

CT – 20 STAND
TECHNICAL SPECIFICATIONS, SCOPE OF WORK & QA PLAN
(BM/P/CT-20/SOW/2025/01)

1. INTRODUCTION:

The CT20 stand is designed for integration of article from basic sub systems till full integration of article. In addition, this stand makes possible integration of the several type of article subassemblies. The article can be moved in all 03 directions and rotated 360 along its axis as per stand suitable formats.

2. SCOPE OF WORK:

- A. Vendor shall fabricate and supply "CT-20 stand" (1 nos) as per technical specifications of respective drawings and QA plan mentioned below.
- B. The load testing (FAT) of the stands will be carried out as specified in the drawings at BAPL works.
- C. The vendor shall supply the complete list of SPTA (Spares, Tools and Accessories as given in BOM.
- D. The Vendor shall supply set of user manual, technical cum maintenance manual, illustrated spare part list & completed equipment schedule.
- E. CT20 stand commissioning and installation shall be done at site mentioned by BrahMos Aerospace on clearance of Pre dispatch inspection by BrahMos Aerospace and the completed stands will be delivered at BAPL, Pilani.

3. LIST OF DELIVERABLES:

The supply of 2 sets of CT-20 consists of following items:

- a. CT20 stand (as per BOM provided below)
- b. Spares and tool (as per BOM below)
- c. Hardware and Fasteners (as per BOM below)

4. DRAWINGS & DOCUMENTATION:



- A. BrahMos shall provide the complete set of manufacturing drawings for CT-20 to the vendor.
- B. Prior to commencement of production the internal documents (Internal quality records etc.) are to be prepared by vendor, based on BrahMos supplied drawings and documents.
- C. Vendor shall use material as per specs provided by BrahMos. Any change should be after approval by BrahMos in writing only.
- D. Vendor shall handover a set of all reports and documents to BrahMos after successful completion of PDI.

5. REFERENCE STANDARDS:

- a. BrahMos approved drawings as documented below to be referred for fabrication and other technical details.
- b. No change shall be made by the vendor in approved manufacturing, ATPs other technical details and drawings without the prior permission from BrahMos.
- c. The vendor shall not hold any proprietary rights over the technical specs, drawings and documents prepared for this contract.

6. TECHNICAL SPECIFICATIONS:

- a. CT-20 loading stand is universal adjustable facility. Its dimensional inspection will be carried out as per individual item.
- b. Overall dimensions of the stand are:

Sl. No.	Constraints	Specifications
Height of frame (310-CT-20-27.00.000) axis from floor		
1.	During assembly of -0060 and -0010	1350mm
2.	During loading of -0000 into CK341	1350mm
Overall dimension of frame assembly (310-CT-20-27.00.000)		
3.	Length	27960mm



4.	Width	1760mm
5.	Height	1730mm

7. BILL OF MATERIAL (BOM):

a. CT-20 stand: As per drawings.

b. Material equivalent: As per standard of preparation (SOP).

S. No.	Description of Item	Drawing	Quantity	Material/GOST Std.	Equivalent
1.	Rotary ring	310-CT-20-01.00.000	1	-	-
2.		310-CT-20-01.00.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
3.		310-CT-20-01.00.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
4.		310-CT-20-01.00.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
5.		310-CT-20-01.00.004		Steel 20 GOST 1050-88	Fe410 WB IS:2062
6.		310-CT-20-01.00.005		Steel 20 GOST 1050-88	Fe410 WB IS:2062
7.		310-CT-20-01.00.006		Steel 20 GOST 1050-88	Fe410 WB IS:2062
8.		310-CT-20-01.00.007		Steel 20 GOST 1050-88	Fe410 WB IS:2062
9.		310-CT-20-01.00.008		Steel 20 GOST 1050-88	Fe410 WB IS:2062
10.		310-CT-20-01.00.009		Steel 20 GOST 1050-88	Fe410 WB IS:2062
11.		310-CT-20-01.01.001		Sheet GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410W) IS2062
12.		310-CT-20-01.02.001		Sheet GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410W) IS2062
13.		310-CT-20-01.02.001-01		Sheet GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410W) IS2062
14.		310-CT-20-01.03.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
15.		310-CT-20-		Steel 20 GOST	Fe410 WB



		01.03.002		1050-88	IS:2062
16.		GP-1249-01		Steel 20 GOST 1050-74 Steel 45 GOST 1050-74 Steel 30 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR9160C
17.		GP-1249-02		GOST 3284-74	
18.		GP-1250-00/01		Steel 20 GOST 1050-88 Steel 45 GOST 1050-88 Steel 30 XGCA GOST 4543-71 Steel 40 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR9160C AISI 5140 ASTM A29
19.		120-GP-1254-00		Steel 20 GOST 1050-60	20C8 (C20) IS1570 Part2
20.	Bed	310-CT-20-02.00.000	1		
21.		310-CT-20-02.01.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
22.		310-CT-20-02.01.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
23.		310-CT-20-02.02.001		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
24.		310-CT-20-02.02.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
25.		310-CT-20-02.02.004		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
26.		310-CT-20-02.02.005		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
27.		310-CT-20-02.02.006		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
28.		310-CT-20-		Sheet GOST	E250 (Fe410 W)



		02.02.007		19903-74 Steel 20 GOST 1577-81	IS:2062
29.		310-CT-20- 02.02.008		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
30.	Rear Bed	310-CT-20- 03.00.000	1		
31.		310-CT-20- 03.01.001		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
32.		310-CT-20- 03.01.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
33.		310-CT-20- 03.01.003		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
34.		310-CT-20- 03.01.004		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410 W) IS:2062
35.		310-CT-20- 03.00.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
36.	Support Rack	310-CT-20- 04.00.000	1		
37.		310-CT-20- 04.01.001		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
38.		310-CT-20- 04.01.002		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
39.		310-CT-20- 04.02.003		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
40.		310-CT-20- 04.02.005		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
41.		310-CT-20- 04.02.006		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
42.		310-CT-20- 04.03.001		GOST 18240- 89 Steel 3 GOST 535-88	20 C8 (C20) IS1570 Part 2
43.		310-CT-20- 04.03.003		Sheet GOST 19903-74 Steel	20 C8 (C20) IS1570 Part 2



