

Reasoned Documents of Draft Specification no TI/SPC/OHE/ATD/060 (Rev 2)

Clause No	Clause available in Uploaded Specification of ATD TI/SPC/OHE/ATD/060(rev 2)	Comments Submitted by M/s MOSDORFER	RDSO Remarks
	<p>1.3 Three pulley type regulating equipment with modified pulley grooved: It is to be installed at either end of traction overhead lines for providing a constant tension of 2000 kg in traction overhead line conductors at different ambient temperatures by using balancing weights of 665 kgf. It comprises of a Pulley block consisting of two pulleys towards anchoring mast/portal and one movable pulley on the OHE side. The assembly shall have anti-falling device so that in case of breakage of stainless steel wire rope and/or clevis & eye, the overhead conductors are not allowed to fall.</p> <p>1.4 Three pulley type regulating equipment with 2400 kgf tension: It is to be installed at either end of traction overhead lines for providing a constant tension of 2400 kg in traction overhead line conductors at different ambient temperatures by using balancing weights of 800 kgf. It comprises of a pulley block consisting of two pulleys towards anchoring mast/portal and one movable pulley on the OHE</p>	<p>1.4 The Indian Railways employ simple polygonal Cadmium Copper Catenary and Copper Contact wire in OHE for supplying power to Electric locomotives. For ensuring reliable current collection by Pantographs of Electric locomotives, Auto Tensioning Devices henceforth referred as ATD) are installed at either end of Traction overhead line for providing a constant tension in traction overhead line conductors irrespective of temperature variation & Environmental working conditions as mentioned in clause no.2.</p> <p>1.5 The regulating equipment to be installed at either end of traction overhead lines for providing constant tension in traction overhead lines conductors at different ambient temperatures by using balancing weights. It comprises of Pulley blocks consisting of two/three pulleys towards anchoring mast/portal and one/two movable pulley on the OHE side. The assembly shall have anti-falling device so that in case of breakage of stainless steel wire rope and/or clevis & eye, the overhead conductors are not allowed to fall.</p> <p>1.6 For semi high speed (160-200kmph) lines, Overhead Equipment tension shall be 2400 kgf i.e. 1200kgf in Catenary wire and 1200kgf in Contact wire. For higher tension in Overhead Equipment, three- pulley Automatic Tensioning Device assembly with 2400 kg tension in overhead line is required.</p> <p>1.7 The existing five Pulley ATD which has been developed for 2400 kgf shall be used for 3000 kgf with special arrangement of counter weight in which 600 kg weight shall be provided in double stack of 300 kg in parallel as a balancing weight of five Pulley ATD.</p>	<p>Accepted, Due to suggestion is only for simplify the language of uploaded draft</p> <p>Accepted, Due to suggestion is only for simplify the language of uploaded draft</p> <p>Accepted, Due to suggestion is only for simplify the language of uploaded draft</p> <p>Accepted, Due to suggestion is only for simplify the language of uploaded draft</p>

side. The assembly shall have anti-falling device so that in case of breakage of stainless steel wire rope and/or clevis & eye, the overhead conductors are prevented from falling.

For semi high speed (160-200kmph) lines, Overhead Equipment tension shall be 2400 kgf i.e. 1200kgf in Catenary wire and 1200kgf in Contact wire. For higher tension in Overhead Equipment, three- pulley Automatic Tensioning Device assembly with 2400 kg tension in overhead line is required.

1.5 Five Pulley Auto Tensioning Device: It shall be used for 3000 kgf tension, 1500 kgf in contact wire and 1500 kgf in catenary wire, the existing five Pulley ATD which has been developed for 2400 kgf shall be used for 3000 kgf with special arrangement of counter weight in which 600 kg weight shall be provided in double stack of 300 kg in parallel as a balancing weight of five Pulley ATD.

