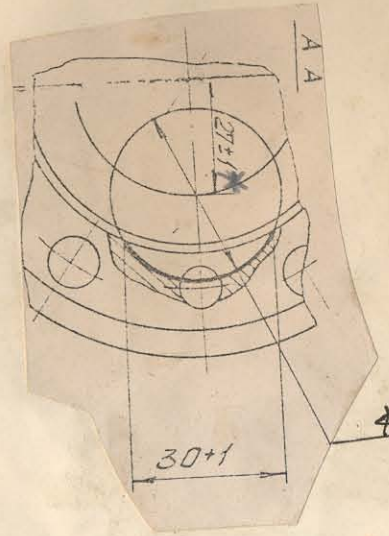
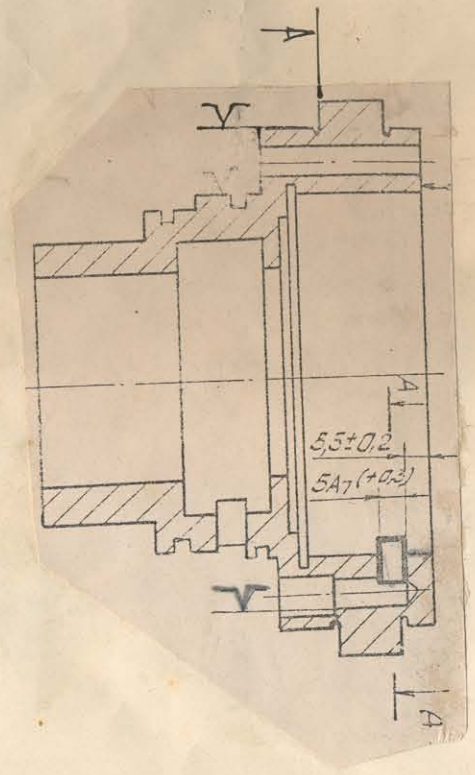
OPN. No.  
200

OPERATION  
MILLING

PAIO

MACHINE: CNC LATHE  
GDM 65/2A

STD. TOOLS & GAUGES



NOTE:- \* - REFERENCE DIMENSION

SPECIAL TOOLS & GAUGES

- (ALT.) FIXTURE (FOR MILLING) 201131
- WOODRUFF CUTTER, STAGGERED TEETH (HSS) 010/09/00
- WOODRUFF CUTTER (HSS) 010/09/00
- KEY THICKNESS GAUGE 029/42
- 5  $\pm 0.3$
- POSITIONAL GAUGE FOR KEY 025/01/97
- 5.5  $\pm 0.2$
- WOODRUFF KEY SLOT 010/02/00
- MILLING CUTTER (CARBIDE TIPPED)

CM	DR. P. S.	W. S.
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PREP	CHK	APPD
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FORM No: EFA/P-039  
PLANNING SHEET-P&TE/CEP

NOMENCLATURE

SPACER

DRAWING No.

