

INDIGENOUS MATERIAL

- ⑤ IS 10343 Gr. 19 or BS 3146 Pt. 1-74 TYPE CLA-5 GRADE 8  
 CASTING TO BE HEAT-TREATED TO ACHIEVE 41.5/51.5 HRC  
 ⑥ SEPARATELY CAST TEST BARS SHALL MEET THE SPECIFIED MECH. PROPERTIES INCLUDING IZOD IMPACT VALUE 14J MIN.

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

17.11.2020

Design & Drawing Office  
 Ordnance Factory,  
 Tiruchirappalli-620018

RADIOGRAPHIC TEST

(a) RADIOGRAPHIC ACCEPTANCE STANDARD OF THE CASTING SHOULD BE AS PER ASTM-E-192

(b) 100% OF THE ADVANCE SAMPLE (NOT LESS THAN 5) WILL BE SUBJECTED TO RADIOGRAPHIC TEST.

(c) RADIOGRAPHIC TEST OF ADVANCE SAMPLE WILL BE CARRIED OUT BY CQA(MET) ICHAPUR.

OR

THE AREA QUALITY ASSURANCE OFFICER CONCERNED WOULD GET THE RADIOGRAPHIC TEST DONE IN HIS PRESENCE AND FORWARD THE PLATES TO TO CQA (MET) ICHAPUR FOR SENTENCE AND APPROVAL OF THE MOULD.

(d) BULK PRODUCTION WOULD COMMENCE ONLY AFTER MOULD AND MATERIAL HAS BEEN APPROVED BY CQA(MET) ICHAPUR.

(e) 5% OF THE CASTING SELECTED AT RANDOM FROM <sup>THE</sup> BULK WOULD BE SUBJECTED TO RADIOGRAPHIC TEST. THIS MAY BE DONE UNDER THE ARRANGEMENT OF THE AREA QUALITY ASSURANCE OFFICER AND SENTENCE MAY BE AWARDED BY HIM BASED ON THE STANDARD OF THE ADVANCE SAMPLES CLEARED BY CQA(MET) ICHAPUR.

REF. :- CONTROLLERATE OF QUALITY ASSU(W) JABALPUR LETTER NO. 50431/CQAW/QA-11  
 DATED 14 MARCH 95.

GUIDELINES FOR PROCUREMENT AND INSPECTION OF INVESTMENT CASTING. REF. CONTROLLERATE OF QUALITY ASSURANCE (METALS) LETTER NO. MQA-1/QA1/1.2 DATED 05-MAY '94.

CONTROLLERATE OF QUALITY ASSU(M) ICHAPUR  
 L. NO. MQA-3/LIN/3/W DE. 03 MAY 1995

⑤ MATL. : 23 XTC2.M  $\phi$  74 MECH. PROPERTIES :-  
 ULTIMATE STRENGTH 130 Kgf/mm<sup>2</sup> AND YIELD STRENGTH 110 Kgf/mm<sup>2</sup> ARE ALSO BE ACCEPTABLE.

⑥ INDIGENOUS MATERIAL IS 10343 Gr 4E WITH C% 0.45-0.50 AND MECHANICAL PROPERTIES SPECIFIED IN THE SPECIFICATION FOR THE GRADE AUTHORITY: CQA(METALS) ICHAPUR LY. NO. MQA-3/TS/BI DE. 6/11-6-87