1.6 The Indian Railways employ simple polygonal Cadmium Copper Catenary and Copper Contact wire in OHE for supplying power to Electric locomotives. For ensuring reliable current collection by Pantographs of

	<p>Electric locomotives, Auto Tensioning Devices (henceforth referred as ATD) are installed at either end of Traction overhead line for providing a constant tension in traction overhead line conductors irrespective of temperature variation. 1.7 The "Make in India" policy of government of India shall be applicable</p>																														
		<p>1.8 Types of pulley & its tension requirement</p> <table border="1" data-bbox="751 553 1793 1011"> <thead> <tr> <th>Type of regulating Equipment Description</th> <th>3 Pulley (Normal)</th> <th>3 Pulley (High Tension)</th> <th>5 Pulley (High Tension)</th> </tr> </thead> <tbody> <tr> <td>Device Tension (load)</td> <td>2000 kgf.</td> <td>2400 kgf.</td> <td>3000 kgf.</td> </tr> <tr> <td>Tension in Contact wire</td> <td>1000 kgf.</td> <td>1200 kgf.</td> <td>1500 kgf.</td> </tr> <tr> <td>Tension in Catenary wire</td> <td>1000 kgf.</td> <td>1200 kgf.</td> <td>1500 kgf.</td> </tr> <tr> <td>Counterweight</td> <td>665 kgf.</td> <td>800 kgf.</td> <td>900 kgf</td> </tr> <tr> <td>Proof load Counter weights</td> <td>1330 kgf.</td> <td>1600 kgf.</td> <td>1800 kgf</td> </tr> <tr> <td>Line Speed</td> <td colspan="3">160-200 kmph</td> </tr> </tbody> </table>	Type of regulating Equipment Description	3 Pulley (Normal)	3 Pulley (High Tension)	5 Pulley (High Tension)	Device Tension (load)	2000 kgf.	2400 kgf.	3000 kgf.	Tension in Contact wire	1000 kgf.	1200 kgf.	1500 kgf.	Tension in Catenary wire	1000 kgf.	1200 kgf.	1500 kgf.	Counterweight	665 kgf.	800 kgf.	900 kgf	Proof load Counter weights	1330 kgf.	1600 kgf.	1800 kgf	Line Speed	160-200 kmph			<p>Accepted with minor correction i.e counter weight for five pulley change from 900 kgf to 600 kgf, accordingly proof load also changed, and due to suggestion is only for simplify the language of uploaded draft</p>
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1.8	<p>ii IS 3091:1999(R2015) ALUMINIUM BRQNZE INGOTS AND CASTINGS FOR OVERHEAD FITTINGS IN 'ELECTRIC TRACTION – SPECIFICATION</p> <p>iii TI/SPC/OHE/FASTNERS /0120 (Rev.1) or latest Specification for Steel Fastners and Stainless Steel Fasteners.</p>	<table border="1" data-bbox="827 1224 1749 1453"> <tbody> <tr> <td>1.8 (ii)</td> <td>IS 3091:1999(R2015)</td> <td>Aluminium Bronze Bronze Ingots And Castings For Overhead Fittings In 'Electric Traction - Specification</td> </tr> <tr> <td>1.8 (iii)</td> <td>TI/SPC/OHE/FASTNERS /0120 (Rev.1) or latest</td> <td>Specification For Steel Fastners Fasteners And Stainless Steel</td> </tr> <tr> <td>1.8 (xi)</td> <td>IS: 1929 – 1882</td> <td>Specification For Hot Forged Steel Rivets for hot closing (Snap Head Pins)</td> </tr> </tbody> </table>	1.8 (ii)	IS 3091:1999(R2015)	Aluminium Bronze Bronze Ingots And Castings For Overhead Fittings In 'Electric Traction - Specification	1.8 (iii)	TI/SPC/OHE/FASTNERS /0120 (Rev.1) or latest	Specification For Steel Fastners Fasteners And Stainless Steel	1.8 (xi)	IS: 1929 – 1882	Specification For Hot Forged Steel Rivets for hot closing (Snap Head Pins)	<p>Accepted due to suggestion has been given to correct the spelling</p>																			
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3.0	Manufacture of Auto Tensioning Device The Auto Tensioning Device shall be manufactured in accordance with the RDSO Drawings mentioned herewith. The manufacturer shall submit their own drawings, indicating the tolerances and material Specifications of all parts, for approval of RDSO before undertaking manufacture of proto-types.	3.0 Manufacture of Auto Tensioning Device The Auto Tensioning Device shall be manufactured in accordance with the RDSO Drawings mentioned herewith given below . The manufacturer shall submit their own drawings, indicating the tolerances and material Specifications of all parts, for approval of RDSO before undertaking manufacture of proto-types. Deviation from RDSO drawing if any shall also be submitted.	Following proposal has not been accepted “Deviation from RDSO drawing if any shall also be submitted”																								
