Automatic Tensioning Device 1/3
Wheels Version

Application
Wheels Tensioning Devices are used to apply a constant mechanical load in catenaries (contact wire and messenger wire, together or independently) according to the variation of temperature and the length defined.

Description
- With a specific stainless steel non rotating wire Ø8,75
- Individual grease hole on each pulley

Compliance
- EN 50119

Options
- Stop fall device to avoid to the counterweights falling down (if the contact/messenger wire breaks); avoid the contact/messenger wire to fall down (in case of breaking of the Automatic Tensioning Device wire[vandalism])
- Graduated scale (visual control of the wire expansion from the ground)
- Counterweights: cast iron or concrete (different form and size for external use, integrated in a pole or for special tunnel use). See the counterweight Data-Sheet for more information
- Ball bearings greased for life - no more greasing operation during the maintenance cycle
Automatic Tensioning Device 1/3
Wheels Version

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Working Load (kN)</th>
<th>(min X dimension in mm)</th>
<th>(mm)</th>
<th>Stop Fall Device and Rule option</th>
</tr>
</thead>
<tbody>
<tr>
<td>JG1424</td>
<td>42</td>
<td>550</td>
<td>145 / 383</td>
<td>-</td>
</tr>
<tr>
<td>JG1887</td>
<td>21</td>
<td>450</td>
<td>128 / 221</td>
<td>X</td>
</tr>
<tr>
<td>JG1892</td>
<td>26</td>
<td>450</td>
<td>126 / 221</td>
<td>X</td>
</tr>
<tr>
<td>JG2072</td>
<td>15</td>
<td>400</td>
<td>157</td>
<td>X</td>
</tr>
<tr>
<td>JG2176</td>
<td>21</td>
<td>400</td>
<td>158</td>
<td>X</td>
</tr>
<tr>
<td>JG2772</td>
<td>21</td>
<td>450</td>
<td>126 / 221</td>
<td>X</td>
</tr>
</tbody>
</table>

Main Sales References:
- England, Turkey, Morocco, Norway, India, Germany, Malaysia

Tests Type:
- Mechanical Test
- Efficiency Test

_Those tests are available on demand._
_We are ready to proceed to other Approval Tests in order to follow your local specifications._
Automatic Tensioning Device 1/4
Wheels Version

Application
Wheels Tensioning Devices are used to apply a constant mechanical load in catenaries (contact wire and messenger wire, together or independently) according to the variation of temperature and the length defined.

Description
- With a specific stainless steel non rotating wire Ø8,75
- Individual grease hole on each pulley

Compliance
- EN 50119

Options
- Stop fall device to avoid to the counterweights falling down (if the contact/messenger wire breaks); avoid the contact/messenger wire to fall down (in case of breaking of the Automatic Tensioning Device wire[vandalism])
- Graduated scale (visual control of the wire expansion from the ground)
- Counterweights: cast iron or concrete (different form and size for external use, integrated in a pole or for special tunnel use). See the counterweight Data-Sheet for more information
- Ball bearings greased for life - no more greasing operation during the maintenance cycle
Automatic Tensioning Device 1/4 Wheels Version

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Working Load (kN)</th>
<th>(mini X dimension in mm)</th>
<th>(mm)</th>
<th>Stop Fall Device and Rule option</th>
</tr>
</thead>
<tbody>
<tr>
<td>207617-4</td>
<td>20</td>
<td>450</td>
<td>182 / 277</td>
<td>X</td>
</tr>
<tr>
<td>JG1971</td>
<td>28</td>
<td>450</td>
<td>182 / 277</td>
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</tr>
<tr>
<td>JG3192</td>
<td>28</td>
<td>450</td>
<td>182 / 277</td>
<td>X</td>
</tr>
</tbody>
</table>

Main Sales References:

- France, England, Turkey, Morocco, Norway, India, Germany, Malaysia

Tests Type:

- Mechanical Test
- Efficiency Test

Those tests are available on demand.

We are ready to proceed to other Approval Tests in order to follow your local specifications.
Automatic Tensioning Device 1/5
Wheels Version

Application
Wheels Tensioning Devices are used to apply a constant mechanical load in catenaries (contact wire and messenger wire, together or independently) according to the variation of temperature and the length defined.

