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NITTIA CORPORATION

Belts for Textile Industries

Invention & innovation

The specification is subject to change for improvement without notice.
<table>
<thead>
<tr>
<th>Belt Type</th>
<th>Tensile Force (N/mm)</th>
<th>Standard Elongation (%)</th>
<th>Temperature Range (℃)</th>
<th>Maximum Length (m)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFL-7S</td>
<td>2.4</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>TFL-10S</td>
<td>2.6</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>TFL-12S</td>
<td>2.85</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>TFL-15S</td>
<td>3.1</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>TFL-18S</td>
<td>3.35</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>TFL-21S</td>
<td>3.7</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>L-500</td>
<td>1.55</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>L-750S</td>
<td>2.25</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>L-1000S</td>
<td>2.45</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>M-1000S</td>
<td>3.0</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>MA-1500S</td>
<td>3.5</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>M-1000G</td>
<td>3.0</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>MB-1000GSR</td>
<td>2.6</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Low Noise, Excellent Durability</td>
</tr>
<tr>
<td>RS-7S</td>
<td>2.6</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Specially Developed for Pneumatic Cleaner</td>
</tr>
<tr>
<td>IR-500</td>
<td>1.3</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>For Circular Machine, High Friction</td>
</tr>
<tr>
<td>KSG-250</td>
<td>0.85</td>
<td>1~3</td>
<td>-20~80</td>
<td>105</td>
<td>Spindle Tape</td>
</tr>
<tr>
<td>TFL-15E20</td>
<td>2.0</td>
<td>0.5~2</td>
<td>0~60</td>
<td>200</td>
<td>Less Power Consumption Easy to Make Endless, Low Noise, Shorter Take-up</td>
</tr>
<tr>
<td>TFL-15E26</td>
<td>2.6</td>
<td>0.5~2</td>
<td>0~60</td>
<td>200</td>
<td>Less Power Consumption Easy to Make Endless, Low Noise, Shorter Take-up</td>
</tr>
<tr>
<td>TFL-15E26C</td>
<td>2.6</td>
<td>0.5~2</td>
<td>0~60</td>
<td>200</td>
<td>Less Power Consumption Easy to Make Endless, Low Noise, Shorter Take-up</td>
</tr>
<tr>
<td>TLA-30E30-2</td>
<td>3.0</td>
<td>0.5~2</td>
<td>0~60</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>CFTG-40F</td>
<td>3.0</td>
<td>0.2~0.5</td>
<td>-10~60</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>CFTG-40F-3</td>
<td>3.9</td>
<td>0.2~0.5</td>
<td>-10~60</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>SE-A-PSS</td>
<td>1.6</td>
<td>0.5~1</td>
<td>-20~80</td>
<td>4.53***</td>
<td></td>
</tr>
<tr>
<td>SE-B-PB</td>
<td>1.6</td>
<td>0.5~1</td>
<td>-20~80</td>
<td>4.525***</td>
<td></td>
</tr>
<tr>
<td>SE-D-PB</td>
<td>1.7</td>
<td>0.5~1</td>
<td>-20~80</td>
<td>4.525***</td>
<td></td>
</tr>
</tbody>
</table>

*All belt types listed above have antistatic properties.
*1 Depending on the application, top and bottom covers can be reversed.
*2 PE: Polyester  PA: Polyamide  AR: Aramid
*3 Tensile Force is measured after running 200 hours in internal test.
*4 SEB length depends on the mold.
**PolyBelt™**

Super-strong polyamide core, extended-life skived joining, high operating duty cycles

- **High Strength, Long Life**
  High flexibility and rugged design for heavy-duty applications. Polyamide core accommodates shock loads, and wide choice of covers provide abrasion resistance, giving long, dependable service.

- **Electrically Conductive**
  Materials with anti-static properties are used in specific layers to provide permanent conductivity, eliminating build-up of electro-static charges. Selected materials are not susceptible to oil contamination.

- **Environmental Resistance**
  Selected materials are not susceptible to oil contamination.

**PolySprint™**

Finger-spliceable, easy installation, high-strength polyester core

- **Ease of Joining**
  A single action Nitta cutter eliminates the tedious task of multiple cuts that can lead to mismatched and non-aligned joints. Finger-splice joints are completed without adhesive.

- **Dimensional Stability**
  Polyester fabric used as tension member provides high dimensional stability. Selected materials are temperature and humidity tolerant.

- **Abrasion Resistance**
  Friction resistant covers and fabric are exclusively designed for textile machinery.

- **Less Power Consumption**
  PolySprint's flexibility enables machines to run more efficiently, reducing power consumption.

**SEB™ (Super Endless Belt)**

- **Seamless**
  Splice-free belts made by molded forming with excellent dimensional stability.

- **Excellent flexibility, bending resistance and abrasion resistance**
  Excellent flexibility, long flex life and abrasion resistance can be expected even with power transmission and carrying equipment using very small pulleys.

- **High rotation accuracy**
  High rotation accuracy is available as pitch line is stable.
Splicing Tools (PolySprint™•PolyBelt™)

Quick and Easy Endless (No Experience Required)

PolySprint tools make replacing broken belts quick and easy, with minimal disassembly of the machine.

