



# ENGINE FACTORY AVADI

FORM No :EFA/P-038

## PROCESS SCHEDULE

NOMENCLATURE : GEAR CLUSTER  
 DRAWING No : 402-450  
 MATL SPECIFICATION : 12X H3A - STAMPING

OPN No	DESCRIPTION OF OPERATION	SHT No	WORK CENTRE	SET UP TIME	OPN TIME	REMARKS
000	FORGING	5	-			
005	HEAT TREATMENT : <i>CONDITION TO BHN 201 TO 255</i>	-				
007	INSPECTION	-	BENCH			
010	TURNING	6	C/LATHE NH-26/1000 HMT			
020	TURNING	7	CNC-LATHE GDM-65/2A HMT			
025	TURNING	8	CNC-LATHE GDM-65/2A HMT			
030	BROACHING	9	VERTICAL BROACHING MIC-HMT			

PREPARED BY		CHECKED BY		APPROVED BY		AUTHORISED BY						
SIGN	<i>Dmam</i>	SIGN	<i>[Signature]</i>	SIGN	<i>[Signature]</i>	<i>Make</i>						SHT. No
DATE	29/10/96	DATE	30.10.96	DATE	30.10.96	30/10/96						1 OF 20
CUI / PDO		CPMS / PDO		HOS / PDO		DO / PDO		PDO REF	ISSUE	DATE	SIGN	

PLANNING SHEET -- PDO/EFA FORM No: EFA/P--039

NOMENCLATURE

GEAR CLUSTER.

DRAWING No.  
402.450

ISSUE  
-

OPN. No.  
000

OPERATION

STAMPING DRG:

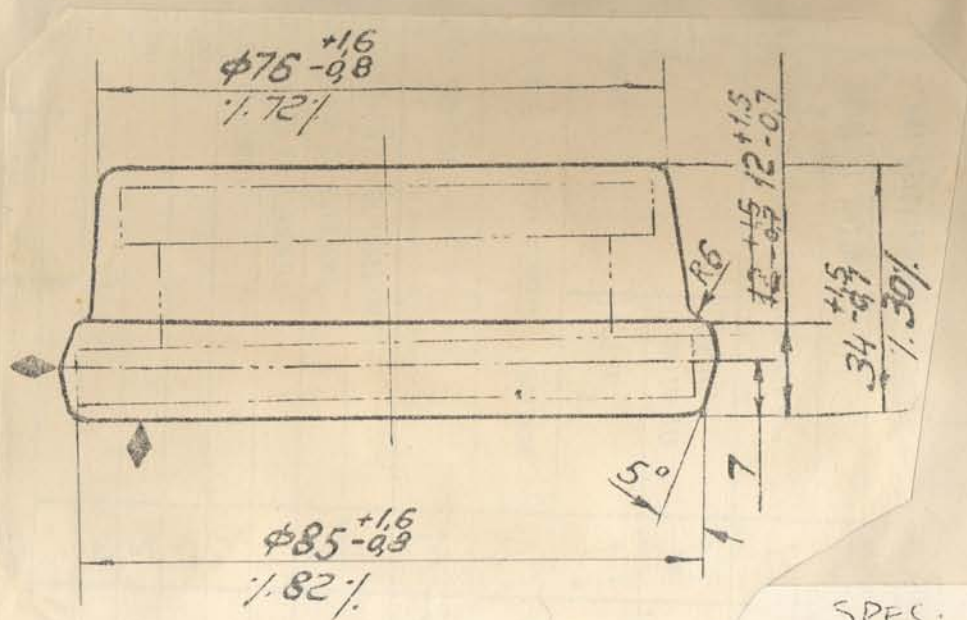
HARDNESS: BHN 217-158  
(DIA. OF INDENTATION 4.1-4.8)

MACHINE:

BENCH

STD. TOOLS & GAUGES

SPECIAL TOOLS & GAUGES



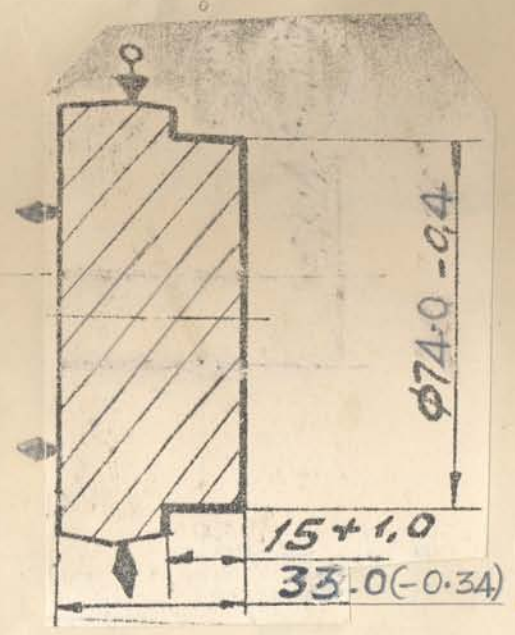
SPEC.

1. MISMATCH OF DIES MAY BE UPTO 0.8mm.
2. BURR ALONG DIE PARTING LINE — UPTO 1.0mm
3. UNSPECIFIED RADII ARE R2mm.
4. DEPTH OF DEFECTS MAY BE UPTO  $\frac{1}{2}$  OF TOLERANCE
5. UNSPECIFIED DRAFFS ARE  $6^\circ$ .
6. MARK STEEL GRADE WHEN SUBSTITUTING THE MATERIAL.