	Clause 3.1, 3.2 & 3.3 of uploaded draft specification.	<p>Drawings of 3 Pulley, 3 Pulley High Tension & Five Pulley regulations Equipment's</p> <table border="1" data-bbox="840 654 1829 1279"> <thead> <tr> <th>SN.</th> <th>Drawing No.</th> <th>Description</th> <th>Type of Regulating Equipment</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>TI/DRG/OHE/ATD/RDSO/00001/99/3</td> <td>Regulating equipment (three pulley type) 3:1 ratio</td> <td rowspan="3">Three Pulley Type Regulating Equipment With Modified Pulley Grooved</td> </tr> <tr> <td>2.</td> <td>TI/DRG/OHE/ATD/RDSO/00002/99/4</td> <td>Part details of regulating equipment (three pulley type) 3:1 ratio</td> </tr> <tr> <td>3.</td> <td>SKF 63052RS1, NBC 6305 LLU or FAG 6305 2RSR</td> <td>Bearings</td> </tr> <tr> <td>4.</td> <td>TI/DRG/OHE/ATD2400/RDSO/00001/16/1Rev.1</td> <td>Regulating equipment (three pulley type) 3:1 ratio</td> <td rowspan="3">Three pulley type regulating equipment with 2400 kgf tension.</td> </tr> <tr> <td>5.</td> <td>TI/DRG/OHE/ATD2400/RDSO/00002/16/2 Rev.2</td> <td>Part details of regulating equipment (three pulley type) 3:1 ratio</td> </tr> <tr> <td>6.</td> <td>SKF 6307 2RS1, NBC 6705 LLU or FAG 6307 2RSR</td> <td>Bearings</td> </tr> </tbody> </table>	SN.	Drawing No.	Description	Type of Regulating Equipment	1.	TI/DRG/OHE/ATD/RDSO/00001/99/3	Regulating equipment (three pulley type) 3:1 ratio	Three Pulley Type Regulating Equipment With Modified Pulley Grooved	2.	TI/DRG/OHE/ATD/RDSO/00002/99/4	Part details of regulating equipment (three pulley type) 3:1 ratio	3.	SKF 63052RS1, NBC 6305 LLU or FAG 6305 2RSR	Bearings	4.	TI/DRG/OHE/ATD2400/RDSO/00001/16/1Rev.1	Regulating equipment (three pulley type) 3:1 ratio	Three pulley type regulating equipment with 2400 kgf tension.	5.	TI/DRG/OHE/ATD2400/RDSO/00002/16/2 Rev.2	Part details of regulating equipment (three pulley type) 3:1 ratio	6.	SKF 6307 2RS1, NBC 6705 LLU or FAG 6307 2RSR	Bearings	Accepted, Due to suggestion is only for simplify the language of uploaded draft
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			2.	TI/DRG/OHE/ATD/R DSO/000013/15/0 ,Rev.-1	Part details of regulating equipment (five pulley type) 5:1 ratio		draft
			3.	TI/DRG/OHE/ATD/R DSO/000014/15/0 , Rev.-2	Pulley Details of Regulating equipment (Five pulley type) 5:1 ratio		
			4.	TI/DRG/OHE/C.WTASY/00001/20/0	Counter weight arrangement drawings.		
			5.	SKF 6305 2RS1, NBC 6305 LLU or FAG 6305 2RSR	Bearings		
			6.	TI/DRG/OHE/ATD/R DSO/00008/05/0	Drawing of M-18 X 75/32 bolt with castle nut	Three Pulley Type Regulating Equipment	
			7.	TI/DRG/OHE/ATD/R DSO/00005/02/1	Part drawing for clevis & eye forged (RI 5322-1)	With Modified Grooved, Three Pulley Type	
			8.	ETI/OHE/P/5341 REV 'A'	Part drawing for stainless steel rope end fitting (RI 5341)	Regulating Equipment With 2400 Kgf Tension & Five Pulley Auto Tensioning Devices	
3.5	Part Identification Number, Manufacturers Monogram and month/year of manufacture shall be engraved on each part of the Assembly.	3.5	Part Identification Number, Manufacturers Monogram and month/year of manufacture shall be engraved or embossed on each part of the Assembly.				
3.6	All parts of the Assembly shall be free from casting/manufacturing defect and other irregularities.	3.6	All parts of the Assembly shall be free from casting/manufacturing defect and other irregularities. (already mentioned in clause no 3.23)				Accepted, since this clause is repeated
3.7	The Aluminum, Aluminum-alloy and Aluminum-bronze castings, wherever specified, shall conform to RDSO Specification No. TI/SPC/OHE/FITTINGS /0130 (Rev.1) or latest.	3.7	The Aluminum, Aluminum-alloy and Aluminum-bronze castings & Galvanised steel fabrication wherever specified, shall conform to RDSO Specification No. TI/SPC/OHE/FITTINGS /0130 (Rev.1) or latest.				Accepted
3.8	The Stainless steel parts, wherever	3.8	The Stainless steel parts, wherever specified, shall be made of Stainless Steel				