20-63-10-6

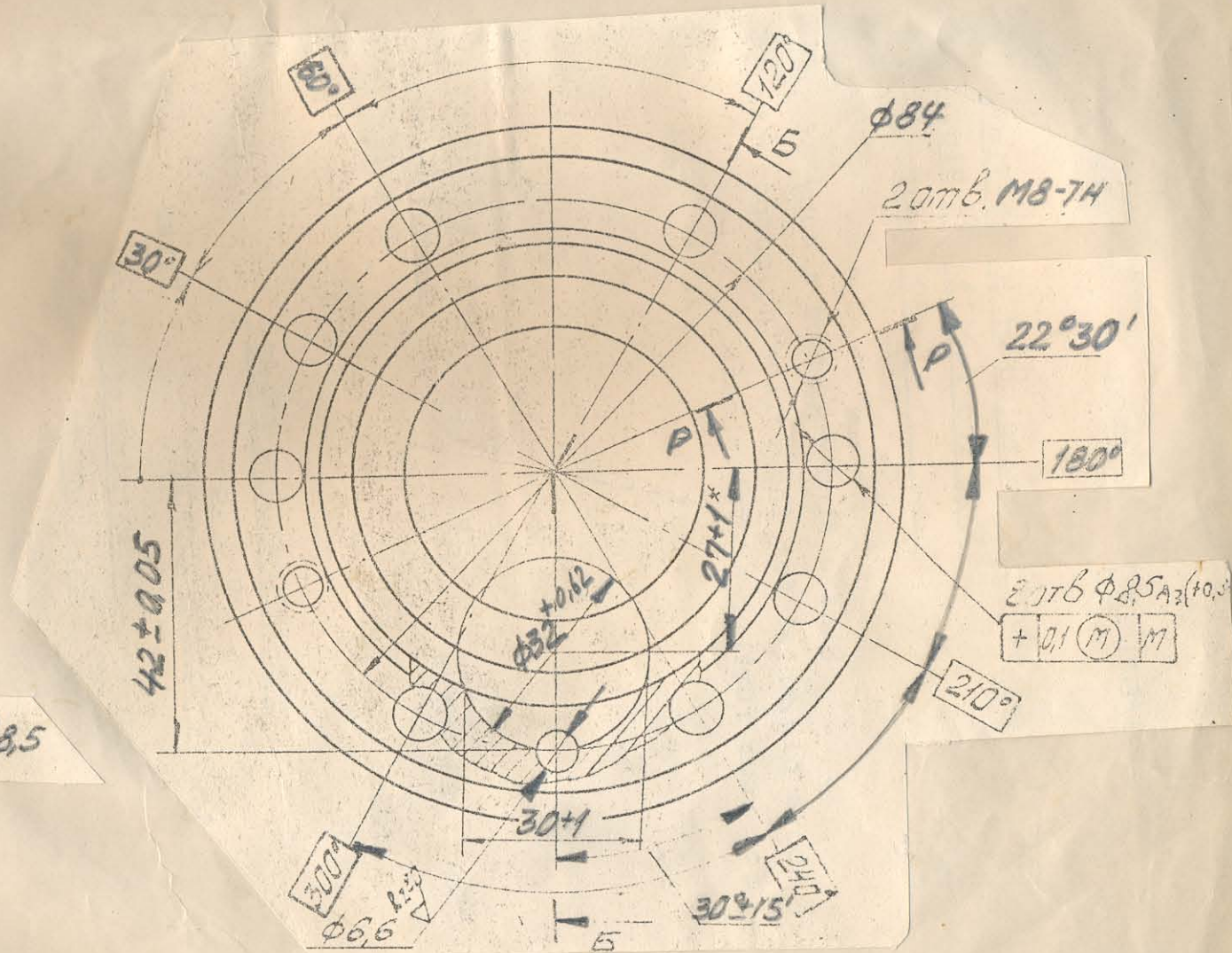
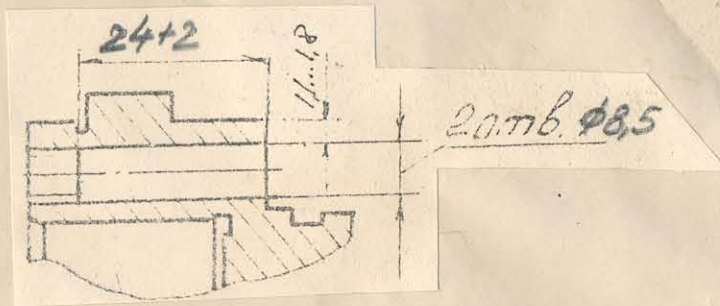
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OPN. No.

