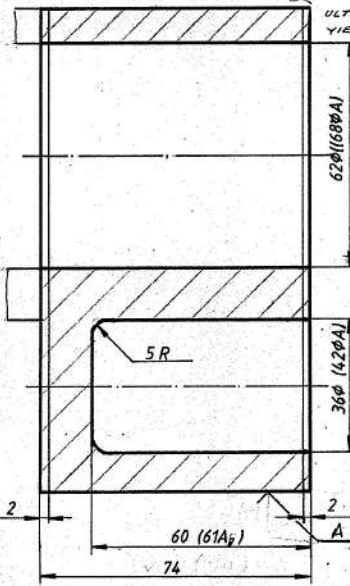
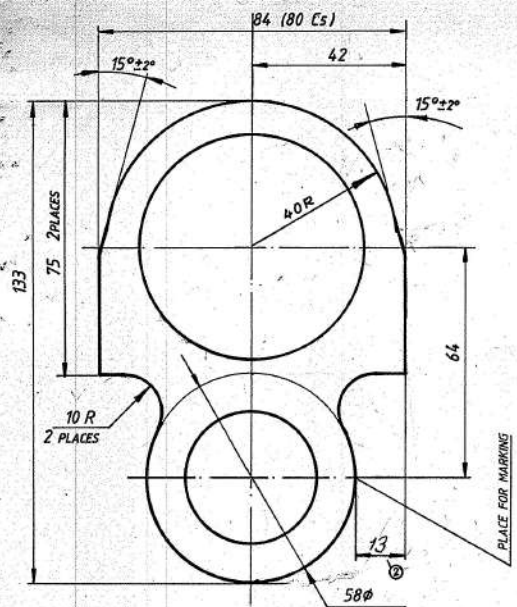


CASTING DRAWING

| MECHANICAL PROPERTIES OF THE MATERIAL 23X (C270713) | | CHEMICAL COMPOSITION OF THE MATERIAL 23X (C270713) | |
|---|---|--|-------------|
| ⑥ | ULTIMATE STRENGTH 140 Kgf/mm ² | C | 0.20 - 0.24 |
| | YIELD STRENGTH 120 Kgf/mm ² | Si | 1.8 - 2.0 |
| | RELATIVE ELONGATION 6% | Mn | 0.5 - 0.8 |
| | IMPACT STRENGTH 4 KJ/M ² | Cr | 0.6 - 0.9 |
| | | Mo | 0.15 - 0.30 |
| | | V | 0.10 - 0.15 |
| | | S | 0.025 MAX. |
| | | P | 0.025 MAX. |
| | | N | 0.010 MAX. |



- DIMENSIONS ARE IN mm.
- SCALE - 1:1
- FIRST ANGLE PROJECTION
- HARDNESS AFTER PRELIMINARY HEAT-TREATMENT HB 249 MAX.
- UN-SPECIFIED CASTING RADI 15mm.
- DRAFT ANGLE AS PER GOST 3212-80.
- CASTING DEFECTS ON ALL NON-MACHINED SURFACES AS PER OST 3-4365-79 ARE ALLOWED
- CORRECTION OF CASTING DEFECTS IS PERMITTED.
- IMPACT STRENGTH SHOULD BE CONTROLLED ON SAMPLES.
- SHRINKAGE DEPRESSION ON SURFACE 'A' IS ALLOWED NOT MORE THAN 0.5 mm.
- WEIGHT OF THE CASTING 2.65 Kgs.
- MATERIAL - 23X (C270713) T3 MAN 110-78
- SURFACE FINISH
- CASTING BELONGS TO GROUP II OST 3-4365-79 (SPECIAL PURPOSE CASTINGS)
- SPECIAL TEST - MAGNETIC FLAW DETECTION

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

17.11.2020
Desig & Drawing Office
Ordnance Factory,
Tiruchirappalli-620016

UN CONTROLLED COPY

16. CLEANING - SAND BLASTING

VETTED FOR MATERIAL ONLY
AS PLASTED LETTER L
NAQ 2-3 T/S/B.1 Ids 26-97
M...
20/11/20

⑥ MATL. 23X (C270713), MECH. PROPERTIES
ULTIMATE STRENGTH 130 Kgf/mm² AND
YIELD STRENGTH 110 Kgf/mm² ARE
ALSO BE ACCEPTABLE.

GUIDELINES FOR PROCUREMENT AND INSPECTION OF INVESTMENT CASTING.
(REF. CONTROLLERATE OF QUALITY ASSURANCE (METALS) LETTER NO. MQA-1/QA/1.1.2 dt. 05 MAY '94)

- 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 SPECIMEN 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) IN 5mm DIAMETER WITH 25mm LONG 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 9454-78 AT LOW TEMPERATURE.