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	specified, shall be made of Stainless Steel grade 316 S 16 of BS: 970(Part 4) - 1970 EN 10090:1998 or grade AISI 316 .	grade 316 S 16 of BS: 970(Part 4) — 1970 EN 10090:1998 or grade AISI 316 . & IS: 1570 (PART-5)-1985	Accepted
3.9	All ferrous Fasteners wherever specified, shall be hot dip galvanized. The weight of zinc coating shall not be less than 400 gm/m ² .	3.9 All ferrous Fasteners wherever specified, shall be hot dip galvanized. The weight of zinc coating shall not be less than 400 gm/m² Min individual 300 gm/m ² or Min Avg. 375 gm/m ² . (as per TI/SPC/OHE/FASTNSERS/0120).	acceptable , as it is mentioned in Fasteners spec
3.10	All ferrous parts except Fasteners, used in the Auto Tensioning Device shall be hot dip galvanized, to RDSO Specification No ETI/OHE/13 (4/84) or latest. The weight of zinc coating shall not be less than 610 gm/m ² .	3.10 All ferrous parts except Fasteners & thickness having less than 5 mm thickness , used in the Auto Tensioning Device shall be hot dip galvanized, to RDSO Specification No ETI/OHE/13 (4/84) or latest. The weight of zinc coating shall not be less than 610 gm/m ² . 3.10 (a) Thickness having less than 5 mm thickness & IS 4759: Hot-dip zinc coatings on structural steel and other allied products.	Not acceptable, Whole part should be coated with zinc
3.12	Split Pins shall be of copper and shall conform to IS: 549-2005 (R 2016).	3.12 (a) Snap Head pins shall be of galvanised steel conforms to IS: 1929 & IS 2062	Not acceptable
3.13	The Bearings used shall be SKF 6305 2RS1, NBC 6305 LLU or FAG 6305 2RSR. Bearings shall be procured form the RDSO approved manufacturers directly.	3.13 The Bearings used shall be SKF 6305 2RS1, NBC 6305 LLU or FAG 6305 2RSR. Bearings shall be procured form the RDSO approved manufacturers directly. The Bearings shall be make of SKF, NBC or FAG & shall be procured form the RDSO approved manufacturers directly.	Accepted.
3.15	Any deviation from this Specification, inculcated to improve the performance, utility and efficiency of the Equipment shall be given due consideration provided full particulars with justification thereof are furnished.	3.15 Any deviation from this Specification, inculcated to improve the performance, utility and efficiency of the Equipment shall be given due consideration provided full particulars with justification thereof are furnished. (already mentioned in clause no 3.22)	Accepted
3.16	Forged fittings shall conform to Specification No IS 2004-1991 (R 2001). Forged fittings shall be procured from RDSO approved	3.16 Forged fittings shall conform to Specification No. TI/SPC/OHE/FITTINGS/0130 & IS 2004-1991 (R 2001). Forged fittings shall be procured from RDSO approved manufacturer directly. If the fittings are already approved by manufacturer then approval letter submit during type test and Factory acceptance test.	Accepted

