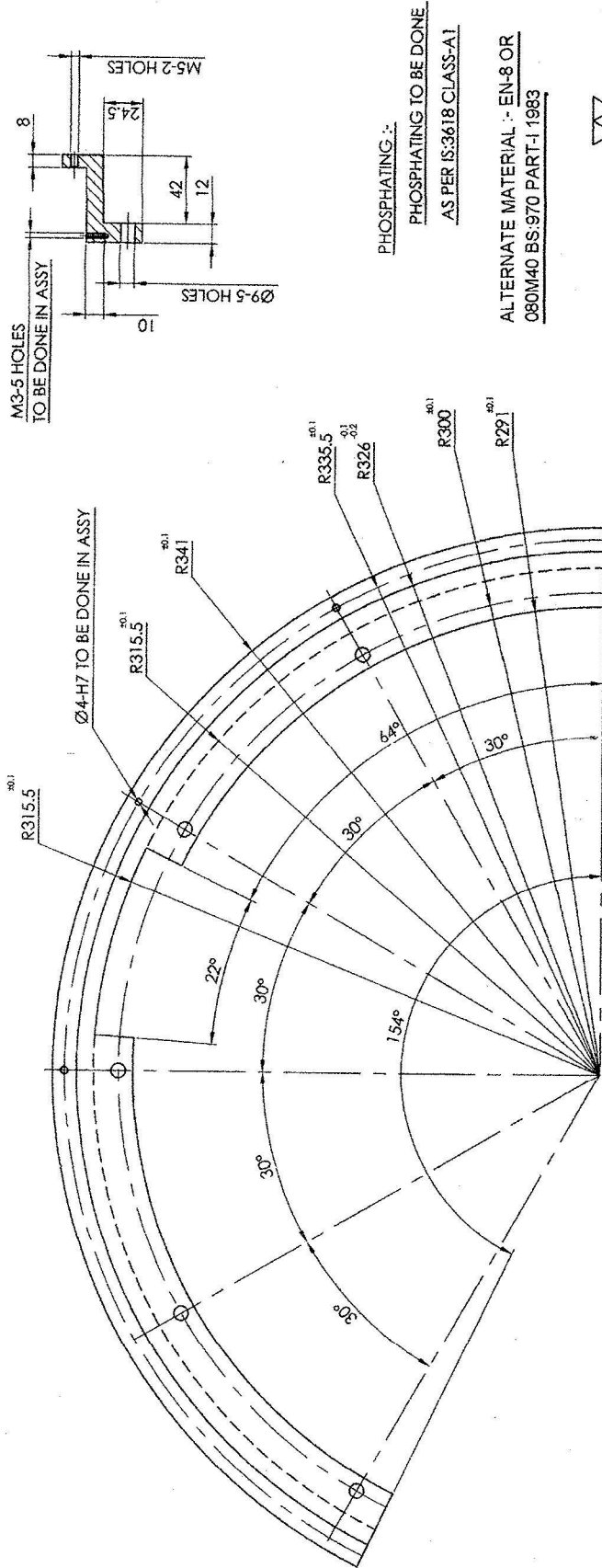


REVISIONS



PHOSPHATING :-  
PHOSPHATING TO BE DONE  
AS PER IS:3618 CLASS-A1

ALTERNATE MATERIAL :- EN-8 OR  
080M40 BS:970 PART-1 1983



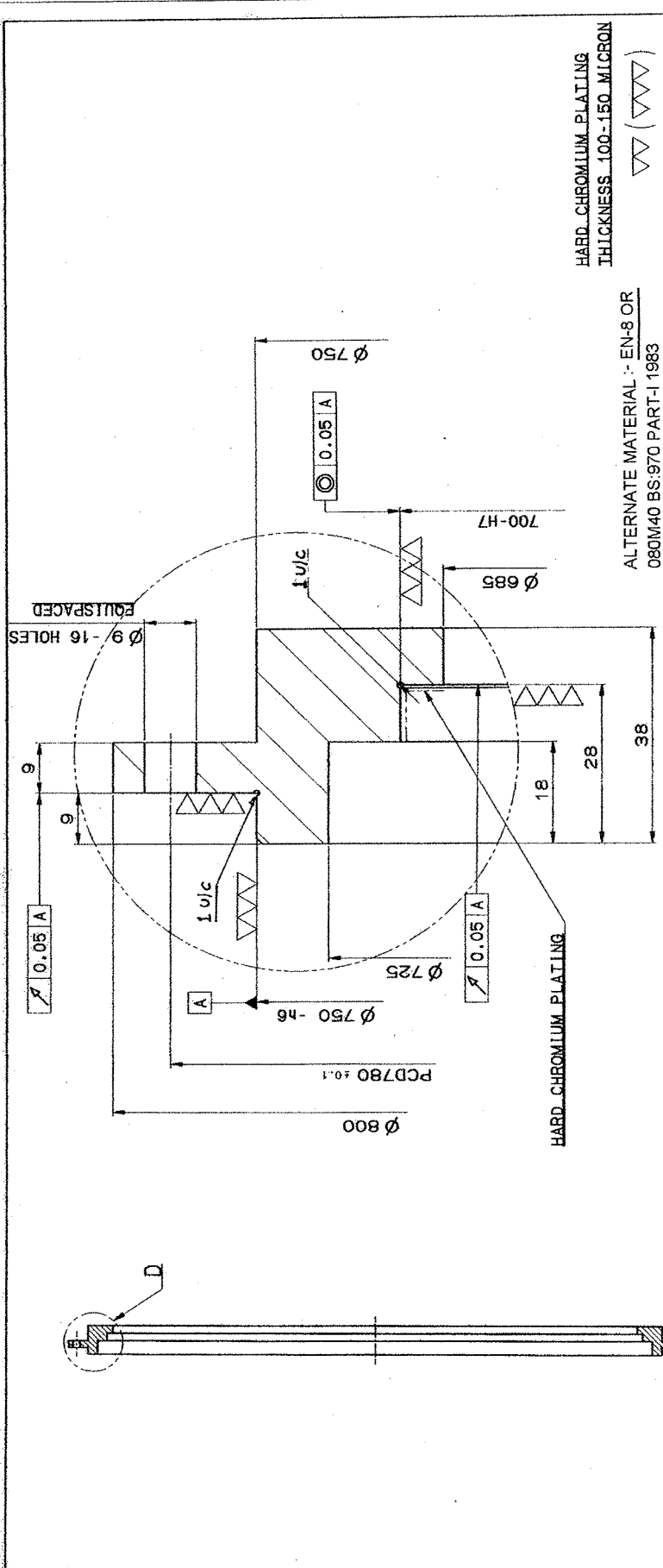
NOTE:-  
ADDITIONAL TWO NUMBER POCKET TO BE DONE AS PER ASSY REQUIREMENT IF REQUIRED

1	CAM HOLDER-I	40C8,IS:5517	***
संख्या NO OFF	विवरण DESCRIPTION	सं. क्र. PART NO.	अंश REMARKS
सामान्य सौकरिता GENERAL TOLERANCE			
रैखिक परिमाण LINEAR DIMENSION			
0.6	0.1		
0.3	0.2		
0.2	0.1		
0.15	0.1		
0.1	0.05		
0.05	0.02		
कोणीय परिमाण ANGULAR DIMENSION			
1°-10°	15'		
10-50	30'		
50-100	20'		
100	10'		
समान्य चूल्पा मू VALUET "M" ३			
25			
15			
10			
5			
संख्या NO OFF			
संशोधित चूल्पा अंश REVISED PART ALTERNATION			
10.12.2010			
दिनांक DATE	आंश DRAWN	मापक SCALE	अंश REPLACED BY