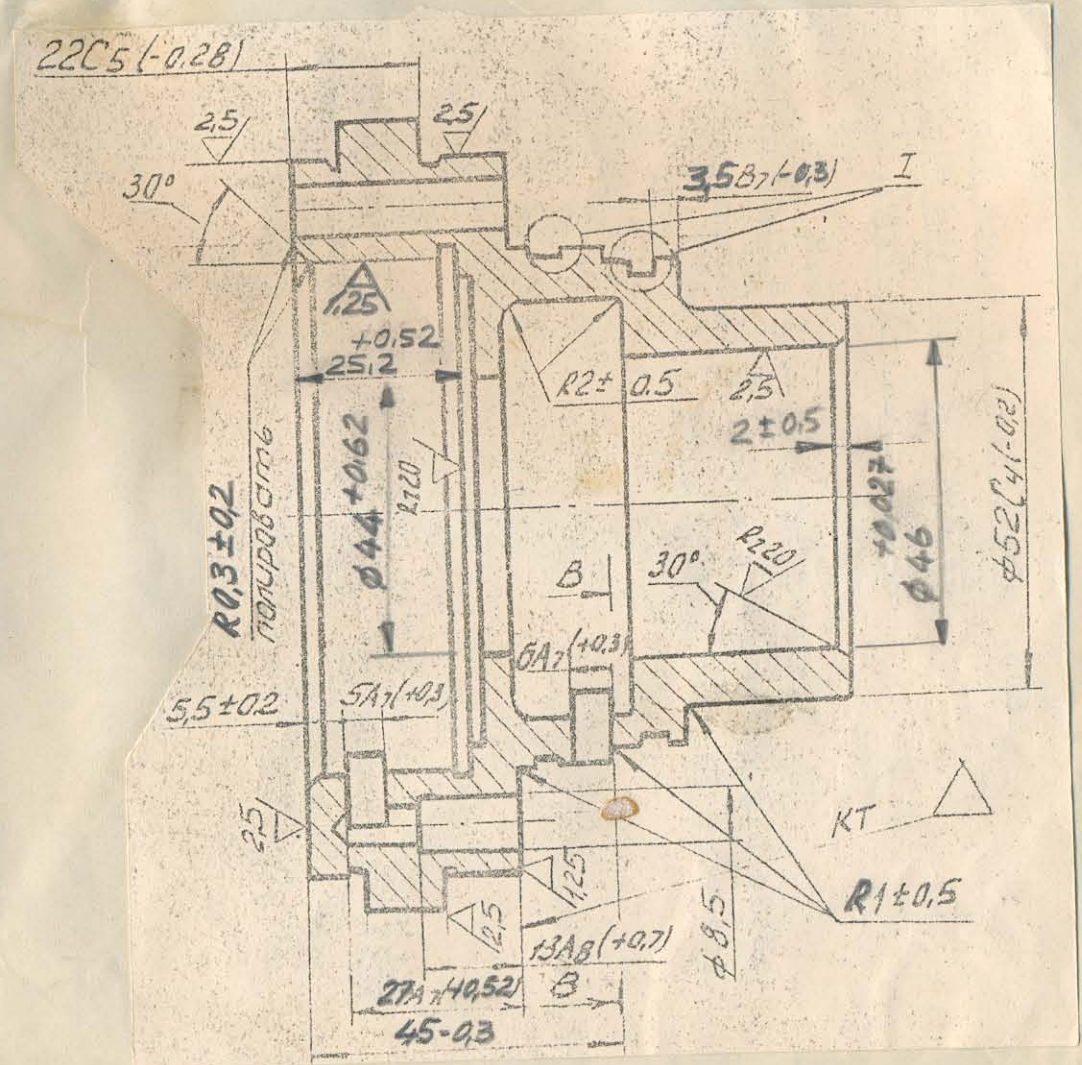
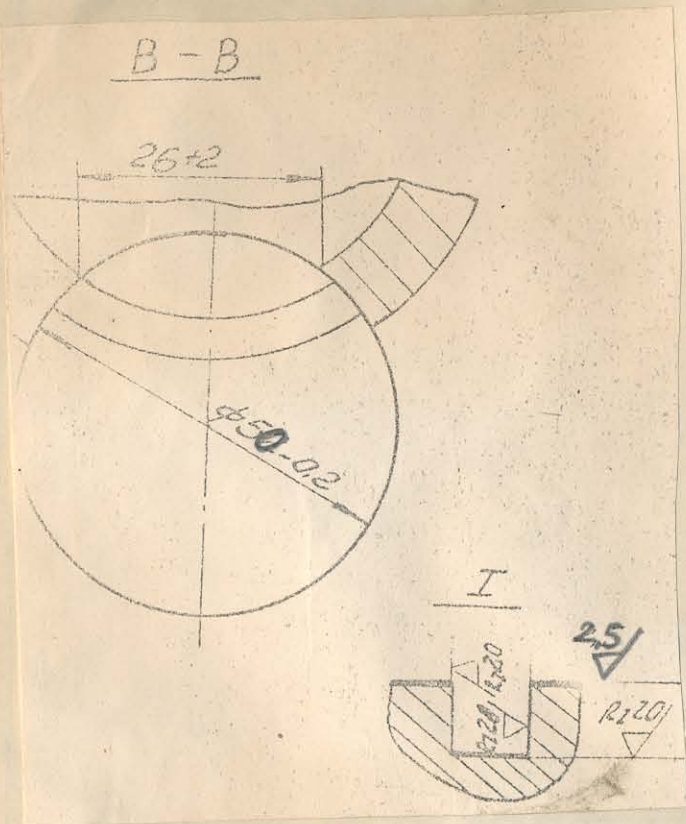
220