	manufacturer directly.																				
3.17	SGCI fittings wherever specified shall conform to Specification No. TI/SPC/OHE/FITTINGS/0130 (Rev.1) or latest. SGCI fittings shall be procured from RDSO approved manufacturer directly.	3.17 SGCI fittings wherever specified shall conform to Specification No. TI/SPC/OHE/FITTINGS/0130 (Rev.1) or latest. SGCI fittings shall be procured from RDSO approved manufacturer directly. (No such fittings are used in ATD)	Not accepted because in this clause it is mentioned that "wherever SGCI fitting used.																		
3.20	Bearing shall be procured from RDSO approved manufacturers directly	3.20 Bearing shall be procured from RDSO approved manufacturers directly. (already mentioned in clause no 3.13)	Accepted																		
3.21	Interchangeability: All components of regulating Equipment's shall be freely interchangeable between one assembly and other of same type.	3.21 Interchangeability : All components of regulating Equipments Equipment's shall be freely inter- changeable between one assembly and other of same type.	Accepted																		
		3.24 Tolerance: Wherever not specified in the drawings, furnished by the Purchaser, the following tolerances shall apply for non-mating surfaces:	Accepted																		
		<table border="1"> <thead> <tr> <th>Sr. No</th> <th>Dimension</th> <th>Tolerance</th> </tr> </thead> <tbody> <tr> <td></td> <td>Upto and including 35mm</td> <td>±0.5</td> </tr> <tr> <td></td> <td>Over 35mm</td> <td>± 1.5 %</td> </tr> <tr> <td></td> <td>In case of mating surfaces</td> <td>+0.5/-0.0</td> </tr> <tr> <td></td> <td>On the holes & Shafts</td> <td>+0.0 /-0. 5</td> </tr> <tr> <td></td> <td>Wall Thickness</td> <td>+1.0/-0.5</td> </tr> </tbody> </table>	Sr. No	Dimension	Tolerance		Upto and including 35mm	±0.5		Over 35mm	± 1.5 %		In case of mating surfaces	+0.5/-0.0		On the holes & Shafts	+0.0 /-0. 5		Wall Thickness	+1.0/-0.5	
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5.5.1	Criteria for Acceptance: 5.5.1 Lot shall be formed from the same production batch of not more than 100 units. The Five units from each batch shall be selected at random from the offered lot for tests. Samples from three selected units shall be subjected to the tests given at SN 5.1. Remaining two units shall be subjected to tests given at SN 5.2.2 & 5.2.3.	5.5 Criteria for Acceptance: 5.5.1 Lot shall be formed from the same production batch of not more than 100 units. The Five units from each batch shall be selected at random from the offered lot for tests. Samples from three selected units shall be subjected to the tests given at SN 5.1. Remaining two units shall be subjected to tests given at SN 5.2.2 & 5.2.3. (For acceptance test, test SN 5.2.1, 5.2.2 & 5.2.3 are not applicable)	Accepted ,This clause is for acceptance test only																		
6.3	Chemical composition: The manufacturer shall submit the Test Bars of Aluminium Alloy and	6.3 Chemical composition: The manufacturer shall submit the Test Bars of Aluminium Alloy and Aluminium Bronze from the same melt which represents the lot for chemical analysis. The Test Bars shall be chemically analysed after the	Accepted because chemical tests																		