Finger Joint (No Adhesive Needed)

Splicing Tools for PolySprint™

Splicing Tools for PolyBelt™

Nitta provides well-made, reliable tools for effective and efficient fabrication of our belts.

Poly Skiver

<table>
<thead>
<tr>
<th>Type</th>
<th>Appearance</th>
<th>Features</th>
<th>Max. Width (㎜)</th>
<th>Max. Thick. (㎜)</th>
<th>Size (㎜)</th>
<th>Wt. (㎏)</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS153</td>
<td></td>
<td>PolyBelt skiver for making skived ends. Highly reliable and widely accepted.</td>
<td>150</td>
<td>3.0</td>
<td>400</td>
<td>380</td>
<td>435</td>
</tr>
</tbody>
</table>

Poly Press

<table>
<thead>
<tr>
<th>Type</th>
<th>Appearance</th>
<th>Features</th>
<th>Max. Width (㎜)</th>
<th>Max. Thick. (㎜)</th>
<th>Size (㎜)</th>
<th>Wt. (㎏)</th>
<th>Power</th>
<th>Temp. (℃)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS 153</td>
<td></td>
<td>PolyBelt press for skived joining. Lightweight, easy to use and well-regarded in the industry.</td>
<td>50</td>
<td>2.5</td>
<td>112</td>
<td>160</td>
<td>90</td>
<td>1.3</td>
</tr>
<tr>
<td>PS 103</td>
<td></td>
<td>PolyBelt press for skived joining. Reliable, easy to use and well-regarded in the industry.</td>
<td>100</td>
<td>5.0</td>
<td>140</td>
<td>295</td>
<td>150</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Measurement of tension has depended greatly on the measurer’s instinct, sometimes with very subjective results. Now, the sonic belt tension meter allows anyone to measure tension easily and correctly. Acoustic waves (natural frequency) generated by a belt are captured by the meter’s sensor, and a digital processor uses the reading to calculate tension to a high degree of accuracy. The precise results are displayed on-screen.

Sonic Tension Meter U-508

- Finger Puncher
  - Type: FP120-10-50
  - Appearance: Precise indexing system
  - Features: 50 6.0 180 600 250 9.0 120x10
  - Type: FP120-10-100
  - Appearance: Precise indexing system
  - Features: 100 6.0 230 610 250 10.5 120x10

- Heating Press
  - Type: NSP-1210-1
  - Appearance: Automated heating and cooling press
  - Features: 100 6.0 230 320 180 9.5 120x10
  - Type: NSP-1210-2
  - Appearance: Automated heating and cooling press
  - Features: 100 6.0 230 320 180 9.5 120x10

- Other Tools
  - Presetter
    - Features: Guide rails to hold joint straight when pressing
  - Clamp (2 Pieces)
    - Features: Clamps for holding presetter together when pressing
### TROUBLESHOOTING & SOLUTIONS

<table>
<thead>
<tr>
<th>Issue</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>On all spindles, the required revolution is not obtained.</td>
<td>Belt slippage occurring on the motor drive pulley.</td>
<td>The belt tension should be increased.</td>
</tr>
<tr>
<td></td>
<td>Oil adhering to the belt.</td>
<td>Wipe away the oil which has adhered to the belt surface.</td>
</tr>
<tr>
<td></td>
<td>The diameter of some pulleys is not correct.</td>
<td>Replace the belt with a new one if it is not possible to clean it.</td>
</tr>
<tr>
<td></td>
<td>Belt slippage occurring on motor-drive belt or the belt driving the tangential-drive pulley.</td>
<td>Increase belt tension.</td>
</tr>
<tr>
<td></td>
<td>Yarn's &quot;Balloon-load&quot; exceeds the transmitted power of the belt.</td>
<td>Check the belt tension and or the intruding depth of the contact pulley.</td>
</tr>
<tr>
<td>On the slack side, the required revolution is not obtained.</td>
<td>The pressure load of the belt against the spindle wharves on the slack side is insufficient.</td>
<td>Increase the belt tension.</td>
</tr>
<tr>
<td></td>
<td>Yarn particles are wound up in the spindle wharves and as a result, the spindle load is increased.</td>
<td>Remove the yarn particles.</td>
</tr>
<tr>
<td></td>
<td>Something is wrong with the bearing rotation.</td>
<td>Replace the bearing or the spindle with a new one.</td>
</tr>
<tr>
<td>Intermittent noise.</td>
<td>Some foreign materials have adhered to the belt surface.</td>
<td>Grind the belt surface lightly with fine sandpaper.</td>
</tr>
<tr>
<td></td>
<td>Some foreign materials have adhered to the spindle wharves.</td>
<td>Wipe away the foreign materials.</td>
</tr>
<tr>
<td>Noise at certain places(such as at spindles).</td>
<td>The spliced section of the belt is beginning to tear.</td>
<td>Rejoin the spliced section.</td>
</tr>
<tr>
<td></td>
<td>A section of the belt surface is deformed.</td>
<td>Check the cause. Take appropriate corrective action if such deformation is caused by abnormal abrasion of the belt.</td>
</tr>
<tr>
<td></td>
<td>Noise at certain places(such as at spindles).</td>
<td>Check the cause. Take appropriate corrective action if such deformation is caused by abnormal abrasion of the belt.</td>
</tr>
<tr>
<td>Belt tends to deviate in either upper or lower direction from the proper tracking position.</td>
<td>Something is wrong with the belt tracking.</td>
<td>Adjust the belt tracking by adjusting contact pulleys or guide pulleys.</td>
</tr>
<tr>
<td>Belt tends to run zigzag against the pulley axis.</td>
<td>Something is wrong with the belt tracking.</td>
<td>Adjust the belt tracking by adjusting contact pulleys or guide pulleys.</td>
</tr>
<tr>
<td>Spindles are not securely fixed.</td>
<td>Check the bearings.</td>
<td>Make pulley crown larger.</td>
</tr>
<tr>
<td>Spindle wharves, contact pulleys or other pulleys are not horizontally aligned.</td>
<td>Align pulleys properly.</td>
<td></td>
</tr>
</tbody>
</table>
Nitta Corporation turns dreams into reality. Our combination of dynamic imagination and creativity with an organic corporate structure enables us to cover a wide-range of products from the most advanced semiconductors and space development to everyday commodities. We are continuously seeking new products and new frontiers. This new technology, not immediately obvious to the naked eye, is vital to the continued growth of every industry. Our objective is to develop the extraordinary. Then to translate the extraordinary into the everyday.

