

QUALITY MONITORING INSTRUCTION FOR INSPECTION		Issue No : 01
		Rev No :
C 1024 (PAWL)		Date of Issue 09/10/2023
		OFT/MI/30mm/C1024
Rev.No	Amendment	Date

MATERIAL : 23ХГС2МФПУ ТУ АДН 116-78
INDIGENOUS MATERIAL : IS: 10343:1999 Gr.18Q (OR)
BS: 3146 Pt.1, 1974 Type Class-5 Grade 'B'.

CONDITION OF SUPPLY : FULL FINISHED THROUGH INVESTMENT CASTING ROUTE


END USE : 30mm CANNON.


INSPECTION CHECK TO BE CARRIED OUT

Table 'A'


SL NO	CHARACTERISTICS	SPECIFICATION / REQUIREMENT	SAMPLE SIZE																		
1.	Visual	The Casting shall be free from defects such as rust, scale, burrs and any other harmful defects.	100%																		
2.	Dimension	100% Dimension check as per store drawing.																			
3.	Chemical Composition (%)	<p style="text-align: center;"><u>23ХГС2МФПУ ТУ АДН 116-78</u></p> <table style="width: 100%; border: none;"> <tr> <td>C = 0.20-0.24</td> <td>Mo = 0.25-0.30</td> </tr> <tr> <td>Si = 1.80-2.00</td> <td>V = 0.10-0.15</td> </tr> <tr> <td>Mn = 0.50-0.80</td> <td>S = 0.025(Max)</td> </tr> <tr> <td>Cr = 0.60-0.90</td> <td>P = 0.025(Max)</td> </tr> </table> <p style="text-align: center;"><u>IS: 10343,1999 GR.18Q</u></p> <table style="width: 100%; border: none;"> <tr> <td>C = 0.35-0.45</td> <td>Ni = 1.65-2.00</td> </tr> <tr> <td>Mn = 0.70-1.00</td> <td>Mo = 0.20-0.30</td> </tr> <tr> <td>Si = 0.20 - 0.80</td> <td>Cu = 0.30 (Max)</td> </tr> <tr> <td>Cr = 0.70 - 0.90</td> <td>S = 0.045(Max)</td> </tr> <tr> <td></td> <td>P = 0.040(Max)</td> </tr> </table> <p>Total Content of the Unspecified Elements = 0.80 (Max)</p> <p style="text-align: center;"><u>BS: 3146 Pt.1, 1974 Type Class-5 Grade 'B'</u></p> <p>S = 0.020% (Max) P = 0.025% (Max)</p> <p>(The Chemical composition shall be such as to give the mechanical properties specified after the appropriate heat treatment)</p> <p>(Permissible variations in value as per specification standard)</p>	C = 0.20-0.24	Mo = 0.25-0.30	Si = 1.80-2.00	V = 0.10-0.15	Mn = 0.50-0.80	S = 0.025(Max)	Cr = 0.60-0.90	P = 0.025(Max)	C = 0.35-0.45	Ni = 1.65-2.00	Mn = 0.70-1.00	Mo = 0.20-0.30	Si = 0.20 - 0.80	Cu = 0.30 (Max)	Cr = 0.70 - 0.90	S = 0.045(Max)		P = 0.040(Max)	One sample per Heat
C = 0.20-0.24	Mo = 0.25-0.30																				
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	P = 0.040(Max)																				

4.	Mechanical Properties	<u>23ХГС2МФПУ ТУ АДИ 116-78</u> UTS = 130 Kgf/mm ² (Min) Yield Strength = 110 Kgf/mm ² (Min) Elongation = 6% (Min) Impact strength= 4 Kgf.m/cm ² (Min)	One sample Per Heat
		<u>IS: 10343,1999 GR.18Q</u> Tensile Strength = 1241 MPa(Min). Yield Strength = 1000 MPa (Min) Elongation = 5% (Min) Impact(Izod) = 14J (Min) (as per drawing)	
		<u>BS: 3146 Pt.1, 1974 Type Class-5 Grade 'B'</u> Tensile Strength = 1160 N/mm ² (Min) 0.2% Proof Stress = 1000 N/mm ² (Min) Elongation = 5% (Min) Impact(Izod) = 14J (Min) (as per drawing)	
5.	Hardness	41.5-51.5 HRC (as per drawing).	100%
6.	Radiographic Test	(i) Radiographic test as per ASTM-E-446-84, level II (ii) Radiography using Gamma-ray shall not be permitted at all up to the thickness range of 25mm (Test report to be submitted).	5% per Heat
7.	Other Tests	(i) <u>Decarburization Test</u> : 3% per Heat of the casting shall be subjected to decarburization test as its maximum thickness region. Depth of decarburization shall not exceed 2% of the thickness (Test report to be submitted).	3% per Heat
		(ii) Magnetic Particle Inspection (MPI) Test to be carried out on a sampling basis, inspection level -III at AQL 0.65 as per IS:2500 Pt.1, 1992.	As per specification
8.	Protective finish	As Per drawing	100%
9.	Packing	The Packing of the Material shall be done in such a manner to avoid corrosion and damage in handling and transit.	Each consignment
10.	Marking	Details to be marked on the tag Sl.No of Tag, Batch No, No of Component in the Batch, Inspection mark of mould check, Inspection mark of Component.	


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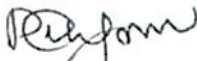

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Note:

1. The Raw material / component to be tested by the firm on selection of the sample by the firm itself for chemical composition and mechanical properties in NABL accredited approved Lab as per Table 'A'.
2. The Firm has to check for the dimensions, visual defects, packing and marking as per Table 'A'. After completion of tests as per Note-1 as above, the Firm has to submit the following documents to OFT.
 - I. The Raw material certificate from the original manufacturer, Heat number, and quantity purchased and number of bars is to be mentioned in the inspection letter to OFT.
 - II. The Chemical and Mechanical test certificates from NABL accredited approved lab as per Table 'A'.
 - III: Dimensional reports including visual as per Table 'A'.
 - IV. Guarantee / Warrantee certificate of supplier against the supply.
3. All the above Documents mentioned at Note No.2 above are to be forwarded to ED/OFT along with supply.
4. OFT shall verify all the documents as above and accord clearance to the firm for dispatch of the material to OFT if all documents are in order.
5. OFT/Trichy shall verify all the parameters as per Table 'A' and after satisfactory results, the material will be accepted /cleared accordingly.
6. Material has to be replaced 100% by the firm in case of non conformity to specification as per Table-A, during inspection at OFT, Trichy.

VERIFICATION OF INSPECTION DOCUMENTS

SL_NO	INSPECTION DOCUMENTS
1	The Raw material original Manufacturer's certificate, Details of Heat Number, Quantity purchased and number of Bars etc.,
2	The Chemical and Mechanical test certificates from NABL accredited approved Lab.
3	Dimension report including visual.
4	Packing slip details.


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