<p>Aluminium Bronze from the same melt which represents the lot for chemical analysis. The Test Bars shall be chemically analysed after the mechanical tests. The RDSO/Purchaser shall be at liberty to analyse any other Fittings/ Components in addition to Test Bars. The Test Bars of Aluminium Bronze and Stainless Steel Wire Rope End Fitting (RI-5341) shall meet the requirement of IS: 3091-1999 (R 2015). (i) Three pulley type regulating equipment with modified pulley grooved: The test bars of aluminium alloy, pulley (RI 5512), grease seal(RI 5315), wedge(RI 5321) shall meet the requirement of grade 4600M of IS:617- 1994. The material of axles (RI 5322, RI 5508) shall conform to grade 316S16 of BS: 970(part-4)-1970 or grade AISI 316 EN 10090:1998. Mild steel components pulley bearing bush(RI 5333), bush bearing for grease seal (RI 5315), Pulley arms (RI 5510, RI 5511), angle spacers (RI 5505-1, RI 5352-1), locking plates(RI 5336, RI 5323) , pulley arm spacers(RI 5503), tie rod(RI 5509) , snap head pin and EDTI washers shall meet the requirement of IS 2062:2011(R 2016) Gr'A'. Forged clevis and eye (RI 5322-1) shall meet the requirement of</p> <p>Page 9 of 9 Effective from SPECIFICATION No TI/SPC/OHE/ATD/0060 (Rev.2) Prepared by Checked by Issued by Signature Designation JE/TI DTI-2</p>	<p>mechanical tests. The RDSO/Purchaser shall be at liberty to analyse any other Fittings/ Components in addition to Test Bars. The Test Bars of Aluminium Bronze and Stainless Steel Wire Rope End Fitting (RI-5341) shall meet the requirement of IS: 3091-1999 (R 2015).</p> <ul style="list-style-type: none"> • The test bars of aluminium alloy, pulley, grease seal & wedge shall meet the requirement of grade 4600M of IS:617-1994. • The material of axles shall conform to grade 316S16 of EN 10090:1998. • Mild steel components pulley bearing bush, bush bearing for grease seal, Pulley arms, angle spacers, locking plates, Pulley arm spacers, tie rod, snap head pin and washers shall meet the requirement of IS 2062:2011(R 2016) Gr'A'. • Forged clevis and eye (RI 5322-1) shall meet the requirement of class II of IS 2004 -1991 (R 2001). • Split pin shall be of copper as per IS: 191-2007 (R 2016). 	<p>of all requirements have covered.</p>
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class II of IS2004 -1991 (R 2001). Split pin shall be of copper as per IS:191-2007 (R 2016). (ii) THREE PULLEY TYPE REGULATING EQUIPMENT WITH 2400 KGF TENSION. The test bars of aluminium alloy, pulley(RI 5512-1), grease seal(RI 5315-1), wedge(RI 5321) shall meet the requirement of grade 4600M of IS:617-1994. The material of axles (RI 5332-1, RI 5508-1) shall conform to grade 316S16 of BS: 970(part-4)-1970 or grade AISI 316 EN 10090:1998. Mild steel components pulley bearing bush(RI 5333-1), bush bearing for grease seal (RI 5315-1), Pulley arms (RI 5510-1, RI 5511-1), angle spacers (RI 5505-1, RI 5352-1), locking plates(RI 5336, RI 5323) , pulley arm spacers(RI 5503), tie rod(RI 5509-1) , snap head pin and washers shall meet the requirement of IS 2062:2011 (R 2016) Gr'A'. Forged clevis and eye (RI 5322-1) shall meet the requirement of class II of IS2004 -1991 (R 2001). Split pin shall be of copper as per IS:191-2007 (R 2016). (iii) FOR FIVE PULLEY: The test bars of aluminium alloy, Pulley (RI 5401, 5402, 5403), grease seal (RI 5315), wedge (RI 5321) shall meet the requirement of grade 4600M of IS: 617-1994 (R 2016). The material of axles (RI 5332, RI 5411, and RI 5412) shall conform to grade 316S16 of BS 970: pt 4-1970 or grade AISI 316 EN 10090:1998. Mild steel components pulley bearing bush(RI 5333), bush

	bearing for grease seal (RI 5315), Pulley arms (RI 5421, RI 5422, RI 5423), angle spacers (RI 5431), locking plates(RI 5336) , pulley arm spacers(RI 5424), tie rod(RI 5432) and washers shall meet the requirement of IS 2062:2011 (R 2016) Gr'A'. Forged clevis and eye (RI 5322-1) shall meet the requirement of class II of IS2004 -1991 (2001). Split pin shall be of copper as per IS: 191-2007 (R 2016) .												
6.4.1		<table border="1"> <thead> <tr> <th>Abbreviation</th> <th>Values</th> </tr> </thead> <tbody> <tr> <td>Diameter (d)</td> <td>10 mm</td> </tr> <tr> <td>Gauge Length (L₀)</td> <td>50 mm</td> </tr> <tr> <td>Minimum Radius at shoulder (r)</td> <td>10 mm</td> </tr> <tr> <td>Minimum Parallel length (L_c)</td> <td>55 mm</td> </tr> </tbody> </table>	Abbreviation	Values	Diameter (d)	10 mm	Gauge Length (L ₀)	50 mm	Minimum Radius at shoulder (r)	10 mm	Minimum Parallel length (L _c)	55 mm	Accepted
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Minimum Radius at shoulder (r)	10 mm												
Minimum Parallel length (L _c)	55 mm												
6.10	Test for Mechanical Advantage: Before and after Endurance test mechanical advantage of the Auto Tensioning Device shall be checked at least 10 positions of counterweight ranging from maximum temperature position to minimum temperature position. For this purpose an accurate digital Dynamometer shall be installed and tension at different positions of the Counterweight shall be recorded. Mechanical advantage shall then be calculated as given below: MA = Dynamometer reading/counter weight The mechanical advantage shall not vary $\pm 1\%$ from the nominal value of 5.	<p>6.10 Test for Mechanical Advantage: Before and after Endurance test mechanical advantage of the Auto Tensioning Device shall be checked at least 10 positions of counterweight ranging from maximum temperature position to minimum temperature position. For this purpose an accurate digital Dynamometer shall be installed and tension at different positions of the Counterweight shall be recorded. Mechanical advantage shall then be calculated as given below:</p> <p>MA = Dynamometer reading/counter weight(for counter weight refer clause no. 1.7)</p> <p>The mechanical advantage shall not vary $\pm 1\%$ from the nominal value of 5.</p> <p>(Nominal Value 3 for 3 pulley & nominal value 5 for 5 pulley)</p>	Accepted										
7.0	Packing and Marking: The Auto Tensioning Devices complying with this Specification shall be packed individually. The Auto Tensioning Device's shall be properly packed,	7.0 Packing and Marking: The Auto Tensioning Devices complying with this Specification shall be packed individually. The Auto Tensioning Device's shall be properly packed, duly assembled, in strong wooden boxes or any other hard packing so as to avoid damage	Due to quality issue of it can not be accepted.										