				3 GOST 14637-89	
44.		310-CT-20- 04.03.004		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
45.		GP1250-01		Steel 20 GOST 1050-88 Steel 45 GOST 1050-88 Steel 30 XGCA GOST 4543-71 Steel 40 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR916OC AISI 5140 ASTM A29
46.		GP1250-02		1250-02 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
47.		310-CT-20- 04.00.001		GOST 2590-88 Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
48.		310-CT-20- 04.00.002		Bronze GOST 18175-78	LTB-3 IS:318
49.		310-CT-20- 04.00.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
50.		310-CT-20- 04.00.004		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
51.		310-CT-20- 04.00.005		Steel 20 GOST 1050-88	Fe410 WB IS:2062
52.		310-CT-20- 04.00.006		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
53.		310-CT-20- 04.00.007		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
54.		310-CT-20- 04.00.008		Steel 20 GOST 1050-88	Fe410 WB IS:2062
55.		310-CT-20- 04.00.009		Bronze GOST 18175-78	LTB-3 IS:318
56.		310-CT-20- 04.00.009-01		Bronze GOST 18175-78	LTB-3 IS:318
57.		310-CT-20- 04.00.010		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
58.		310-CT-20- 04.00.011		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
59.	Support	310-CT-20- 05.00.000	2		
60.		310-CT-20-		Steel 3 GOST	20 C8 (C20)



		05.01.001		380-88	IS1570 Part 2
61.		310-CT-20-05.01.002		GOST 18240-89 Steel 3 GOST 535-88	20 C8 (C20) IS1570 Part2
62.		310-CT-20-05.01.003		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
63.		310-CT-20-05.02.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
64.		310-CT-20-05.02.001-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
65.		310-CT-20-05.02.003		GOST 19903-74 Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part2
66.		310-CT-20-05.02.004		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
67.		310-CT-20-05.02.004-01		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
68.		310-CT-20-05.02.005		GOST 2590-88 Steel 30 XGCA GOST 4543-71	Fe410 WB IS:2062
69.		310-CT-20-05.02.006		GOST 8734-75 Steel 20 GOST 8733-66	E250 (Fe410 W) IS:2062
70.		310-CT-20-05.03.001		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
71.		310-CT-20-05.03.002		As per drawing	
72.		310-CT-20-05.03.002-01			
73.		GP1250-01		Steel 20 GOST 1050-88 Steel 45 GOST 1050-88 Steel 30 XGCA GOST 4543-71 Steel 40 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR916OC AISI 5140 ASTM A29
74.		GP1250-02		1250-02 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
75.		310-CT-20-05.04.002		GOST 8240-89 Steel 3 GOST 535-89	20 C8 (C20) IS1570 Part 2



76.		310-CT-20-05.04.003		-	-
77.		310-CT-20-05.00.001		GOST 2590-88 Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
78.		310-CT-20-05.00.002		Bronze GOST 18175-78	LTB-3 IS:318
79.		310-CT-20-05.00.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
80.		310-CT-20-05.00.004		Steel 20 GOST 1050-88	Fe410 WB IS:2062
81.		310-CT-20-05.00.005		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
82.		310-CT-20-05.00.006		Steel 45 GOST 1050-88	45C8 IS 5517
83.	Spacer with bracket	310-CT-20-06.00.000	1		
84.		310-CT-20-06.01.001		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410W) IS2062
85.		310-CT-20-06.01.002		Sheet GOST 19903-74 Steel 20 GOST 1577-81	E250 (Fe410W) IS2062
86.		310-CT-20-06.01.003		Steel 20 GOST 1050-74	Fe410 WB IS:2062
87.		310-CT-20-06.01.004		Sheet GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410W) IS2062
88.		310-CT-20-06.02.001		Sheet GOST 19903-74 Steel 3 GOST 14637-79	20 C8 (C20) IS1570 Part 2
89.		310-CT-20-06.02.002		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
90.		310-CT-20-06.00.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
91.		310-CT-20-06.00.002		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
92.	Movable Support	310-CT-20-07.00.000	6		
93.		310-CT-20-		Steel 3 GOST	20 C8 (C20)



		07.01.001		380-88	IS1570 Part 2
94.		310-CT-20-07.01.002		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
95.		310-CT-20-07.00.001		Steel 30 GOST 4543-71	42Cr4Mo2 IS 5517
96.		GP1250-01		Steel 20 GOST 1050-88 Steel 45 GOST 1050-88 Steel 30 XGCA GOST 4543-71 Steel 40 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR9160C AISI 5140 ASTM A29
97.		GP1250-02		1250-02 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
98.	Guiding Rack	310-CT-20-08.00.000	2		
99.		310-CT-20-08.01.002		GOST 8734-75 Steel 20 GOST 8733-66	E250 (Fe410 W) IS:2062
100.		310-CT-20-08.01.003		GOST 8734-75 Steel 20 GOST 8733-66	E250 (Fe410 W) IS:2062
101.		310-CT-20-08.01.003-01		GOST 8734-75 Steel 20 GOST 8733-66	E250 (Fe410 W) IS:2062
102.		310-CT-20-08.01.005		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
103.		310-CT-20-08.00.001		Steel 30 XGCA GOST 4543-71	15CDV6 AIR9160C
104.		310-CT-20-08.00.002		Bronze GOST 18175-78	-
105.		310-CT-20-08.00.003		Steel 20 GOST 1050-88	20 C8 (C20) IS1570 Part 2
106.	Stand	310-CT-20-09.00.000	2		
107.		310-CT-20-09.00.003		GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062



108.		310-CT-20-09.00.009		-	-
109.		310-CT-20-09.00.010		GOST 19903-74 Steel 3 GOST 16523-89	Fe410 WB IS:2062
110.		310-CT-20-09.00.011		Steel 3 GOST 380-88	Fe410 WB IS:2062
111.		310-CT-20-09.00.012		Steel 3 GOST 380-88	Fe410 WB IS:2062
112.	Wrench with regulated torque	310-CT-20-10.00.000	2		
113.		310-CT-20-10.00.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
114.		310-CT-20-10.00.002		Hard Rubber GOST 2448-53	Hard Rubber
115.	Stand	310-CT-20-11.00.000	1		
116.		310-CT-20-11.01.002		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
117.		310-CT-20-11.01.004		Sheet GOST 19903-74 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
118.	Support	310-CT-20-12.00.000	1		
119.		310-CT-20-12.01.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
120.		310-CT-20-12.01.001-01		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
121.		310-CT-20-12.00.006		-	-
122.	Support	310-CT-20-13.00.000	1		
123.		310-CT-20-13.01.001		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
124.		310-CT-20-13.01.002		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
125.		310-CT-20-13.01.003		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062