10.12.2010	Vijay	NTS	Vijay
	जांच CHECKED	मापक SCALE	अंश REPLACED BY
	अंश APPROVED	NTS	Vijay
	अंश REPLACED	NTS	Vijay
कार्यालय OFFICE			
मशीनी औजार आरिख्य फैक्टरी, आंबानाथ MACHINE TOOL PROTOTYPE FACTORY AMBARNATH			
डॉ. कल्याण FOR			
आखण क्र. DRAWING NO. DW-1108-0008-13			

इस आखणो तथा इसके साथ की सर्वो साधनी का स्वलाधिकार भारत सरकार का मंत्रालय की भारतीय अनुसंधान संस्थानों के पास है। भारतीय अनुसंधान संस्थानों के मालिकों की लिखित अनुमति के बिना इसकी नकल या किसी भी रूप में इसके उद्योग या अन्य समाहित सूचना किसी अनधिकृत व्यक्ति को उपलब्ध नहीं कराई जानी चाहिए।

THE COPYRIGHT OF THESE DRAWINGS AND ALL ATTACHMENTS THERE TO BELONGS TO THE INDIAN NATIONAL INSTITUTE OF DEFENCE. GOVT. OF INDIA THEY SHOULD NOT BE REPRODUCED OR PRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF THE DIRECTOR OF DEFENCE PROTOTYPES.