MATL:-

⑦ IS:10343-1999 Gr.19Q WITH C% 0.45-0.5

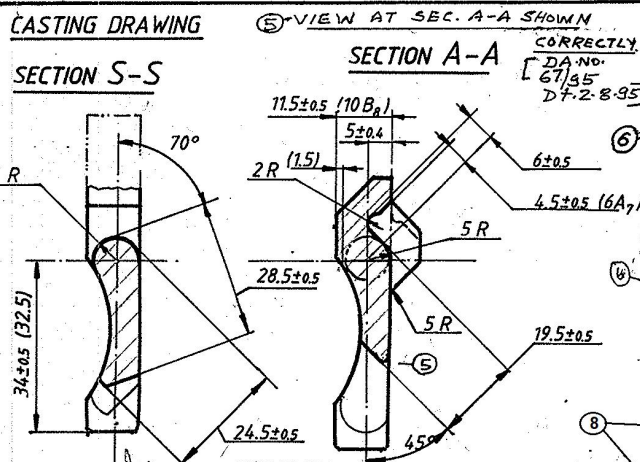
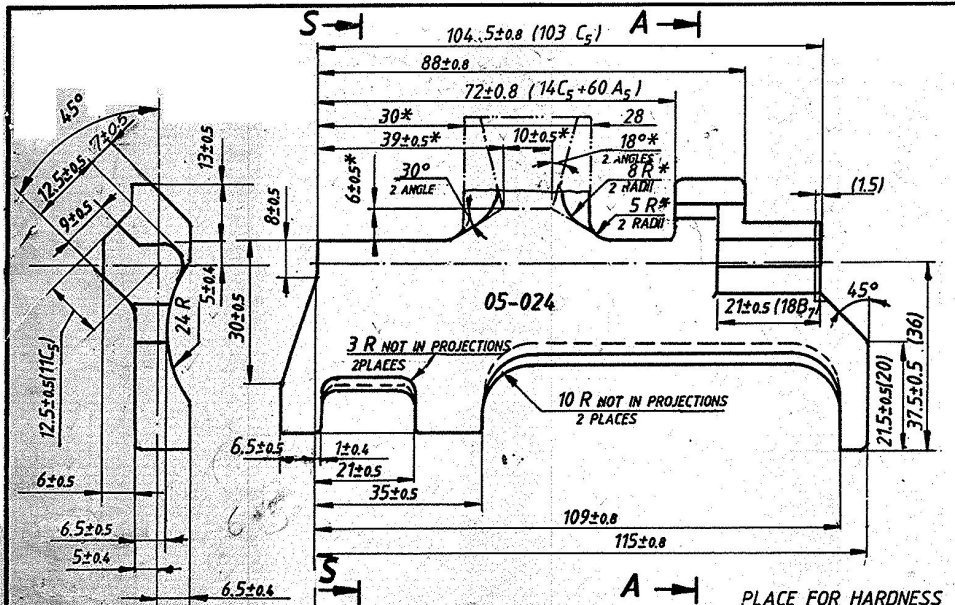
DA.No. 008/14 Dt.04.12.2014

REF.Lr. No. 2B1/304/CQAW/BMP-H/MATL Dt. 07.11.2014

I3 8	DA No. 005/16 Dt.04.05.16 (PP)
H ⑦	DA.No.001/16 DC.No.19446-W 14.09.15 PP 1.1.16
G ⑥	DA.No. 052/97 Dt 11-8-97 2/11/8/97
UPDATED.	DA.No. 022/97 Dt. 23-3-97 2/23/3/97
⑧ F	DA.No. 67/95 Dt. 2-8-95
⑨ E	DA.020/95 Dt. 11-4-95 Sashi 11-4-95
AMENDMENTS	DESCRIPTIONS SIG. & DATE

SHEETS 2/2	APPROVED	<i>[Signature]</i> 12-11-95 WM/MV	ORDNANCE FACTORY	COMPONENT NO. 2A42-05-21 & 2A42-05-024 CHACH FEED PAWLS
<i>Sashi</i> 11-4-95 DRAWN	CHECKED	<i>[Signature]</i> 12-4-95 1/C.30mm D&DO	TIRUCHIRAPALLI	DRG. NO. 64C 5021 250 I3

UN CONTROLLED COPY AT THIS DATE: 17.11.2020  
 CERTIFIED CORRECT COPY OF APPROVED DRAWINGS  
 Designer & Drawing Office: Ordnance Factory, Tiruchirapalli-620016