126.		310-CT-20-13.01.005		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
127.		310-CT-20-13.02.001		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
128.		310-CT-20-13.02.002		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
129.	Link (Tie rod)	310-CT-20-14.00.000	4		
130.		310-CT-20-14.01.001		GOST 2590-71 Steel 20 GOST 1050-74	Fe410 WB IS:2062
131.		310-CT-20-14.01.001-01		GOST 2590-71 Steel 20 GOST 1050-74	Fe410 WB IS:2062
132.		310-CT-20-14.00.001		GOST 2590-71 Steel 40X GOST 4543-71	42Cr4Mo2 IS 5517
133.		310-CT-20-14.00.001-01		GOST 2590-71 Steel 40X GOST 4543-71	42Cr4Mo2 IS 5517
134.		310-CT-20-14.00.002		Hexa Hedron GOST 8560-67 Steel 30 XGCA GOST 1051-59	42Cr4Mo2 IS 5517
135.		310-CT-20-14.00.002-02		GOST 8560-67 Steel 30 XGCA GOST 1051-59	42Cr4Mo2 IS 5517
136.					
137.	Support	310-CT-20-15.00.000	1		
138.		310-CT-20-15.01.002		GOST 19903-74 Steel 20 GOST 1050-74	Fe410 WB IS:2062
139.		310-CT-20-15.03.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
140.		310-CT-20-15.03.001-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
141.		310-CT-20-15.03.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
142.		310-CT-20-15.03.004		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
143.		310-CT-20-		Steel 20 GOST	Fe410 WB



		15.04.001		1050-88	IS:2062
144.		310-CT-20-15.04.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
145.		310-CT-20-15.05.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
146.		310-CT-20-15.05.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
147.		310-CT-20-15.06.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
148.		310-CT-20-15.06.002		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
149.		310-CT-20-15.06.003		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
150.		310-CT-20-15.06.004		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
151.		310-CT-20-15.07.001		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
152.		310-CT-20-15.07.003		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
153.		310-CT-20-15.00.001		Alloy AMg6 GOST 4784-74	HE15/23432 IS733
154.		310-CT-20-15.00.002		Steel 3 GOST 380-88	Fe410 WB IS:2062
155.		310-CT-20-15.00.003		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
156.		310-CT-20-15.00.004		Steel 20 GOST 1050-88	Fe410 WB IS:2062
157.		310-CT-20-15.00.005		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
158.		310-CT-20-15.00.006		Steel 45 GOST 1050-88	45C8 IS5517
159.		310-CT-20-15.00.007		Steel 20 GOST 1050-88	Fe410 WB IS:2062
160.		310-CT-20-15.00.015		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
161.		310-CT-20-15.00.016		Bronze GOST 18175-78	LTB-3 IS:318
162.		310-CT-20-15.00.018		Steel 3 GOST 380-88	Fe410 WB IS:2062
163.		310-CT-20-15.00.019		GOST 2590-71 Steel 20 GOST	Fe410 WB IS:2062



				1050-88	
164.		310-CT-20-15.00.020		GOST 2590-71 Steel 20 GOST 1050-88	Fe410 WB IS:2062
165.		310-CT-20-15.00.021		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
166.		310-CT-20-15.00.022		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
167.		310-CT-20-15.00.023		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
168.		GP-1249-01		Steel 20 GOST 1050-74 Steel 45 GOST 1050-74 Steel 30 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR9160C
169.		GP-1249-02		GOST 3284-74	
170.		GP-1250-00/01		Steel 20 GOST 1050-88 Steel 45 GOST 1050-88 Steel 30 XGCA GOST 4543-71 Steel 40 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR9160C AISI 5140 ASTM A29
171.	Adapter	310-CT-20-16.00.000	2		
172.		310-CT-20-16.00.001		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
173.		310-CT-20-16.00.002		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
174.	Support	310-CT-20-18.00.000	2		
175.		310-CT-20-18.01.002		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
176.		310-CT-20-18.01.003		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
177.		310-CT-20-18.01.004		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
178.		310-CT-20-		Steel 20 GOST	Fe410 WB



		18.01.007		1050-88	IS:2062
179.		310-CT-20-18.01.008		Steel 20 GOST 1050-88	Fe410 WB IS:2062
180.		310-CT-20-18.01.005		Steel 20 GOST 1050-88	Fe410 WB IS:2062
181.		310-CT-20-18.02.002		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
182.		310-CT-20-18.02.006		Steel 20 GOST 1050-88	Fe410 WB IS:2062
183.		310-CT-20-18.02.003		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
184.		310-CT-20-18.02.004		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
185.		310-CT-20-18.02.006		Steel 20 GOST 1050-88	Fe410 WB IS:2062
186.		310-CT-20-18.03.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
187.		310-CT-20-18.03.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
188.	Thrust Load bearing ring	310-CT-20-19.00.000	1		
189.		310-CT-20-19.00.001		Alloy AMg6 GOST 4784-74	HE15/23432 IS733
190.		310-CT-20-19.00.002		GOST 19903-74 Steel 20 GOST 1577-70	Fe410 WB IS:2062
191.		310-CT-20-19.00.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
192.		310-CT-20-19.00.005		Steel 35 GOST 1050-88	Fe410 WB IS:2062
193.		310-CT-20-19.00.006		Steel 3 GOST 1050-88	Fe410 WB IS:1570
194.		310-CT-20-19.00.007		Steel 35 GOST 1050-88	Fe410 WB IS:2062
195.	Bracket	310-CT-20-20.00.000	2		
196.		310-CT-20-20.01.001		Steel 30 XGCA GOST 4543-71	15CDV6 AIR9160C
197.		310-CT-20-20.01.002		GOST 19903-74 Steel 30XGCA GOST 11269-76	42Cr4Mo2 IS 5517