No. OFF	BEARING HOUSING	PART No.	MATERIAL	STANDARD	DIMENSIONS	REMARKS
1		40C8	IS:5517			** *

No. OFF	DESCRIPTION	INDEX	ALTERATION	DATE	NAME
	BEARING HOUSING			2006	
	FRAME ASSEMBLY				
	LR-MR LAUNCHER				
	KAVACH MOD-II				

SCALE	DRAWN	CHECKED	APPROVED
1:1			

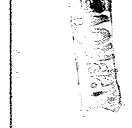
REPLACED FOR	DRAWING No.
	DW-1108-0202-13

DETAIL D

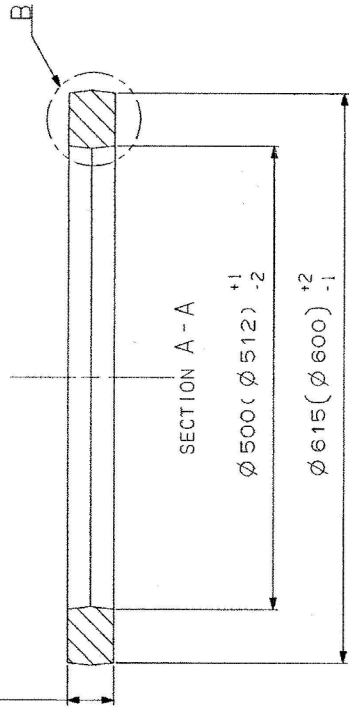
\* \* PHOSPHATING TO BE DONE AS PER IS:3618 CLASS-A1 CHROMIUM PLATING TO BE DONE ON INDICATED SURFACE AFTER PHOSPHATING

NOMINAL SIZE & FIT	DEVIATION
Ø 700-H7	+0.080
Ø 750-h6	-0.024
	-0.074

THE COPYRIGHT OF THESE DRAWINGS AND ATTACHMENTS TO THE INDIAN ORDNANCE FACTORIES, MINISTRY OF DEFENCE, GOVT. OF INDIA. THEY SHOULD NOT BE COPIED, REPRODUCED IN ANY WAY OR THE INFORMATION CONTAINED THEREIN MADE AVAILABLE TO UNAUTHORIZED PERSONS WITHOUT THE WRITTEN PERMISSION OF THE DIRECTOR OF ORDNANCE FACTORIES.



50 (40) +2



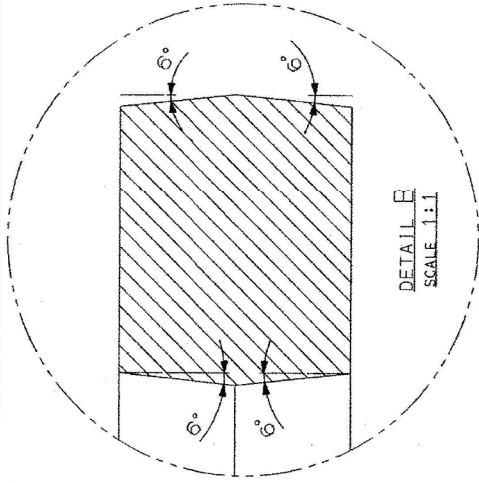
SECTION A - A

$\phi 500 (\pm 1)$

$\phi 615 (\pm 1)$

CHEMICAL COMPOSITION	
40 Ni6 Cr4 Mo3	IS:5517
CARBON	0.35 - 0.45
SILICON	0.10 - 0.35
MANGANESE	0.40 - 0.70
NICKEL	1.25 - 1.75
CHROMIUM	0.90 - 1.30
MOLYBDENUM	0.20 - 0.35
SULPHUR	0.035Max
PHOSPHORUS	0.035Max

MECHANICAL PROPERTIES	
TENSILE STRENGTH N/mm <sup>2</sup>	800 - 950
0.2 PERCENT PROOF STRESS N/mm <sup>2</sup>	600 Min
ELONGATION PERCENT 5.65 $\sqrt{A}$	16 Min
IZOD IMPACT Joules	55 Min
LIMITING RULING SECTION	150 mm