OPERATION

INSPECTION



CM		
PRED.	CHD.	APPD



CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P&TE / CE FORM No: EFA/P-039

NOMENCLATURE

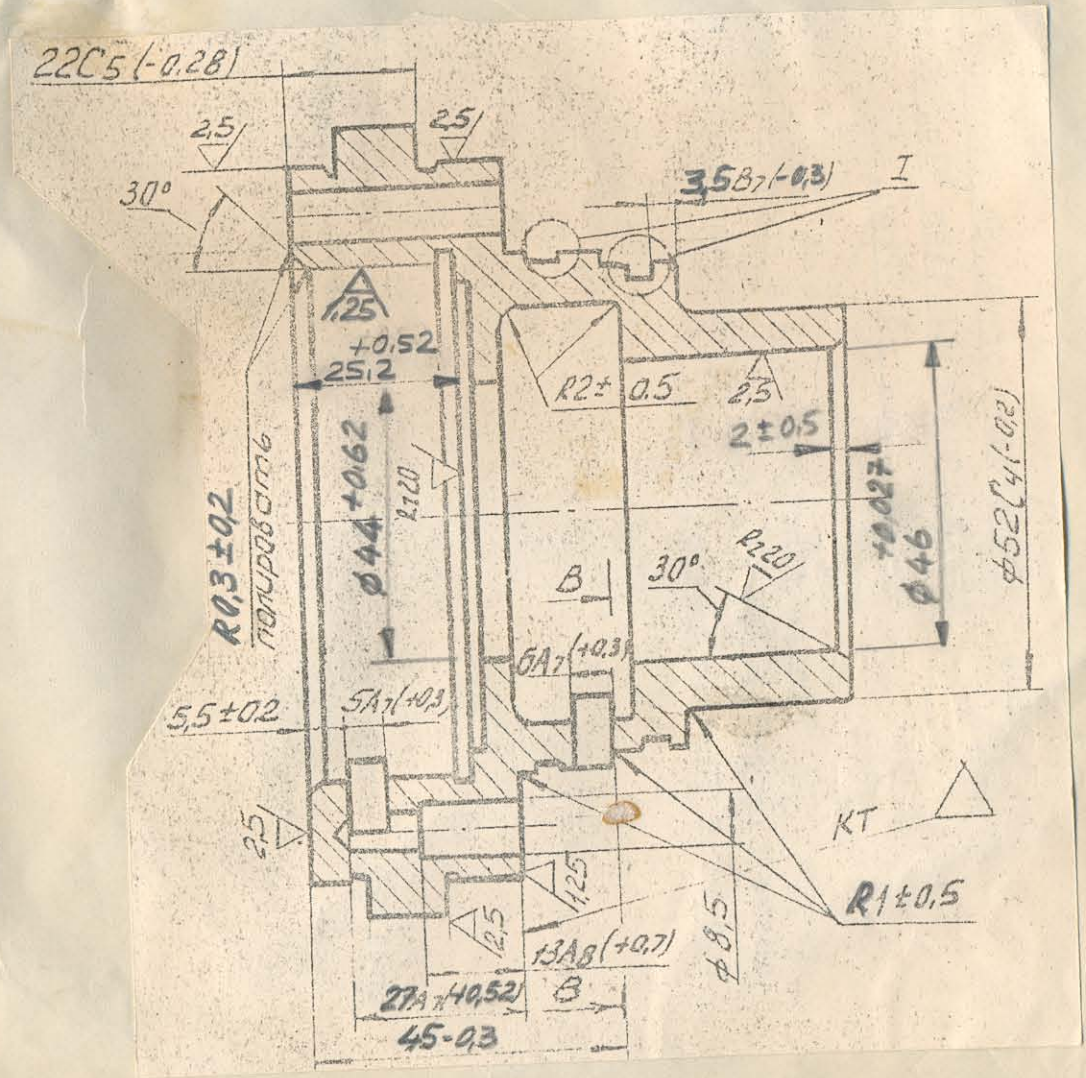
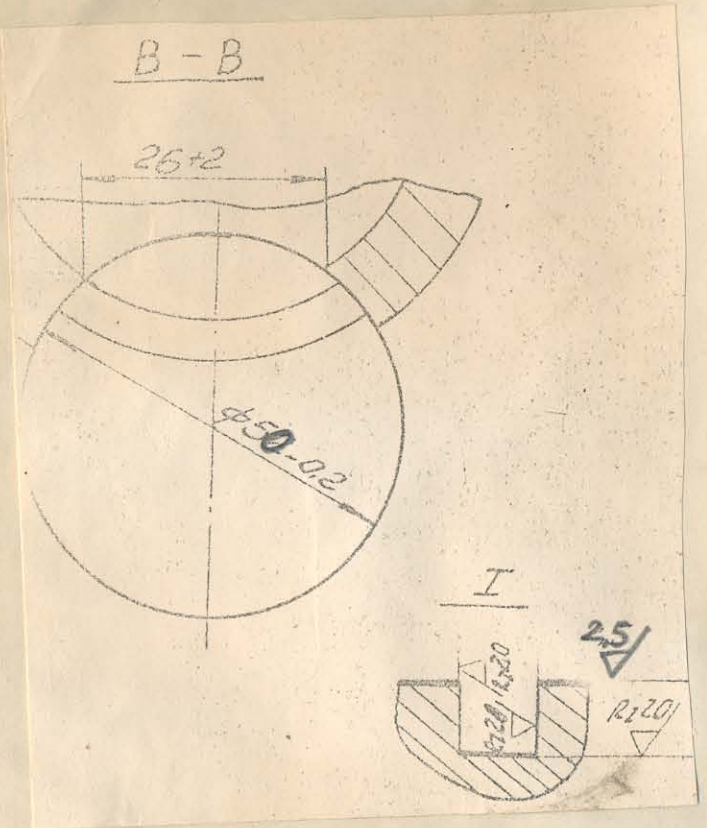
SPACER