198.		310-CT-20-20.01.003		GOST 19903-74 Steel 30XGCA GOST 11269-76	42Cr4Mo2 IS 5517
199.		310-CT-20-20.00.001		GOST 19903-74 Steel 3 GOST 380-86	Fe410 WB IS:2062
200.		310-CT-20-20.00.002		Steel 35 GOST 1050-88	35C8 IS5517
201.		310-CT-20-20.00.003		Steel 35 GOST 1050-88	35C8 IS5517
202.		310-CT-20-20.00.004		Steel 20 GOST 1050-88	Fe410 WB IS:2062
203.	Bracket	310-CT-20-20.00.000-01	2		
204.	Foot rest	310-CT-20-22.00.000	4		
205.		310-CT-20-22.00.002		GOST 2590-71 Steel 3 GOST 535-79	Fe410 WB IS:2062
206.	Bracket	310-CT-20-23.00.000	1		
207.		310-CT-20-23.00.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
208.		310-CT-20-23.00.004		Steel 20 GOST 1050-88	Fe410 WB IS:2062
209.		310-CT-20-23.00.004-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
210.		310-CT-20-23.00.005		Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
211.	Support	310-CT-20-24.00.000	1		
212.		310-CT-20-24.01.003		GOST 19903-74 Steel 20 GOST 1577-70	Fe410 WB IS:2062
213.		310-CT-20-24.01.004		GOST 19903-74 Steel 20 GOST 16523-70	E250 (Fe410 W) IS:2062
214.		310-CT-20-24.01.004-01		GOST 19903-74 Steel 20 GOST 1577-70	E250 (Fe410 W) IS:2062
215.		310-CT-20-24.02.004		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062



216.		310-CT-20-24.03.101		Steel 20 GOST 1050-88	Fe410 WB IS:2062
217.		310-CT-20-24.03.102		Steel 20 GOST 1050-88	Fe410 WB IS:2062
218.		310-CT-20-24.03.001		Steel 45 GOST 1050-88	45 (C8)IS1570part2
219.		310-CT-20-24.03.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
220.		310-CT-20-24.03.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
221.		310-CT-20-24.03.004		Steel 45 GOST 1050-88	45 (C8)IS1570part2
222.		310-CT-20-24.00.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
223.		310-CT-20-24.00.003		Sheet GOST 19904-74 Steel 20 GOST 1050-74	Fe410 WB IS:2062
224.		310-CT-20-24.00.004		Bronze GOST 18175-78	LTB-3 IS:318
225.		310-CT-20-24.00.005		Steel 20 GOST 1050-88	Fe410 WB IS:2062
226.		310-CT-20-24.00.006		Steel 45 GOST 1050-88	45 (C8)IS5517
227.		310-CT-20-24.00.007		Steel 20 GOST 1050-88	Fe410 WB IS:2062
228.		310-CT-20-24.00.007-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
229.		310-CT-20-24.00.008		Steel 45 GOST 1050-88	45 (C8)IS5517
230.		310-CT-20-24.00.009		Steel 20 GOST 1050-88	Fe410 WB IS:2062
231.	Frame	310-CT-20-25.00.000	2		
232.		310-CT-20-25.00.002		GOST 8240-89 Steel 3 GOST 535-89	20 C8 (C20) IS1570 Part 2
233.		310-CT-20-25.00.006		Steel 20 GOST 1050-88	Fe410 WB IS:2062
234.		310-CT-20-25.00.009		Steel 20 GOST 1050-88	Fe410 WB IS:2062
235.					
236.	Bracket	310-CT-20-26.00.000	2		
237.		310-CT-20-26.00.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062



238.	Frame	310-CT-20-27.00.000	1		
239.		310-CT-20-27.00.002		Steel 3 GOST 380-88	Fe410 WB IS:2062
240.		310-CT-20-27.00.003		GOST 8240-89 Steel 3 GOST 535-89	20 C8 (C20) IS1570 Part 2
241.		310-CT-20-27.00.004		B-PN-10 GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
242.		310-CT-20-27.00.004-01		GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
243.		310-CT-20-27.00.005		B-PN-10 GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
244.		310-CT-20-27.00.005-01		GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
245.		310-CT-20-27.00.008		B-PN-10 GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
246.		310-CT-20-27.00.009		Steel 3 GOST 380-88	Fe410 WB IS:2062
247.		310-CT-20-27.00.012		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
248.	Frame	310-CT-20-27.00.000-01	1		
249.	Frame	310-CT-20-27.00.000-02	1		
250.	Frame	310-CT-20-27.00.000-03	1		
251.	Frame	310-CT-20-27.00.000-04	1		
252.	Frame	310-CT-20-27.00.000-05	1		



253.					
254.	Rear Support	310-CT-20-29.00.000	1		
255.		310-CT-20-29.01.003		Steel 20 GOST 19904-74	E250 (Fe410 W) IS:2062
256.		310-CT-20-29.01.005		Steel 20 GOST 1050-88	Fe410 WB IS:2062
257.		310-CT-20-29.01.006		Steel 20 GOST 19904-74	Fe410 WB IS:2062
258.		310-CT-20-29.02.001		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
259.		310-CT-20-29.02.002		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
260.		310-CT-20-29.03.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
261.		310-CT-20-29.03.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
262.		310-CT-20-29.00.001		-	-
263.					
264.	Front Support	310-CT-20-30.00.000	1		
265.		310-CT-20-30.01.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
266.		310-CT-20-30.01.001-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
267.		310-CT-20-30.01.004		-	-
268.		310-CT-20-30.01.005		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
269.		310-CT-20-30.01.005-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
270.		310-CT-20-30.02.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
271.		310-CT-20-30.02.002		-	-
272.	Reduction Gear	310-CT-20-31.00.000	1		
273.		310-CT-20-31.01.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
274.		310-CT-20-31.02.007		GOST 19903-74 Steel 20 GOST 1050-88	20 C8 (C20) IS1570 Part 2



275.		310-CT-20-31.03.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
276.		310-CT-20-31.03.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
277.		310-CT-20-31.04.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
278.		310-CT-20-31.04.002		Textolite GOST 10292-74	-
279.		310-CT-20-31.00.001		GOST 2590-88 Steel 30 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
280.		310-CT-20-31.00.002		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
281.		310-CT-20-31.00.003		Steel 45 GOST 1050-88	45 (C8)IS5517
282.		310-CT-20-31.00.004		GOST 2590-88 Steel 3 GOST 16923-89	CRS IS513
283.		310-CT-20-31.00.005		GOST 19903-74 Steel 20 GOST 1050-88	20 C8 (C20) IS1570 Part 2
284.		310-CT-20-31.00.006		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
285.		310-CT-20-31.00.007		Steel 45 GOST 1050-88	45 (C8)IS5517
286.		310-CT-20-31.00.008		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
287.		310-CT-20-31.00.009		Steel 20 GOST 1050-88	Fe410 WB IS:2062
288.		310-CT-20-31.00.010		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
289.		310-CT-20-31.00.011		Steel 3 GOST 380-88	15CB IS 1570
290.		310-CT-20-31.00.012		Steel 20 GOST 1050-88	Fe410 WB IS:2062
291.		310-CT-20-31.00.013		Steel 45 GOST 1050-88	45 (C8)IS5517
292.		310-CT-20-31.00.014		Bronze GOST 18175-78	LTB-3 IS:318
293.		310-CT-20-31.00.014-01		Bronze GOST 18175-78	LTB-3 IS:318
294.		310-CT-20-31.00.014-02		Bronze GOST 18175-78	LTB-3 IS:318
295.		310-CT-20-31.00.014-03		Bronze GOST 18175-78	LTB-3 IS:318