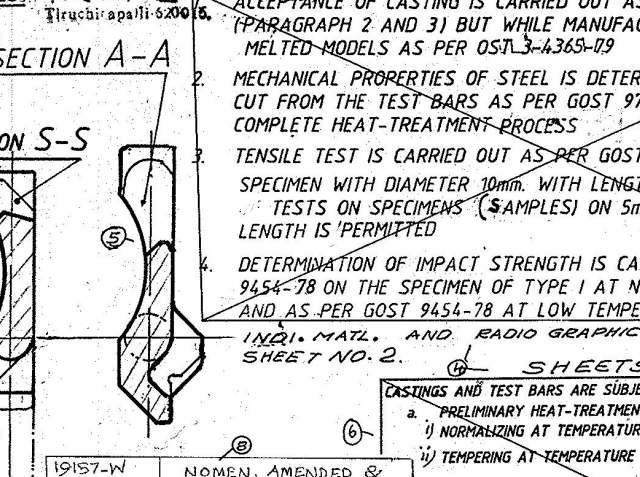
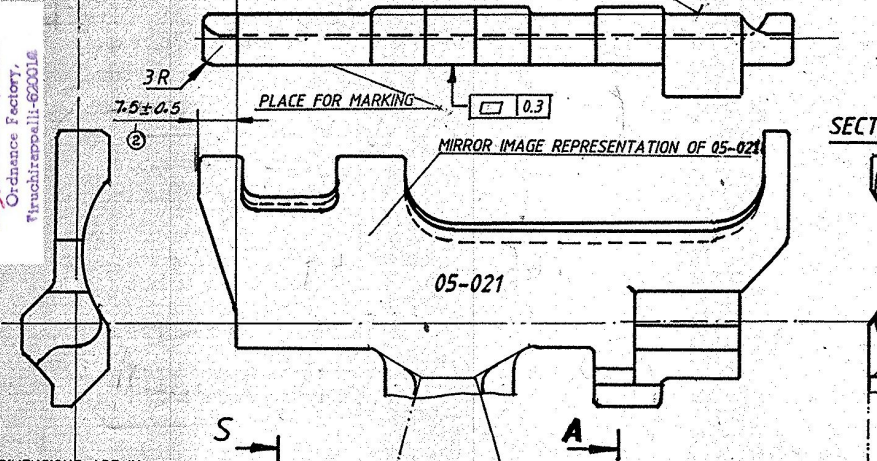


CHEMICAL COMPOSITION OF THE MATERIAL 23X C2MΦ NY	
C	0.20 - 0.24
Si	1.8 - 2.0
Mn	0.5 - 0.8
Cr	0.6 - 0.9
Mo	0.25 - 0.30
V	0.10 - 0.15
Ni	1.0 MAX
S	0.025 MAX
P	0.025 MAX
MECHANICAL PROPERTIES OF THE MATERIAL 23X C2MΦ NY (PARAGRAPH 2)	
ULTIMATE STRENGTH	140 Kgf/mm <sup>2</sup>
YIELD STRENGTH	120 Kgf/mm <sup>2</sup>
RELATIVE ELONGATION	6%
IMPACT STRENGTH	4 KgfM/cm <sup>2</sup>

FOR COMPONENT NO  
 2A42-05-021  
 RH-FEED PAWLS &  
 2A42-05-024  
 LH-FEED PAWLS

①	DA. NO. 007/85 dt. 8-2-85	W. A. 12
②	DIM. 7.5±0.5 ADDED FOR 05-021	May 25/92
③	DRG. ADVANCED TO C-3	
④	STORE DRG. NO ADDED	NO. 05/25/92
⑤	AMENDMENTS	SIG & DATE

VETTED FOR MATERIAL ONLY  
 AS PER LAST DC (1) No. LETTER  
 19157-W  
 Sr. Quality Controller  
 Tiruchirapalli-620016