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	duly assembled, in strong wooden boxes so as to avoid damage during transit. The Box shall carry on its outer face the following information:	during transit. The Box/packing shall carry on its outer face the following information:	
Clause No. of Spec.	Mentioned in uploaded Specification	Comments/Suggestion submitted by M/s EE Kolkata	
1.8 (i)	IS : 617 1994 (R 2014)	Kindly delete word -(R 2014) from the specification. We are unable to trace any where this word in the latest specification. It will be created confusion to the Inspector of Inspecting authority (RITES) at the time of inspection.	Not accepted because Specification and IS revised regularly
1.8 (ii)	IS 3091:1999 (R 2015)	Kindly delete word -(R 2015) from the specification. Reason same as mentioned above.	
1.8 (iii)	TI/SPC/OHE/FASTENERS/0120 (Rev.1) or latest.	Please delete word -"or latest" from the specification because of the current practice of M/s Rites Ltd., Kolkata they will not accept any specification or any PO where mentioned latest word in the end of specification No. They told how we know that this is the latest specification. So you can put latest correction slip number in place of "or latest".	
1.8 (iv)	TI/SPC/OHE/FITTINGS/0130(10/13) or latest.	Please delete word -"or latest" from the specification. Reason same as above.	
1.8 (v)	ETI/OHE/13(4/84) or latest.	do -	
1.8 (vi)	BS EN 10090:1998	We are unable to trace or found this specification anywhere therefore please delete this specification number or add also Specification No. BS:970(Part-4)-1970/AISI 316 or Kindly send this specification to us.	Accepted
1.8 (vii)	IS : 1570 (Part-5)-1985 (Re-affirmed-2014)	Kindly delete word -(Re-affirmed-2014) in the spec. We are unable to trace anywhere this word in the latest specification. It will be created confusion to the Inspector of Inspecting authority (RITES) at the time of inspection.	Not accepted because Specification and IS revised regularly
1.8 (viii)	IS 549-2005 (R2016)	Kindly delete word (R2016) - Reason same as mentioned above	
1.8 (ix)	IS:2062-2011 (R 2016)	Kindly delete word (R 2016) - Reason same as mentioned above	
1.8 (x)	IS 2004-1991 (Re affirmed 2001)	Kindly delete word -(Re affirmed 2001) from the specification. Reason same as mentioned above.	
3.2 (SN.6)	SKF6307 2RS1, NBC6705 LLU or FAG 6307 2RSR	Please correct NBC bearing No. as NBC 6307 LLU.	Accepted, will be corrected in draft specification
3.3 (SN-7) and 3.4	TI/DRG/OHE/C.WTASY/00001/20/0 Counter weight arrangement drawings. AND ATD shall be used with wire rope manufactured	Please withdraw/delete both clause 3.3(SN.7) and 3.4 From the specification as because both are separate item and its separate drawing, materials, and specification. We manufactured only ATD and as per our last experience it will be raised confusion at the time of Rites Inspection. Rites may asked for	Since the counter weight is