296.	Trolley	310-CT-20-32.00.000	3		
297.		310-CT-20-32.02.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
298.		310-CT-20-32.02.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
299.		310-CT-20-32.02.002-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
300.		310-CT-20-32.04.003		GOST 19903-74 Steel 20 GOST 1050-88	20 C8 (C20) IS1570 Part 2
301.		310-CT-20-32.05.001		Steel 3 GOST 380-88	15CB IS 1570
302.		310-CT-20-32.05.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
303.		310-CT-20-32.05.003		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
304.		310-CT-20-32.05.004		Steel 45 GOST 1050-88	45 (C8)IS5517
305.		GP1250-01		Steel 20 GOST 1050-88 Steel 45 GOST 1050-88 Steel 30 XGCA GOST 4543-71 Steel 40 XGCA GOST 4543-71	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2 15CDV6 AIR916OC AISI 5140 ASTM A29
306.		GP1250-02		1250-02 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
307.		310-CT-20-32.00.001		Steel 20 GOST 1050-88	Fe410 WB IS:2062
308.	Trolley	310-CT-20-32.00.000-01	1	Steel 20 GOST 1050-88	Fe410 WB IS:2062
309.		310-CT-20-32.00.002		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
310.		310-CT-20-32.00.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
311.		310-CT-20-32.00.004		Felt GOST 5308-71	Felt
312.		310-CT-20-32.00.004-01		Felt GOST 5308-71	Felt
313.		310-CT-20-32.00.005		Steel 20 GOST 1050-88	Fe410 WB IS:2062
314.		310-CT-20-		Steel 20 GOST	Fe410 WB



		32.00.006		1050-88	IS:2062
315.		310-CT-20-32.00.007		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
316.		310-CT-20-32.00.008		Steel 20 GOST 1050-88	Fe410 WB IS:2062
317.		310-CT-20-32.00.009		Steel 20 GOST 1050-88	Fe410 WB IS:2062
318.		310-CT-20-32.00.010		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
319.		310-CT-20-32.00.011		Steel 20 GOST 1050-88	Fe410 WB IS:2062
320.		310-CT-20-32.00.011-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
321.		310-CT-20-32.00.011-02		Steel 20 GOST 1050-88	Fe410 WB IS:2062
322.		310-CT-20-32.00.011-03		Steel 20 GOST 1050-88	Fe410 WB IS:2062
323.		310-CT-20-32.00.012		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
324.		310-CT-20-32.00.013		Sheet GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
325.		310-CT-20-32.00.015		Steel 40 XGCA GOST 4543-71	42Cr4Mo2 IS 5517
326.		310-CT-20-32.00.016		GOST 19904-74 GOST 16523-70	CRS IS513
327.	Support	310-CT-20-33.00.000	1		
328.		310-CT-20-33.01.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
329.		310-CT-20-33.00.002		Steel 45 GOST 1050-88	45 (C8)IS5517
330.		310-CT-20-33.00.003		Bronze GOST 18175-78	LTB-3 IS:318
331.		310-CT-20-33.00.004		Steel 3 GOST 380-88	15CB IS 1570
332.	Link	310-CT-20-34.00.000	4		
333.		310-CT-20-34.01.002		GOST 2590-71 Steel 20 GOST 1050-88	Fe410 WB IS:2062
334.		310-CT-20-34.01.002-01		GOST 2590-71 Steel 20 GOST	Fe410 WB IS:2062



				1050-88	
335.		310-CT-20-34.00.001		Round GOST 2590-71 Steel 40X GOST 4543-71	42Cr4Mo2 IS 5517
336.		310-CT-20-34.00.001-01		Round GOST 2590-71 Steel 40X GOST 4543-71	42Cr4Mo2 IS 5517
337.		310-CT-20-34.00.002		Hexagon GOST 8560-67 Steel 30 XGCA GOST 1051-59	42Cr4Mo2 IS 5517
338.		310-CT-20-34.00.002-01		Hexagon GOST 8560-67 Steel 30 XGCA GOST 1051-59	42Cr4Mo2 IS 5517
339.	Bracket	310-CT-20-35.00.000	4		
340.		310-CT-20-35.00.002		Steel 30XGCA GOST 4543-71	42Cr4Mo2 IS 5517
341.	Rack	310-CT-20-36.00.000	1		
342.		310-CT-20-36.00.002		Sheet GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
343.	Rack	310-CT-20-37.00.000	1		
344.	Beam	310-CT-20-38.00.000	1		
345.		310-CT-20-38.00.005		Sheet GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
346.		310-CT-20-38.00.005-01		Sheet GOST 19903-74 Steel 3 GOST 14637-89	Fe410 WB IS:2062
347.	Rack	310-CT-20-39.00.000	1		
348.		310-CT-20-39.01.012		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
349.		310-CT-20-39.01.012-01		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
350.		310-CT-20-		Steel 20 GOST	Fe410 WB