CASTINGS AND TEST BARS ARE SUBJECT TO FOLLOWING HEAT-TREATMENT:

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

⑥ INDI. MATL. AND RADIOGRAPHIC TEST. REFER SHEET NO. 2.

SHEETS - 1/2.

| | | |
|--------------------------------------|--|---|
| ② DIM. ADDED DRG. ADVANCED TO B.3 | ③ DR. NO. 007/88 dt. 9-2-75. | ① |
| ① STORE DRG. NO ADDED AMENDMENTS | FOR COMPONENT NO 2A42-02-026 - HOLDER | ① |
| SL. NO. | DRG. NO: 64 C 2026 250 3 | |

| | |
|---------------------------------------|-----------------------------|
| ORDNANCE FACTORY TIRUCHIRAPALLI-16 | DRG. NO: 64 C 2026 250 3 |
|---------------------------------------|-----------------------------|

INDIGENOUS MATERIAL

IS 10343 Gr. 4D OR BS: 3146 Pt 1-74 TYPE CLA-5 Gr. B
 IS 10343 Gr. 4D, CASTING TO BE HEAT-TREATED TO ACHIEVE 41.5-51.5 HRC
 SEPARATELY CAST TEST BARS SHALL MEET THE SPECIFIED MECH. PROPERTIES
 INCLUDING IZOD IMPACT VALUE 14J MIN.

OR

BS: 3146 Pt 1-1974, TYPE CLA-5 GRADE 'B'

UN CONTROLLED COPY

RADIOGRAPHIC TEST

(a) RADIOGRAPHIC ACCEPTANCE STANDARD OF THE CASTING SHOULD BE
 AS PER ASTM E-192 ASTM E-446-84 AUTHORITY: CQAW, JABALPUR
 LY. NO. 281/301/CQAW/BMP-11/OFT/01 DT. 29 JUN 2010

(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 ^{THE} 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 CITED BY CQA(MET) ICHAPUR.

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

CONTROLLERATE OF QUALITY ASSURANCE (METALS) ICHAPUR
 DATED 03 MAY 1995

**INDIGENOUS MATERIAL: IS 10343 Gr 4E WITH C% 0.45-0.50 AND
 MECHANICAL PROPERTIES AS SPECIFIED IN SPECIFICATION FOR THE GRADE
 AUTHORITY: CQA(METALS) ICHAPUR LY.NO-MQA-3/TS/B DT. 21-6-1997**

INDIGENOUS MATERIAL:- IS:10343 -1999: Gr. 19Q: WITH MECHANICAL PROPERTIES
 Re = 1100 MPa (MIN), Rm = 1300 MPa (MIN), % ELONGATION ON 5.65 S0 = 6.0 (MIN)
 % RED OF AREA = 25.0 (MIN.), CHARPY IMPACT VALUE = 4.0 MKS/cm² (MIN.)
 AUTHORITY: CQA(W), JABALPUR LY.NO. 281/301/CQAW/BMP-11/OFT
 DT. 29 JUN. 2010.

VETTED FOR MATERIAL ONLY
 AS PER LAST DCCU NO.
 19195-W DT. 09-08-10

CERTIFIED CORRECT COPY
 OF APPROVED DRAWINGS
 AT THIS DATE.....
 17.11.2020
 Design & Drawing Office
 Ordnance Factory,
 Tiruchirappalli-620016

C. RAJASEKAR
 St. Scientific Officer NFOR SQAO
 Asst. Quality Assurance OFFICER (A) TRICHY.
 Tiruchirappalli - 620016

| | | |
|------------|-------------------------------|--------------------|
| G 7 | DA NO. 005/10 DT. 03-07-10 | Sadhvi 02/07/10 |
| F 6 | DA NO. 044/97 DT. 30-5-97 | Sadhvi 30/6/97 |
| E 3 | DA NO. 70/95 DT. 2-8-95 | Sadhvi |
| D 4 | DA NO. 020/95 DT. 11-4-95 | Sadhvi 11-4-95 |
| AMENDMENTS | DESCRIPTIONS | SIG. & DATE |

| | | | | |
|------------|----------|---------------------------------|------------------|--|
| SHEETS 2/2 | APPROVED | W. S. M. V. 12.4.95 | ORDNANCE FACTORY | COMPONENT NO. 2442-02-026 HOLDER |
| DRAWN | CHECKED | Sadhvi 11.4.95 1/C.30mm D&DO | TIRUCHIRAPALLI | DRG. NO. G3 64C 2026 250 F3 |