Description
- With a specific stainless steel non rotating wire Ø8,75
- Individual grease hole on each pulley

Compliance
- EN 50119

Options
- Stop fall device to avoid to the counterweights falling down (if the contact/messenger wire breaks); avoid the contact/messenger wire to fall down (in case of breaking of the Automatic Tensioning Device wire[vandalism])
- Graduated scale (visual control of the wire expansion from the ground)
- Counterweights: cast iron or concrete (different form and size for external use, integrated in a pole or for special tunnel use). See the counterweight Data-Sheet for more information
- Ball bearings greased for life - no more greasing operation during the maintenance cycle
Automatic Tensioning Device 1/5
Wheels Version

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Working Load (kN)</th>
<th>(mini X dimension in mm)</th>
<th>Stop Fall Device and Rule option</th>
</tr>
</thead>
<tbody>
<tr>
<td>207617</td>
<td>25</td>
<td>400</td>
<td>121 / 216 X</td>
</tr>
<tr>
<td>JG2069</td>
<td>35</td>
<td>400</td>
<td>218 / 313 X</td>
</tr>
<tr>
<td>JG2372</td>
<td>35</td>
<td>400</td>
<td>218 / 313 X</td>
</tr>
</tbody>
</table>

Main Sales References:
☞ France, Morocco, India, Germany, UK, Spain, Brazil

Tests Type:
☞ Mechanical Test
☞ Efficiency Test

*Those tests are available on demand.*

*We are ready to proceed to other Approval Tests in order to follow your local specifications.*
Automatic Tensioning Device
Spring Version

Application
Spring Tensioning Devices are used to apply a mechanical load in catenaries for the crossovers.
General length compensation: up to 120m for delta of temperature of 70°C (we can double the length).

Description
- Spring version protected in an stainless steel tube
- Adjustment abacus provided with each ATD (Automatic Tensioning Device)
- Mostly used on tramways networks (crossovers and depots)

Compliance
- EN 50119

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Breaking Load (kN)</th>
<th>Tensioning Load (daN)</th>
<th>Max Stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JG1447/103</td>
<td>45</td>
<td>1 000 – 1 500</td>
<td>142</td>
</tr>
</tbody>
</table>

Main Sales References:
- France, UK, Italy, Spain, Algeria, Norway, Morocco

Tests Type:
- Mechanical Test

*Those tests are available on demand.*
*We are ready to proceed to other Approval Tests in order to follow your local specifications.*
Automatic Tensioning Device
Gas Version

Application
Gas Tensioning Devices (AERO), without counterweight, are used to apply a constant mechanical load in catenaries (contact wire et messenger wire, together or independently) according to the variation of temperature in range defined in the specifications.

By analogy with a wheels tensioning device, we can make the following parallel:

- As the tension depends on the counterweight with a wheels TD, it depends exclusively on the gas pressure in the AERO.
- X dimension between wheels in the wheels TD is replaced by the X dimension of the piston stroke of the AERO.

Description
- Gaz used: nitrogen (N2); Inert, it composed 70% of the ambient air
- Protective equipment over the piston
- Solutions equipped with 2 sensors (gas pressure, stroke length)
- Options: Graduated scale for checking from the ground; safety span

Compliance
- PED (97/23/EC)

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Breaking Load (kN)</th>
<th>Max Tensioning Load (daN)</th>
<th>L x bigger Ø (from the pole) (mm)</th>
<th>Compensated tension lengths (Δt = 70°C) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AERO480</td>
<td>191</td>
<td>4000</td>
<td>1630 x Ø130</td>
<td>200 - 400</td>
</tr>
<tr>
<td>AERO1000</td>
<td>191</td>
<td>4000</td>
<td>2625 x Ø130</td>
<td>400 - 800</td>
</tr>
</tbody>
</table>

*If length of wire <200m or >800m
Please contact us

Already Installed:
- France: RATP Paris (T2), Tramway Dijon, Nice, Grenoble, Besançon, Montpellier
- Light Metro Cuiaba Brazil
- Testing line Korea

Tests Type:
- Mechanical Test

*Those tests are available on demand.
We are ready to proceed to other Approval Tests in order to follow your local specifications*
Counterweights
For Automatic Tensioning

Application
The total weight of the counterweights associated with the Automatic Tensioning Device ratio will define the mechanical tension applied to the wire.

Description
- Piece of 20, 40 kg... in cast iron or concrete
- Three different versions:
  - Railway use: outdoor
  - Tunnel use: reduced space use (ex: to integrating it them in walls)
  - Tramway use: inside the poles in cities