		39.01.013		1050-88	IS:2062
351.		310-CT-20-39.01.014		Steel 3 GOST 380-88	20 C8 (C20) IS1570 Part 2
352.	Jack	GP-1425-00.000	44	-	-
353.	Trolley	310-CT-20-40.00.000	1		
354.		310-CT-20-40.01.015		GOST 8734-75 Steel 20 GOST 8733-66	E250 (Fe410 W) IS:2062
355.		310-CT-20-40.01.016		Steel 20 GOST 1050-88	Fe410 WB IS:2062
356.		310-CT-20-40.01.021		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
357.		310-CT-20-40.01.021-01		GOST 19903-74 Steel 20 GOST 1050-88	Fe410 WB IS:2062
358.		310-CT-20-40.01.022		GOST 8240-72 Steel 3 GOST 380-86	20 C8 (C20) IS1570 Part 2
359.		310-CT-20-40.01.023		GOST 2590-71 Steel 20 GOST 1050-88	Fe410 WB IS:2062
360.		310-CT-20-40.01.001		Bronze GOST 18175-78	LTB-3 IS:318
361.		310-CT-20-40.01.002		Bronze GOST 18175-78	LTB-3 IS:318
362.		310-CT-20-40.01.003		Steel 20 GOST 1050-88	Fe410 WB IS:2062
363.		310-CT-20-40.01.004		Steel 45 GOST 1050-88	45 (C8)IS 1570 part2
364.		310-CT-20-40.01.005		GOST 2590-71 Steel 20 GOST 1050-88	Fe410 WB IS:2062
365.		310-CT-20-40.01.006		Sheet GOST 19903-74 Steel 3 GOST 380-86	20 C8 (C20) IS1570 Part 2
366.		310-CT-20-40.01.007		GOST 2590-71 Steel 20 GOST 1050-88	Fe410 WB IS:2062
367.		GP1250-01		Steel 20 GOST 1050-88 Steel 45 GOST 1050-88	20C8 (C20) IS1570 Part2 45 C8 (C45) IS1570 Part2



				Steel 30 XGCA GOST 4543-71 Steel 40 XGCA GOST 4543-71	15CDV6 AIR916OC AISI 5140 ASTM A29
368.		GP1250-02		1250-02 Steel 3 GOST 14637-89	20 C8 (C20) IS1570 Part 2
369.		310-CT-20- 40.00.001		Pipe GOST 8134-75 B20 GOST 8733-74	IS1161
370.		310-CT-20- 40.00.002		Steel 20 GOST 1050-88	Fe410 WB IS:2062
371.		310-CT-20- 40.00.002-01		Steel 20 GOST 1050-88	Fe410 WB IS:2062
372.		310-CT-20- 40.00.003		Steel GOST 19904-74 Steel GOST 16523-70	CRS IS513
373.		310-CT-20- 40.00.004		Steel 20 GOST 1050-88	Fe410 WB IS:2062
374.		310-CT-20- 40.00.005		Steel 40 GOST 4543-71	42Cr4Mo2 IS 5517
375.	Support	310-CT-20- 47.00.000	1	As Per drawing	
376.	Support	310-CT-20- 48.00.000	1		
377.	Support	310-CT-20- 49.00.000	1		
378.	Support	310-CT-20- 50.00.000	1		
379.	Bracket	310-CT-20- 52.00.000	2		
380.	Bracket	310-CT-20- 53.00.000	1		
381.	Bracket	310-CT-20- 53.00.000-01	1		
382.	Ring	310-CT-20- 54.00.000	1		
383.	Support	310-CT-20- 55.00.000	1		
384.	Rear Bandage	310-CT-20- 56.00.000	1		
385.	Front Bandage	310-CT-20- 57.00.000	1		



386.	Roller Support	310-CT-20-58.00.000	4		
387.	Tie Rod	310-CT-20-59.00.000	4		
388.	Support	310-CT-20-60.00.000	2		
389.	Bracket	310-CT-20-61.00.000	2		
390.	Bracket	310-CT-20.00.00.001	10	Steel 20 GOST 1050-88	Fe410 WB IS:2062
391.	Bracket	310-CT-20.00.00.002	10	Steel 20 GOST 1050-88	Fe410 WB IS:2062
392.	Plank	310-CT-20.00.00.003	20	Steel 20 GOST 1050-88	Fe410 WB IS:2062
393.	Plank	310-CT-20.00.00.004	4	GOST 19903-74 Steel 3 GOST 380-86	Fe410 WB IS:2062
394.	Nut	310-CT-20.00.00.005	4	Steel 20 GOST 1050-88	Fe410 WB IS:2062
395.	Nut	310-CT-20.00.00.006	4	Steel 20 GOST 1050-88	Fe410 WB IS:2062
396.	Washer	310-CT-20.00.00.007	4	Steel 20 GOST 1050-88	Fe410 WB IS:2062
397.	Gasket	310-CT-20.00.00.008	2	GOST 19903-74 Steel 3 GOST 380-86	Fe410 WB IS:2062
398.	Support	310-CT-20.00.00.009	5	Alloy AMg6 GOST 4784-74	HE15/23432 IS733
399.	Gasket	310-CT-20.00.00.010	30	GOST 19904-74 Steel 20 GOST 1050-88	CRCS sheet IS:513
400.	Bolt	310-CT-20.00.00.011	4	Steel 3 GOST 380-86	20C8 (C20) IS1570 Part2
401.	Star	310-CT-20.00.00.012	1	Steel 45 GOST 1050-88	45C8 + QT IS1570
402.	Axle	310-CT-20.00.00.013	1	Steel 20 GOST 1050-88	Fe410 WB IS:2062
403.	Plank	310-CT-20.00.00.014	1	D-16T GOST 4784-74	HE15/234325 IS733
404.	Plate	310-CT-20.00.00.015	1	Steel 3 GOST 380-86	Fe410 WB IS:2062
405.	Wrench	310-CT-20.00.00.016	4	-	-
406.	Thimble	310-CT-20.00.00.017	2	-	-



407.	Gasket	310-CT- 20.00.00.018	8	Steel 20 GOST 1050-88	Fe410 WB IS:2062
408.	Strap	310-CT- 20.00.00.019	4	Steel 20 GOST 1050-88	Fe410 WB IS:2062
409.	Support	310-CT- 20.00.00.020	5	Standard items	
410.	Clamp for rope	310-CT- 20.00.00.021	4		
411.	Bolt	310-CT- 20.00.00.022	16		
412.	Adaptor	310-CT- 20.00.00.023	4		
413.	Bolt	310-CT- 20.00.00.024	3		
414.	Pin	310-CT- 20.00.00.025	2		
415.	Screw	M6*15.46.016 GOST17475- 80	2		
416.	Screw	M8*16.46.016 GOST1478-75	4		
417.	Screw	M20*40.46.016 GOST1486-75	20		
418.	Nut	M30.5.016 GOST 5916-70	8		
419.		M12.5.016 GOST 5915-70	190		
420.		M16.5.016 GOST 5915-70	44		
421.		M20.5.016 GOST 5915-70	18		
422.	Washers	6.65r.05 GOST 6402-70	60		
423.		16.65r.05 GOST 6402-70	78		
424.		6.02.016 GOST 11371- 78	182		
425.		12.02.016 GOST 11371- 78	256		
426.		20.02.016 GOST 11371- 78	19		
427.		16.02.016 GOST 11371-	20		
				Standard items	