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

PLANNING SHEET - PDO/EFA FORM No: EFA/P--039

NOMENCLATURE	GEAR CLUSTER	DRAWING No.	ISSUE	OPN. No.	OPERATION
		402-450	—	010	TURNING.



Ra 10

HARDNESS 26 TO 37 HRC

MACHINE: C/LATHE  
NH-26/1000  
HMT

STD. TOOLS & GAUGES	
TURNING AND FACING TOOL INSERTS CNMG	PCLNR 2525 M12 120408

SPECIAL TOOLS & GAUGES	

RSV		Pred 16/12/91	
PRED.	CHD.	APPD	

PLANNING SHEET - PDO/EFA FORM No: EFA/P-039

NOMENCLATURE

GEAR CLUSTER

DRAWING No.  
402-450

ISSUE

OPN. No.  
020

OPERATION  
TURNING.

*Ra 10* ✓

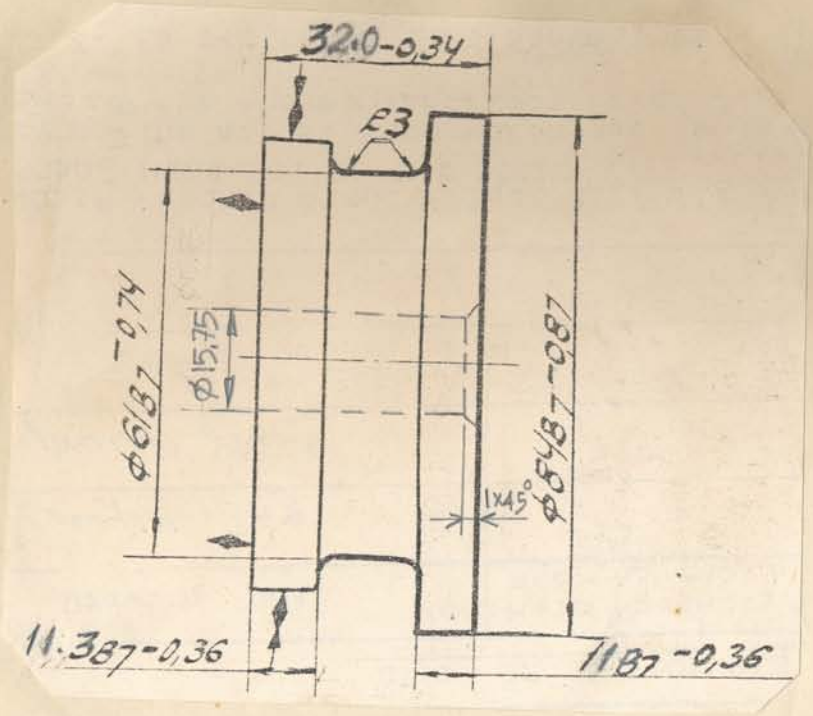
MACHINE: CNC LATHE  
HMT GDM-65/2A

STD. TOOLS & GAUGES

TURNING TOOL & PCLNR	
FACING TOOL	2525 MR
INSERTS CNMG	120408
CENTRE. DRILL	A5X105
DRILL Ø10	
DRILL Ø 15.75	
C'SK CUTTER	
Ø 20 X 90°	

SPECIAL TOOLS & GAUGES

FORM TOOL HOLDER (WIDIA No. 6932742110M)	402 197
INSERT R3 (WIDIA No. 44415.824)	402 198



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

PLANNING SHEET - PDO/EFA

FORM No: EFA/P--039

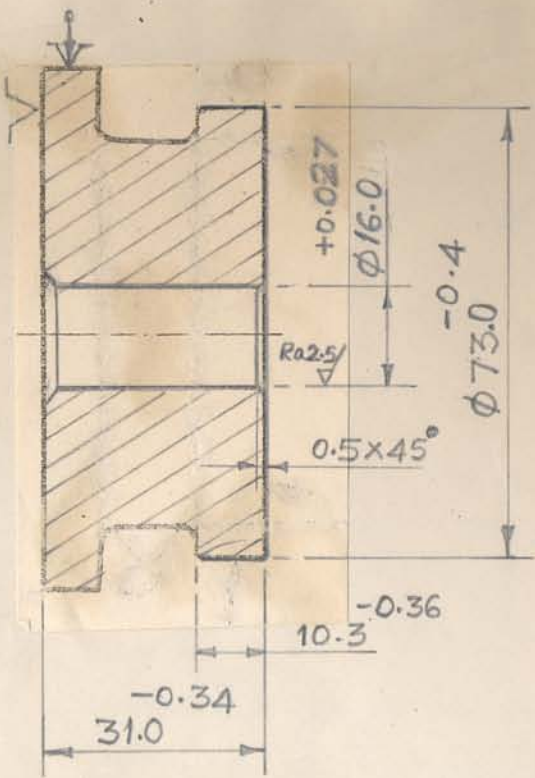
GEAR CLUSTER

402-450

025 TURNING

MACHINE: CNC-LATHE  
HMT GDM 65/2A

$Ra \ 5 \sqrt{A}$



STD. TOOLS & GAUGES

TURNING & FACING TOOL	PC LNR 2525 M2
INSERTS CNMG	420408
REAMER $\phi 16_{H8}$	
CENTRE DRILL $M5 \times 10.5$	

SPECIAL TOOLS & GAUGES

PLUG GAUGE $\phi 16.0^{+0.027}$	020/06/29
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QSV	CHD.	APPD	DATE