ALTERNATE MATERIAL:- EN-24 OR  
817M40 BS:970 PART:-I 1983

- NOTE :-
1. FORGING TOLERANCE SHOULD AS PER IS:3469-1974.
  2. FORGING TO BE SUPPLIED IN SHOT-BLASTED AND NORMALISED CONDITION.
  3. FORGING SHOULD BE FREE FROM SURFACE DEFECTS VIZ. CRACKS, FOLDS, FLASHES, F.I.N.S., ETC.
  4. DRAFT ANGLE 5° UNLESS OTHERWISE SPECIFIED.
  5. UNSPECIFIED RADII ARE 3mm.
  6. RESIDUAL FLASH: +2
  7. TRIMMED FLAT: -2
  8. MISMATCH: 1:7
  9. DIMENSIONS IN BRACKETS ARE FOR MACHINING DIMENSIONS.
  10. PILOT SAMPE MUST BE APPROVED BEFORE BULK SUPPLY.

No. OFF	DESCRIPTION	PART No.	MATERIAL	STANDARD	DIMENSIONS	REMARKS
1	FORGING FOR RING GEAR		40Ni6Cr4Mo3	IS:5517		Wt. :- 41.3Kg
GENERAL TOLERANCE						
LINEAR DIMENSIONS						
0-6	±0.1					
6-30	±0.2					
30-120	±0.3					
120-315	±0.5					
315-1000	±0.7					
1000-2000	±1.0					
ANGULAR DIMENSION						
1°-15'	±15'					
15°-30'	±30'					
30°-60'	±60'					
>100'	±10'					
VALUE IN $\mu$ m						
0-25	±25					
25-100	±50					
100-150	±75					
150-250	±100					
>250	±125					
DRG. No. OF ASSOCIATED PART						
No. OFF						
DRG. No.						
ALTERATION						
DATE						
NAME						
SCALE						
DRAWN 02.03.08 gwp/pt						
CHECKED / /						
APPROVED / /						
REPLACED BY						
REVISED FOR						
REVISION						
0						