		78		Standard items
428.		30.02.016 GOST 11371-78	8	
429.		12.02.016 10906-78	30	
430.		12.02.016 6958-78	2	
431.	Pins	12h6*30 GOST 3128-70	2	
432.	Pins	16h6*70 GOST 3128-70	10	
433.	Jumper	A5-220	5	
434.	Jumper	A5-700	19	
435.	Chain	12.7-1820-1 GOST 13568-75 L16000mm	1	
436.	Link	12.7-1820-1 GOST 13568-75	1	
437.	Ground wire	1-2000, GOST 18714-81	6	
438.	Wire	KO-1.0 GOST 792-67 L18000mm	2	
439.	Hoist	T-695	2	
440.	Rope	12-Г-1568 (160);GOST 3077-80 L=50m	2	
441.	Bolts GOST 7798-70	M6- 8gx20.46.016	74	
442.		M6- 8gx25.46.016	6	
443.		M12- 8gx25.46.016	20	
444.		M12- 8gx30.46.016	114	
445.		M12- 8gx55.46.016	122	
446.		M12- 8gx65.46.016	48	
447.		M16- 8gx45.46.016	16	
448.		M16- 8gx60.46.016	16	



449.		M16*1.5- 8gx40.46.016	2	
450.		M16*1.5- 8gx55.46.016	4	
451.		M16- 8gx30.46.016	2	
452.		M16*1.5- 8gx32.46.016	4	
453.		M16- 8gx90.46.016	8	
454.		M20- 8gx50.46.016	1	
455.		M20- 8gx90.46.016	8	
456.	Bolts GOST 7817-72	M12- 8gx40.109	24	
457.		M12- 8gx60.109	4	
458.	Bolts	7002-0715 GOST 9047-69	2	
459.		7002-0596 GOST 14724- 69	20	

c. Tools/ Accessories (01 set per CT 20)

A set of Tools/ Accessories will be supplied:

S. No.	Description	Qty.
460.	Spanner 65 (Stanley make)	01
461.	Spanner 55 (Stanley make)	02
462.	Spanner 50 (Stanley make)	01
463.	Spanner 46 (Stanley make)	01
464.	Spanner 36 (Stanley make)	01
465.	Earthing connectors with lugs (Copper)	32 nos
466.	Earthing strip with lugs and nuts (Copper) ¾ " width and 2mm thickness	12 mtrs
467.	Junction box	10
468.	Felts	01 set as per ct20



d. List of hardware spares (01 set per CT-20):

S. No.	Description	Make/ Grade/ IS Std	Qty.
1.	M6*16 LG Hex Bolts	Unbrako/ TVS make 10.9	50
2.	M6 Flat washers	IS 2016	50
3.	M16*55 LG Hex Bolts *1.5 pitch	Unbrako/ TVS make 10.9	04
4.	M16*40 LG Hex Bolts *1.5 pitch	Unbrako/ TVS make 10.9	02
5.	M10*65 LG Hex Bolts	Unbrako/ TVS make 10.9	12
6.	M10 flat washers	IS 2016	12
7.	M12*60 LG Hex Bolts	Unbrako/ TVS make 10.9	08
8.	M12 nuts and flat washers	Unbrako/ TVS make 10.9 & IS 2016	08



8. RAW MATERIALS:

- It is the responsibility of the vendor to procure all raw materials and standard parts as mentioned in the drawings and material equivalent recommended as per BAPL, required for fabrication of CT-20 stand.
- Materials used for the fabrication of individual parts and standard components shall be in accordance with the GOST standards mentioned in the drawings.
- Vendor shall carry out the chemical analysis and mechanical strength tests of the raw materials and submit the test certificates to BAPL, in case of non-availability of the same from OEM.
- In the case standard parts such as fasteners, washers etc., UNBRAKO 10.9 class should be used & test reports from the original manufacturer shall be submitted. Parts shall be checked for any surface defects by Magnaflux method.
- Vendor shall submit raw material certificates of all the components for BAPL approval prior to the commencement of fabrication.

9. MANUFACTURING PROCESS:

The fabrication of item consists of the following activities:

- Manufacturing of any tooling/fixtures required for welding, machining, assembly, inspection etc. shall be the responsibility of the vendor.
- Welding: The sub-assemblies of items shall be fabricated by the process of welding as per relevant welding standards applicable for the selected materials. All the weld joints shall be tested by Red Dye penetrant test. All the weld joints shall be free from weld cracks.
- Welding procedure: All the weld joints shall be carried out as per relevant standards. Weld joints shall be inspected for their uniformity and cleanliness.
- Test for welder: Welding of the subassemblies shall be carried out by welders qualified in accordance with BS EN 287-11992-00-00 1992 Amd 2: Approval Testing of welders for fusion welding Part 1: Steels AMD9804; Jan 15, 1998.
IS 7310: Part I: 1974: Approval tests for welders working to approved welding procedures Part 1: Fusion welding of steel.
- Welding documents WPS, PQR & WPQ should be generated and maintained.



- Dye penetrant test:
Finished weld joints shall be checked with Red dye penetrant testing for the presence of surface defects like cracks on the weld at every weld joint on the assembly. The test results must be submitted to BAPL for the final acceptance of the assembly.
- Weld defects:
Welding defects, if any, such as porosity, pin holes, incomplete fusion, detected in the above test shall be removed by gouging or chipping (and grinding) followed by re-welding.
- Stress Relieving:
All welded sub-assemblies shall be stress relieved after welding and before final machining. Vendor shall provide stress relieving data card as proof of having carried out the operation.
- HEAT TREATMENT: The parts are to be heat treated to obtain specified hardness given in drawings by following relevant heat treatment cycle for selected materials.
- MACHINING: Sub-assemblies and components to be machined to achieve dimensions and tolerances as specified in drawings to meet final assembly requirements.
- SURFACE COATING:
Individual components of the items shall be surface coated as mentioned in the part drawings after proper cleaning of the surfaces for protection of machined surfaces from corrosion. Suitable surface treatment must be adopted for ferrous components to prevent corrosion even if the same is not mentioned in drawing.

