

CERTIFIED CORRECT COPY  
OF APPROVED DRAWINGS  
AT THIS DATE.....

17.11.2020

Design & Drawing Office  
Ordnance Factory,  
Tiruchirappalli-620016

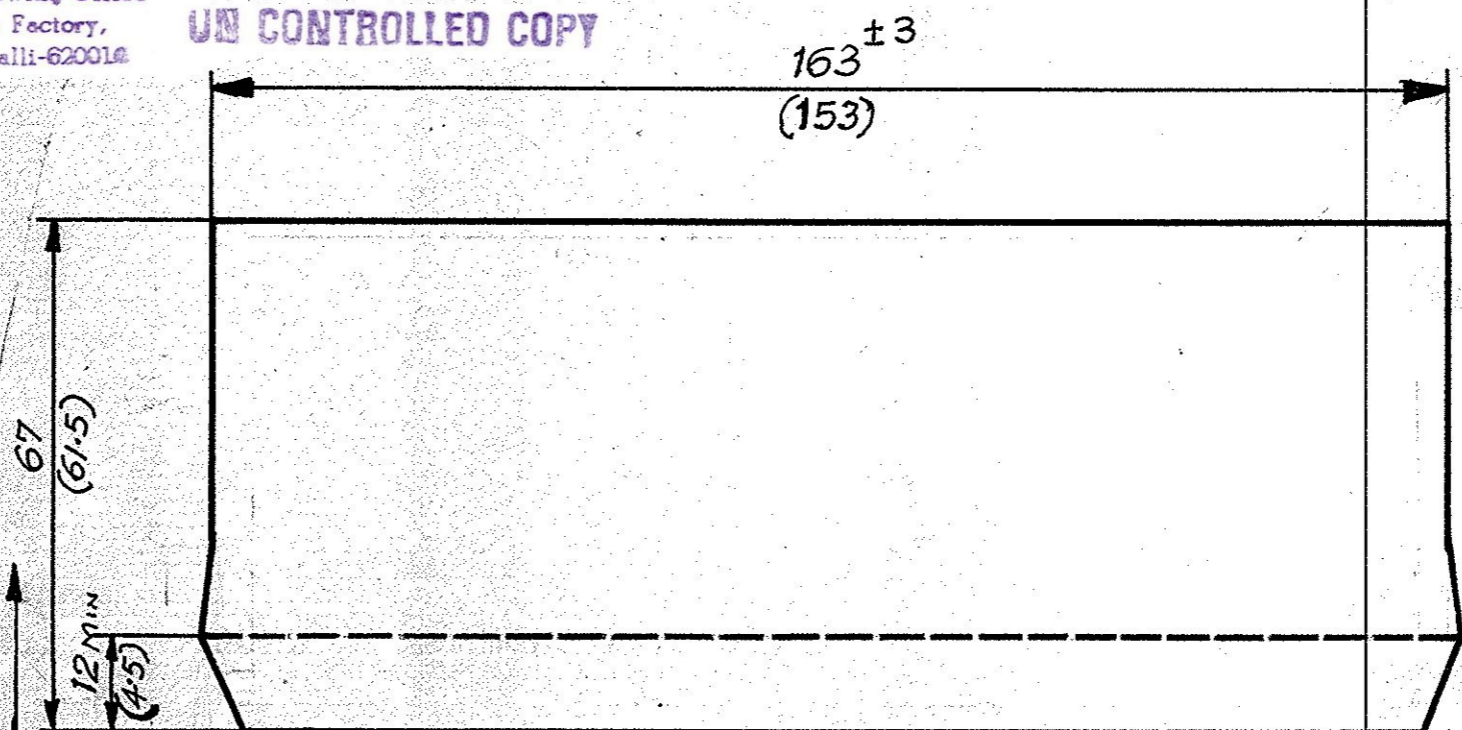
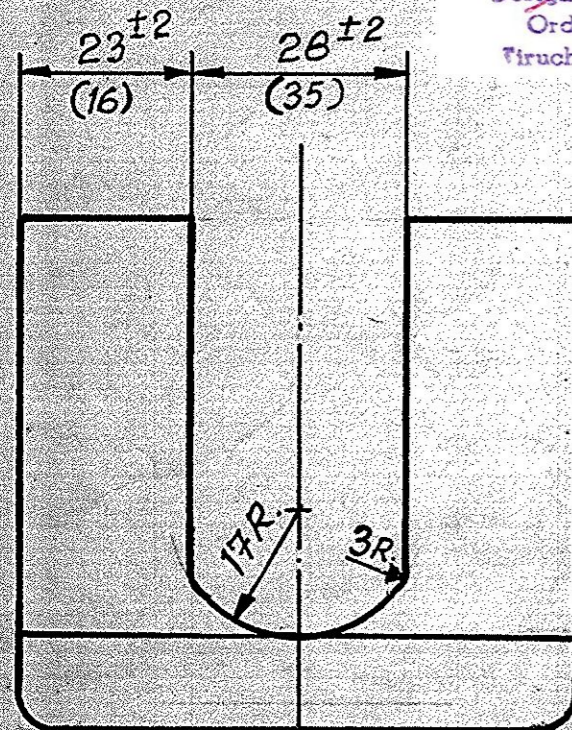
**FORGING DRAWING**

UN CONTROLLED COPY

CHEMICAL  
COMPOSITION OF  
THE MATERIAL  
35XH2MΦA-W

C	0.32 - 0.37	Si	0.17 - 0.37
Mn	0.30 - 0.60	Cr	0.60 - 0.90
Ni	2.0 - 2.4	Mo	0.20 - 0.30
V	0.10 - 0.18	S	0.010 Max.
P	0.016 Max.	Cu	0.20 Max.