**BELTING PRODUCTS**

Product Information

The Nitta tradition of manufacturing belting products began in 1888, with the power transmission leather belts that were the first of their kind to be produced in Japan. Today, our power transmission and conveyor belts continue to be utilized in a wide variety of machines. By meeting society’s needs with products including high-function and high-added-value belts that convey power and objects more rapidly and reliably than ever, Nitta uses its technical capabilities to make a contribution to our society.

**CONVEYOR PRODUCTS**

Product Information

Conveyors, which transport a variety of products from one station to another, must be efficient, capable of making the most of a limited amount of space to convey objects smoothly without any human aid. At Nitta, where we carry out the design-to-construction process for production-line conveyor systems, we use our technical know-how to promote conveyance speed and safety, and also offer advice on issues including the placing of conveyors to accommodate machines or installation environment. In a world where manufacturing and product logistics are becoming more important than ever, Nitta provides the ideal solutions to your conveyor product needs.

**ENGINEERED RUBBER PRODUCTS**

Product Information

Skyscrapers, intelligent buildings and a lattice-like pattern of highly ordered expressways make city life more comfortable. It is essential for these utilities to be safe and durable as well as aesthetically pleasing. Nitta is providing various kinds of reliable and easily maintained engineered rubber products such as construction materials and precision molding. They are made from high quality rubber with our own unique and special technology. Cities are full of amenities, and we are supporting the safety and comfort of city life by supplying high quality products.

**THE EXCELLENCE OF NITTA TECHNOLOGY**

Conveyance and transmission systems harness the power in products.

Integrated Systems Enhance Quality

Conveyance and transmission systems harness the power in products. For the automobile and beyond, Gates Unitta Asia (GLA) is the leader in power transmission.

**AIR FILTRATION PRODUCTS**

New technology innovation is required everyday in high-technology industries. Nitta has been contributing significantly to the fields of semiconductor production and nuclear application by using unique air filter systems to create totally dust-free environments. These fields are at the forefront of our exits. Meanwhile, our filter systems are broadly used not only these fields but also PPD (flat panel display), pharmaceuticals, foods, office buildings, and so on. Furthermore, we are developing ecological products which aim to reduce industrial waste and save resources, energy and costs. We are creating comfortable and dust-free environments, as well as protecting the earth and the natural environment, giving consideration to all environments and the realization of a perfect ecosystem.

**CHROMEPLATING PRODUCTS**

These are the newest products for automated production lines by our connecting technologies. Industrial robots have a key role in the automation line. In response to a variety of applications required by the end of the industrial robot’s arm we will meet the demands of our customers.

**TACTILE SENSOR PRODUCTS**

0.1mm thin film sensor supports the quality improvement and product development needs of our customers.

**THERMOSENSITIVE ADHESIVE TAPE**

In various fields, such as industry and medical, our thin film sensor shows the pressure distribution on the contact area in real time, and contributes to advanced quality control, prompt development and high customer satisfaction.

**WIRELESS COMMUNICATION DEVICES**

By integrating our original rubber and resin technologies, we have developed high-performance magnetic sheets for wireless communication of mobile equipment as well as RFID tags (non-contact IC cards).

**NITTA GROUP**

**GATES UNITTA ASIA COMPANY**

Integrated Systems Enhance Quality

Conveyance and transmission systems harness the power in products. For the automobile and beyond, Gates Unitta Asia (GLA) is the leader in power transmission.

**NITTA HAAS INCORPORATED**

A Well Sharpened Future is Just Around the Corner

Polishing Systems, which are progressing toward "Nano-Structures." The world of human technology that keeps seeking "Beauty and Difference."