ACCEPTANCE OF CASTING IS CARRIED OUT AS PER GOST 977-75 (PARAGRAPH 2 AND 3) BUT WHILE MANUFACTURING CASTING AS PER MELTED MODELS AS PER OST 3-4365-79  
 MECHANICAL PROPERTIES OF STEEL IS DETERMINED ON THE SPECIMENS, CUT FROM THE TEST BARS AS PER GOST 977-75 AFTER CARRYING-OUT COMPLETE HEAT-TREATMENT PROCESS  
 TENSILE TEST IS CARRIED OUT AS PER GOST 1497-73 ON CYLINDRICAL SPECIMEN WITH DIAMETER 10mm. WITH LENGTH 50mm  
 TESTS ON SPECIMENS (SAMPLES) ON 5mm DIAMETER WITH 25mm LENGTH IS PERMITTED  
 DETERMINATION OF IMPACT STRENGTH IS CARRIED OUT AS PER GOST 9454-78 ON THE SPECIMEN OF TYPE I AT NORMAL TEMPERATURE AND AS PER GOST 9454-78 AT LOW TEMPERATURE.  
 INDI. MATL. AND RADIO GRAPHIC TEST ADDED IN SHEET NO. 2.

SHEETS: 1/2  
 CASTINGS AND TEST BARS ARE SUBJECT TO FOLLOWING HEAT-TREATMENT:  
 PRELIMINARY HEAT-TREATMENT (PRIOR TO MACHINING)  
 a. NORMALIZING AT TEMPERATURE 1000° ± 20° C FOR 1-2 HOURS.  
 b. TEMPERING AT TEMPERATURE 720° ± 30° C FOR 4 HOURS.  
 HEATING FOR NORMALIZING AND HARDENING IS TO BE CARRIED OUT WITH PROTECTION OF CASTING FROM DECARBURIZATION AND OXIDATION  
 FINAL HEAT-TREATMENT (AFTER MACHINING) TEST BAR ONLY, AS PER FOLLOWING SEQUENCE OF OPERATION:  
 HARDENING AT TEMP. 1000° ± 20° SOAKING TIME IS ONE HOUR, COOLING IN OIL.  
 TEMPERING AT TEMP. 200° ± 20° FOR 4 HOURS.

- DIMENSIONS ARE IN mm.
- SCALE - 1:1
- FIRST ANGLE PROJECTION
- HARDNESS AFTER PRELIMINARY HEAT-TREATMENT HB 269 MAX.
- UN-SPECIFIED CASTING RADI 2 mm.

- CASTING DEFECTS ON NON-MACHINED SURFACE ARE ALLOWED AS PER OST 3-4365-79.
- MOULDING ANGLE UP TO 1° AS PER GOST 3212-80.
- IMPACT STRENGTH SHOULD BE CONTROLLED ON THE SAMPLES.
- STRAIGHTENING IS PERMITTED
- CORRECTION OF CASTING DEFECTS IS PERMITTED.
- \* DIMENSIONS NEED NOT BE CONTROLLED.
- MANUFACTURING OF CASTING WITH TWO VARIANTS (TYPES) OF FEEDERS IS PERMITTED

- WEIGHT OF MATERIAL 0.250 Kgs.
- MATERIAL - 23X C2MΦ NY APAR 16-78
- CLEANING - SAND BLASTING
- SURFACE FINISH ∇ Max.
- SPECIAL TEST - MAGNETIC FLAW DETECTION
- CASTING BELONGS TO GROUP II, OST 3-4365-79 (SPECIAL PURPOSE CASTING)

DRAWING PROVISIONAL

15-6-83	08-88	AWM/PROJ	ORDNANCE FACTORY	DRG NO:
REDRAWN	CHECKED	F/M/PROJ	TIRUCHIRAPALLI-16	64 C 5021 250 1/3