10. PAINTING DETAILS:

- Vendor shall carryout surface preparation, painting / coating of fabricated components.
- Protection of fasteners with specified tolerances shall be ensured by the vendor with all necessary sealants, putties, gaskets etc. shall be arranged by vendor for operational range from -20 deg C to +55 deg, 95% RH.
- The spray painting procedure and appropriate standards to be followed. The vendor shall make necessary arrangements for spraying specified paint i.e. Dove Grey (IS 694) should be used for the coat.
- Surfaces which are not painted should be preserved with application of lubricants.



- Painting process and quality to be checked and part of ATP. Following process is recommended to follow:
 - A. PU coating (matt finish) paint to be used as per approved colour pattern scheme, confirmed by BAPL.
 - B. 02 coats of primer (60-80 microns)
 - C. 02 coats of micaceous iron oxide (170 microns)
 - D. 02 coat of PU coating.
 - E. Curing of 12 hrs between coat.
 - F. Overall coating in micron should not exceed 330 microns.
 - G. All major subassemblies shall be labelled properly in black paint as per No. given in drawings. Suitable size of letters/ numerical which can be easily distinguished must be used.

Eg. 310-CT-20-32.00.000 (Trolley)

- H. Main equipment label must be made of metal sheet and consist of the following information:
 - i. BrahMos serial no. of equipment
 - ii. Nomenclature of item
 - iii. Month/Year of manufacturing
 - iv. Made by:

11. ACCEPTANCE TEST PLAN:

Stand will be subjected to the following tests and vendor shall perform the test in his premises in the presence of nominated rep of BrahMos Aerospace, Pilani. The stand will be subjected to the following sequence of tests.

- I. Checking of BOM & internal QC reports.

(OEM will produce all documents and test reports to inspecting authority. COC of bought out items should be provided by vendor.)
- II. Physical verification and fitment trial with load testing.

(OEM will integrate all parts of CT-20 as per drawings and requirements. Vendor should have sufficient space in factory for the layout of CT-20 stands and demonstrate load testing as per drawing to BrahMos Aerospace team during PDI)

a. INSPECTION AND QUALITY CONTROL:



- Vendor shall submit list of near equivalent raw materials to be used for fabrication of components & sub-assemblies of stands and heat treatment cycle to be followed for respective materials.
- Vendor shall inspect all assemblies and submit dimensional inspection reports. Also, inspection of critical dimensions will be carried out at firm in the presence of BAPL representatives. The deviations if any, are to be approved/cleared by BAPL and correction of the deviations shall be vendor's responsibility.
- Vendor will follow these guidelines:
 - a. All dimensional tolerances and fits are to be maintained as per technical specifications.
 - b. All frictional surfaces (Adjustment mechanisms, gears etc.) should be lubricated and smooth movement to be ensured.
 - c. Bought out items (Bearings, fasteners, wire rope, chains etc.) should be of equivalent capacity and of reputed make.
 - d. Felts at supports should be properly glued.
 - e. Welds should be proper without blowholes and sputter with uniform flow.
- Load test of the CT-20 stand shall be in the scope of the vendor. It shall be carried out in the presence of BAPL representative. After load testing DPT (Die penetrant test) should be carried out after load test to validate no damage of CT-20 stand.
- Fitment trial of CT-20 stand will be carried out in BAPL in presence of the vendor. Acceptance of the CT-20 stand shall be subjected to successful completion of fitment & operational tests. Final acceptance authority of the CT-20 stand shall be with BAPL.

b. RESPONSIBILITY MATRIX

Activity / Work Category	Scope of Client / Consultant (Us)	Scope of Vendor
Design Development	<ul style="list-style-type: none"> ✓ Provide conceptual design direction and overall design approval ✓ Supply branding guidelines, artwork, and content ✓ Approve final design and layouts 	— (Vendor supports only after approval)



Technical Documentation	<ul style="list-style-type: none"> ✓ Prepare technical requirements and specifications ✓ Review and approve technical drawings ✓ Approve engineering calculations and structural layouts 	<ul style="list-style-type: none"> ✓ Produce shop drawings, detailed fabrication drawings ✓ Coordinate with event organizer for technical submissions
Materials & Components Selection	<ul style="list-style-type: none"> ✓ Approve material types and finishes ✓ Approve equivalent materials proposed by vendor 	<ul style="list-style-type: none"> ✓ Propose materials and equivalent alternatives ✓ Provide datasheets and samples
Manufacturing / Fabrication	— (Not in our scope)	<ul style="list-style-type: none"> ✓ Full fabrication of booth structure ✓ Carpentry, metalwork, painting, graphics printing ✓ Electrical prefabrication and AV mounting
Quality Testing (Factory / Workshop)	— (Not in our scope)	<ul style="list-style-type: none"> ✓ Conduct internal quality checks ✓ Pre-assembly tests for structure, lighting, and AV ✓ Provide QA documentation
Logistics & Transportation	— (Unless otherwise noted)	<ul style="list-style-type: none"> ✓ Packing, transport, and delivery of all booth elements to venue
On-site Installation	<ul style="list-style-type: none"> ✓ Provide supervision and oversight ✓ Approve final on-site layout adjustments 	<ul style="list-style-type: none"> ✓ Full booth assembly ✓ Electrical connections & AV setup ✓ Graphic installation & furniture placement
Inspection & Verification	<ul style="list-style-type: none"> ✓ Perform inspection of completed stand ✓ Validate materials, workmanship, alignment, safety compliance ✓ Approve punch list 	<ul style="list-style-type: none"> ✓ Rectify defects identified during inspection



	closure	
Final Commissioning / Handover	<ul style="list-style-type: none"> ✓ Lead final commissioning ✓ Approve the final ready-for-show condition ✓ Sign-off & certify project completion 	<ul style="list-style-type: none"> ✓ Support commissioning ✓ Provide required documentation and warranties

c. CERTIFICATES:

Vendor shall submit 2 copies of following documents:

- Raw Material & mechanical properties test certificates.
- Heat treatment certificate of parts.
- Dimensions report of all components and assemblies.
- Functional test certificates.
- Waiver proceedings on all deviations and record of repairs, if any.
- Welding documents WPS; PQR & WPQ should be generated and maintained. Testing of weld joints using Dye Penetrant Test (100%) should be performed and records maintained.

d. REJECTIONS:

BAPL reserves the right to reject any material/ sub-assembly /assembly not conforming to this QA plan or to authorized modifications.