INDIGENOUS MATERIAL: BS 970 Pt. I 83 Gde  
826 M40 WITH SY. 0.010 MAX, P. 0.015 MAX.  
ESR QUALITY. THE MATERIAL SHOULD ACHIEVE  
THE FOLLOWING MECHANICAL PROPERTIES:-  
Rm : 1763 MPa Max  
Re : 1420 MPa Max  
E<sub>L</sub> : 10 Min.  
CHARPY IMPACT (UNOTCH) : 6 Kgm / Cm<sup>2</sup> Min  
MACROSTRUCTURE SHALL BE BETTER THAN OR  
EQUIVALENT TO CI RSI FOR PLATE I AND NIL  
FOR PLATE-II TO SPECN IS 13015, NMIR 1.5  
THIN SERIES, MAX. FOR ABCD AND NIL FOR  
THICK SERIES TO IS 4163, Fig 2.  
AUTHORITY: CQA (METALS) CHAPUR LY. NO.  
MQA-3/TS/B/1 Dt. 6/11-6-1997



INDIGENOUS MATERIAL :- BS 970 Pt. I - 83 Gde M 31 CONDITION 'Z' WITH S & P CONTENT 0.01 & 0.015 MAX. RESPECTIVELY. (ESR STEEL) TO ACHIEVE REQUIRED HARDNESS.

GRAIN FLOW DIRECTION

- DIMENSIONS ARE IN mm.
- SCALE :- 1:1.
- FIRST ANGLE PROJECTION.
- HEAT-TREATMENT :- NORMALIZING WITH TEMPERING; HARDNESS HB 255 MAX.
- DESCALING :- SHOT BLASTING
- SHRINKAGE OF SURFACE 'A' NEED NOT BE CHECKED.
- SURFACE DEFECTS SHOULD NOT EXCEED 0.3 mm IN DEPTH
- NUMBER OF PARTS OBTAINED FROM ONE FORGING : 1 PIECE
- DIMENSIONS GIVEN IN BRACKETS ARE FOR MACHINING
- WEIGHT OF THE FORGING 4.700 Kgs.
- RAW MATERIAL SIZE :- 90φ<sup>+0.5</sup><sub>-13</sub> x 110 LONG
- MATERIAL :- 35XH2MΦA-W ; OST 3-98-80
- DEVELOPED LENGTH OF FORGING - 140 MM
- FREE TOLERANCE DIMENSIONS AS PER GOST 7505-74 GROUP II

THE FINISHED COMPONENT SHOULD ATTAIN A HARDNESS RANGE OF 48.5-53.5 HRC<sub>2</sub> AFTER FINAL HEAT-TREATMENT

VETTED FOR MATERIAL ONLY  
AS PER LAST DC (1) N/LETTER/AD  
MQA-3/TS/B/1 dt. 06/11-6-97

CMR V JAGADISH  
Sr. Scientific Officer  
Sr. Quality Assurance Staff (Arms)  
Tiruchirappalli-620016.

HEAT-TREATMENT PROCESS CHART

NOMENCLATURE AND DT. NO.	STEEL GRADE	TYPE OF OPERATION	EQUIPMENT	TEMP. IN °C	TIME	COOLING MEDIUM	FIXTURE	HARDNESS INSPN. %
EJECTOR C 3006	35XH2MΦA-W	NORMALIZING HEATING	ELECTRIC CHAMBER FURNACE	850-870	4 HRS.	AIR	ON TRAY	HARDNESS NOT LESS THAN 3%
		HIGH TEMPERING HEATING	ELECTRIC CHAMBER FURNACE OR ELECTRIC SHAFT FURNACE	660-680	6 HRS.	WITH FURNACE UPTO 500°C THEN IN AIR	ON TRAY	3%; BUT NOT LESS THAN 3 PIECES.

1. DRESSING OF PLACES FOR CHECKING HARDNESS. 1-2 PIECES FROM A BATCH ARE SUBJECT TO GRAIN FLOW TEST BY THE METALLURGIST'S LABORATORY

2. CHECKING OF HARDNESS

UPDATED. DA NO. 22/97. Dt. 23-3-97.

C (3)	DA NO. 061/96 Dt. 10/1/96	SIG & DATE
B (2)	DA NO. 72/92 Dt. 2-11-92	SIG & DATE
(1)	STORE DRG. NO ADDED	SIG & DATE
SL. NO	AMENDMENTS	SIG & DATE

FOR COMPONENT NO  
2A42-03-006 - EJECTOR

Sadhi  
25/6/88  
**DRAWN**

Asethwar  
**CHECKED**

7/88  
**APPROVED**

Chand  
**F/M: PROJ**

...  
**A WM/PROJ.**

ORDNANCE FACTORY  
TIRUCHIRAPALLI-16

DRG. NO:  
64 C 3006 200 D3