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	as per RDSO spec. No. TI/SPC/OHE/WR/1060 (Rev.1) or Latest	<p>supply of Counter weight arrangement and SS wire rope</p> <p>both items with supply of ATD as because these are Mentioned in the specification. Please refer or take it as a guide the original spec. No. TI/SPC/OHE/ATD/0060 Rev.1 of ATD. Please make it easier not complicated for future. It may be arising a lot of problems in future at the time of third party inspection.</p> <p>Also please delete all latest word from your specification mentioned wherever at the end of all reference specification or IS number. As per our last experience Rites may be arise objection on that. You can mention their current A&C Slip No. in place "or latest". Kindly arrange to make it simple or no objectionable from any 3rd party inspecting authority. Please refer the original specification No. TI/SPC/ OHE/ATD/0060 Rev.1 of ATD as a guide.</p>	required in proof load , so it should be available in the spec
3.8	The SS parts, wherever specified shall be made of SS grade 316 S 16 of EN 10090:1998.	Please add also BS: 970 (Part-4) 1970 Grade 316S or AISI 316 with EN 10090:1998 because of we are unable to trace or found anywhere EN 10090:1998. OR please arrange to send us EN 10090:1998 if available with you /or delete this EN10090:1998 from The specification.	Accepted
3.20	Bearing shall be procured from RDSO approved manufacturers directly.	Please add also: Bearing shall be procured from RDSO approved manufacturers directly or authorised dealer of SKF. As because SKF are not sale their bearing directly such a small quantity in Kolkata. Always they advise to purchase SKF bearing from their authorised dealer whenever we asked to give quotation for SKF bearing.	Not accepted because it is policy to procure from direct manufacturer
5.5.1	Lot shall be formed from the same production..... Remaining two units shall be subjected to tests given at SN. 5.2.2 & 5.2.3.	Please add also 5.2.1 as given below : Remaining two units shall be subjected to tests given at SN. 5.2.1, 5.2.2 & 5.2.3.	Accepted
6.3 (i)	The material of axles (RI 5322, RI 5508) shall conform to grade 316S16 of EN10090:1998 etc.	Please correct of Axle RI No.5322 as 5332 and IS as The material of axles (RI5332, RI5508) shall conform to grade 316S16 of EN 10090:1998 or BS:970 (Part 4) 1970 Grade 316S16 or AISI 316 ... OR delete EN 10090:1998 or add also BS970 in the all clauses wherever it has been mentioned in the specification. Kindly delete all words written such as (R 1994, R 2015, R2014, R2016, R 2001 etc) in the end of all IS number. As because we are unable to trace/found this type of IS where mentioned these words in the IS. And these all are creating confusion and as per our last experience M/s. Rites can give objection or not accept as because they are unable to found these type of IS easily	Accepted however 'latest' word cant be deleted because time to time reference IS and

		<p>If you know any IS has revised in the particular year then please put IS number with latest revised year only and old revised year should be deleted.</p> <p>Please make this specification easier that all IS can find anywhere easily to every body.</p> <p>Otherwise it will be creating a lot of confusion at the time of inspection by third party.</p> <p>AND materials will be held or can not be despatch to consignee within stipulated delivery period and work progress will be delayed.</p> <p>OR</p> <p>Please send us all the IS where mentioned these words on the IS for our record and reference.</p>	specification may be change.
7.0	Packing and Marking	<p>Please allow/add also packing of ATD as given below ATD also packed in Gunny Bags of adequate density subject to following Packing shall be fit to withstand rough handling, during transit and storage at destination.</p> <p>Heads and Threaded portions of ATD or its parts shall be properly protected against any damages. Any damages or pilferages of ATD on account of transportation or loosening of the packaging will be Replaced by the supplier at free of cost.</p> <p>Because of nowadays wooden boxes are not easily available in the market and/or its cost become very High.</p>	Due to Quality issue it is not accepted.
8.0	Technical literature & Other details	<p>We like to invite your kind attention to the following :</p> <p>We manufacture ATD as per your drawings.</p> <p>We manufacture ATD as per your specification.</p> <p>Where design and technical specification of yours then technical literature and maintenance manual are Need to come from you not from us. Therefore please issue your technical literature with maintenance manual Of ATD for our record and reference for future.</p>	Not accepted because being a manufacturer and having experience it is to be given by firms

Dharmraj/JE/TI