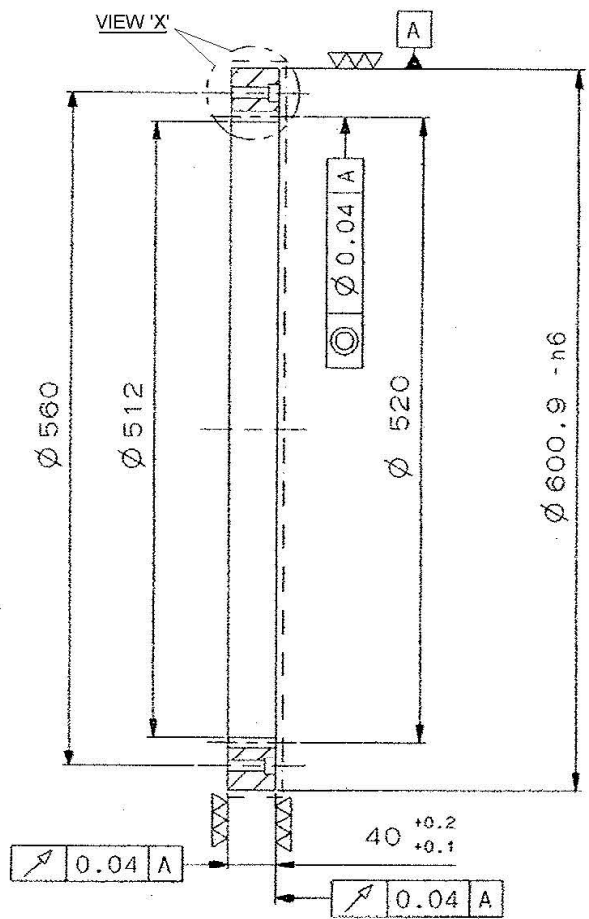
FORGING FOR RING GEAR  
TRAINING GEAR ASSY.  
LRMR LAUNCHER  
KAVACH MOD - II

Design  
OFFICE  
MACHINE TOOL PROTOTYPE FACTORY,  
AMBERNATH

DRAWING No..  
DW-1108-3001-12-3

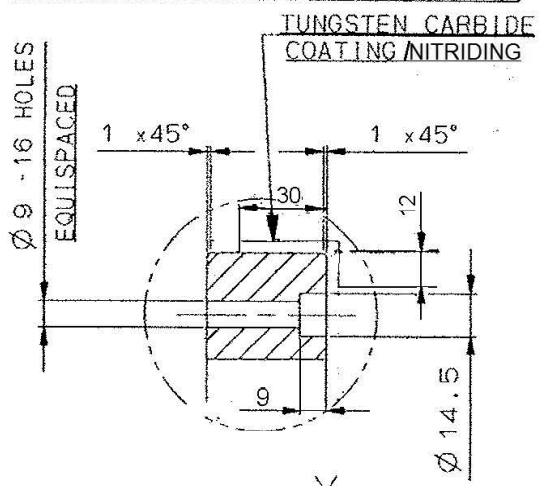
THE COPYRIGHT OF THESE DRAWINGS AND ATTACHMENTS TO THE INDIAN ORDNANCE FACTORIES, MINISTRY OF DEFENCE, GOVT. OF INDIA. THEY SHOULD NOT BE COPIED, REPRODUCED IN ANY WAY OR THE INFORMATION CONTAINED THEREIN MADE AVAILABLE TO UNAUTHORISED PERSONS WITHOUT THE WRITTEN PERMISSION OF THE DIRECTOR OF ORDNANCE FACTORIES.

NOMINAL SIZE & FIT	DEVIATION



### GEAR DATA

MODULE	4
NO OF TEETH	130
PRESSURE ANGLE	20°
PCD	520
CENTRE DISTANCE	224 <sup>+0.010</sup> <sub>0</sub>
CLASS OF ACCURACY DIN	7
Mz VALUE OVER 15 TEETH	178.50 +0.068 +0.135
MATING GEAR	DW-1108-5012-14
OVER ROLLER DIM. ROLLER DIA. - 7mm	509.65 ± 0.09



**DETAIL X**  
**SCALE 1:2**

\* \*  
**TUNGSTEN CARBIDE COATING**  
**THICKNESS- 250- 300 MICRON**

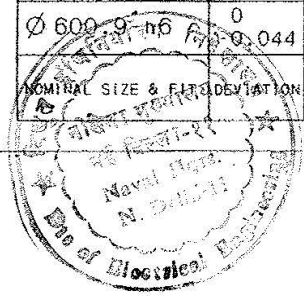
**TOUGHENED**  
**RC: -28-32**

▽▽ (▽▽)

ALTERNATE TO TUNGSTEN CARBIDE COATING:-  
NITRIDING CASE  
DEPTH:- 100 - 120 MICRON  
R.C:- 60-66

\* TO BE MANUFACTURED FROM DW-1108-3001-12-3

	1	RING GEAR		*		* *
	NO. OFF	DESCRIPTION	PART NO.	MATERIAL & STD.	DIMENSION	REMARKS
	GENERAL TOLERANCE					
	LINEAR DIMENSIONS					
	0-6	±0.1				
	6-30	±0.2				
	30-120	±0.3				
	120-315	±0.5	1	DW-1108-0000-11(SR)	REVISION	ALTERNATE TO T C COATING NITRIDING ADDED
	315-1000	±0.8	1	DW-1108-0000-11(LR-MR)	REVISION	DIM 12 WAS 15 DIM DIA 9 ADDED
	1000-2000	±1.2				
	ANGULAR DIMENSION	NO. OFF	DRD. NO OF ASSOCIATED PART	INDEX	ALTERATION	2006
	1:10	±1°				
	10:50	±30"				
	50:100	±20"				
	>100	±10"				
	VALUE IN "um"					
	~	±25				
	▽	5-25				
	▽▽	1.6-9				
	▽▽▽	0.025-1.8				
	▽▽▽▽	<0.025				
	RING GEAR TRAINING GEAR ASSEMBLY LR-MR LAUNCHER KAVACH MOD-II			SCALE	DRAWN	15.12.06
	MACHINE TOOL PROTOTYPE FACTORY			1:5	CHECKED	15.12.06
	AMBERNATH				APPROVED	15.12.06
	Design Office			REPLACED BY		REVISION
				REPLACED FOR		II
				DRAWING NO.		
				DW-1108-3001-14		



**APPROVED**