DRAWING No.  
20-63-10-6

ISSUE

OPN. No.  
220

OPERATION  
INSPECTION



CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD

PLANNING SHEET - P&TE / CEFORM No: EF A / P-039

171  
NOMENCLATURE

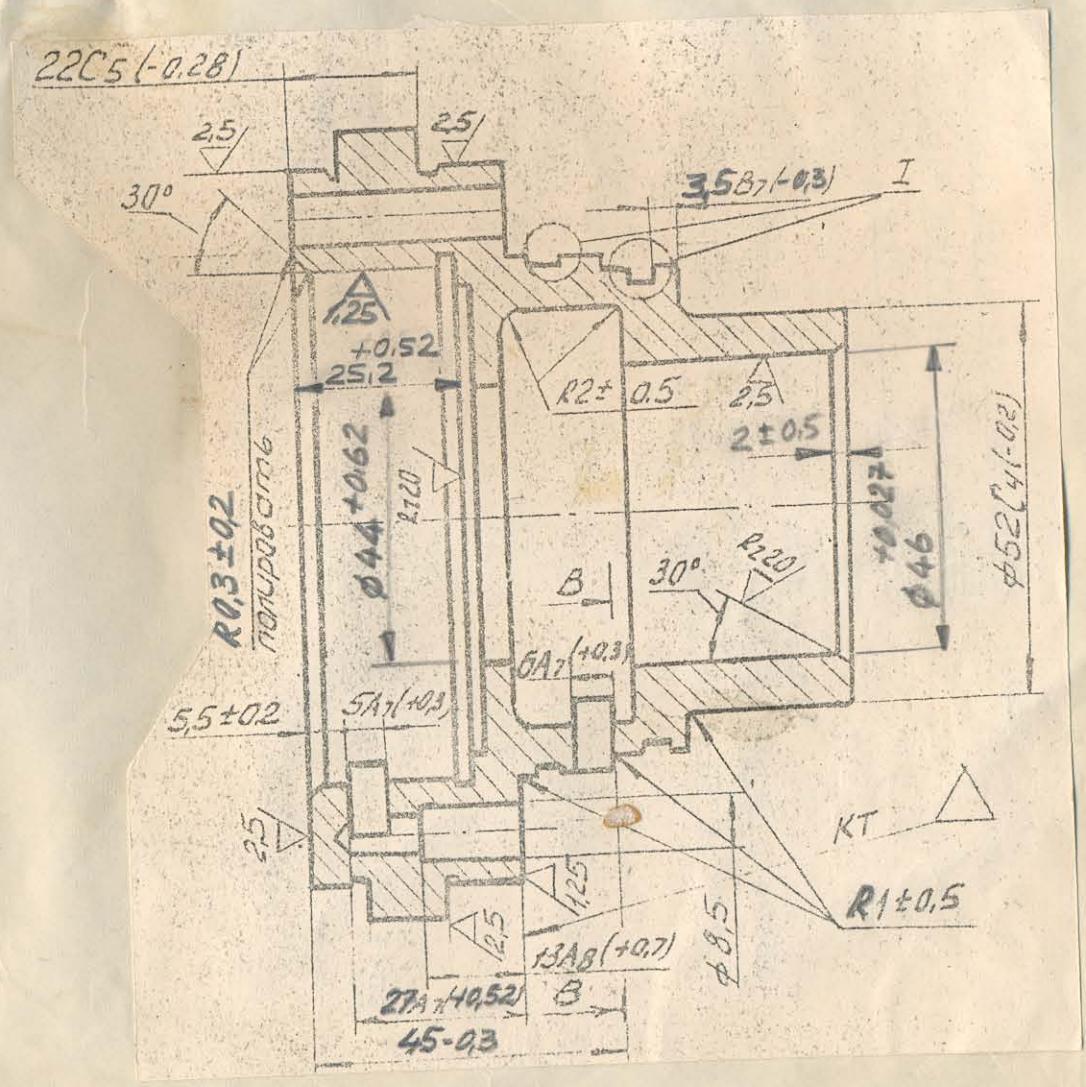
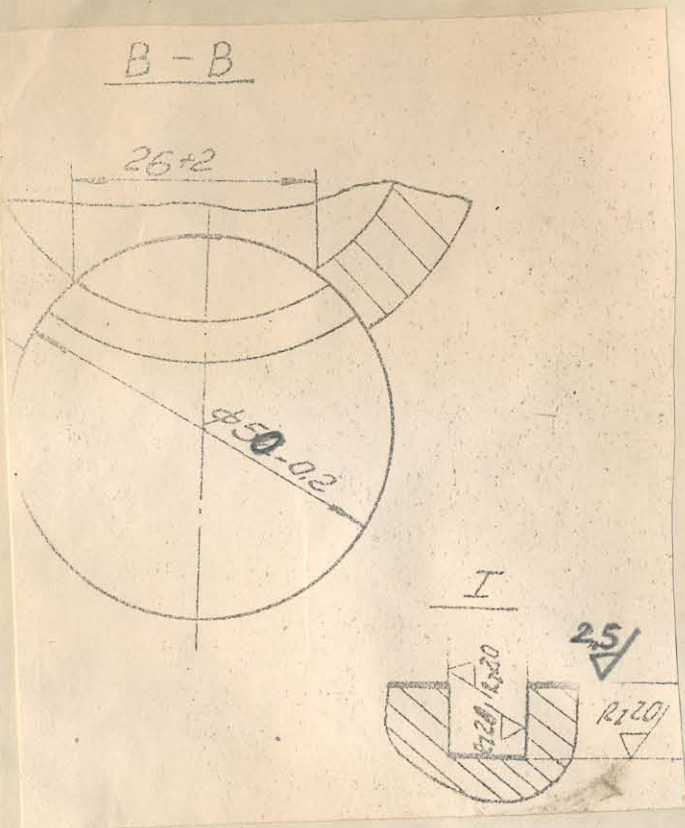
SPACER

DRAWING No.  
20-63-10-6

ISSUE

OPN. No.  
220

OPERATION  
INSPECTION



CM	<i>[Signature]</i>	<i>[Signature]</i>
PRED.	CHD.	APPD