The Tucker Plastic Nut

Plastic nut with preformed thread.

Secure and easy fastening in the automotive industry.
The Tucker plastic nut

Progress in details –
for more security in the overall process

Less weight without any reduction in security and ease of handling, and even more quality and a higher functional reliability – lighter materials such as aluminium, thinner metal sheets and the replacement of conventional metal parts with innovative plastic elements are paving the way to this objective.

One example for this is the new Tucker plastic nut. In addition to this, the nut is substantially optimizing the process of screwing it on – no matter if it is manual or automatic. This affords greater safety in the manufacturing process.

The Tucker plastic nut. With preformed thread.
Many advantages in just “one piece”!

<table>
<thead>
<tr>
<th>Less weight</th>
<th>Less assembly force</th>
<th>Higher assembly safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Despite the reduction in weight, the nut excels due to its high mechanical strength and temperature resistance. This is achieved by a plastic material with a special thermoplastic matrix and added glass fibers.</td>
<td>As the thread has already been preformed, a lower thread torque moment is now required. This leads to a clearly extended setting range between turning moment and overtwist torque, and assembly with a lower torque becomes now possible. Ideally suited for thin sheet metal and sensitive components.</td>
<td>Both pins and welded connections with the base plate are less stressed due to the lower torque needed for assembly. This, practically, eliminates the risk of deforming the base plate and other components.</td>
</tr>
</tbody>
</table>

To optimize the fit between nut and module, the flange of the nut can be adapted to the component. The plastic nut is also available with an integrated special washer to protect the components to be assembled with distortion.

Suitable for many fastening applications

It doesn’t matter if you are attaching gas pedal brackets, lamp holders, covers and lining, drawers or racks – many things can be fixed more easily in a “light way” and with a reduced assembly torque moment.

The components are securely fixed and will not vibrate loose even in case of applications that involve great forces, such as closing the engine hood or permanent vibration on uneven roads.
Technical advantages in detail

- Thread turning moment and recommended joint torque are clearly separated.
- The low thread forming torque leads to a substantially increased setting range for the assembly torque.
- The low assembly torque ensures a high tensile force of the secured joint connection.
- The lower assembly torque is reducing the energy consumption (e.g. the battery of the screw driver extended).
- No damage to the corrosion protection and a reduced risk of corrosion in the screwed connection due to a lower friction coefficient.
- The thread fits to the Tucker rough thread (Xmas tree thread). Adjustment of the level of self-locking to be made as required.
- Secure seat even during dynamic stress. The self-locking features impede independent loosening in case of vibration or bumps.
- Good cushioning and suspension properties.
- Resistance against several media possible.
- Disassembly and recycling without any problems.

The suitable nut for each application. With or without washer.

1. Plastic nut with preformed thread

Suitable for applications in which the part to be assembled is already protected from distortion by design.

2. Plastic nut with preformed thread and integrated washer

Suitable for applications in which the part to be assembled should be protected from distortion.

The novelty: This nut is equipped with a washer that separates during the assembly process at 3 fixing points which are designed as predetermined breaking points. Nut and washer form one connected part – an economical aspect in production and an efficient feature for assembly and handling.

In addition to this, the washer is equipped with a slightly elastic TPE ring on its bottom. The higher friction of the TPE compared to the component causes a better fixation of the component without loosing the adjustment of the part. The washer is separated from the nut during screwing-on, to become mobile and to fix the part to be assembled when the nut is fastened.

The washer’s contact surface to the nut is made of the same material as the nut. Thus, the friction coefficient between nut and washer is permanently lower than the friction coefficient between TPE ring and component. This efficiently prevents the component from rotating during assembly. At the same time, the TPE protects the component surface and, depending on the component, a form-closed, almost sealed connection is created.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Bolt-type</th>
<th>Flange Ø</th>
<th>Height in mm</th>
<th>Recomm. fastening torque*</th>
<th>Spanner size</th>
<th>Material</th>
<th>Special features</th>
</tr>
</thead>
<tbody>
<tr>
<td>P 1596</td>
<td>Hexagon nut for welding bolts T5</td>
<td>T 5 rough thread</td>
<td>18 mm</td>
<td>11</td>
<td>3,5 + 1 Nm</td>
<td>10 mm</td>
<td>PA 6.6 black GF 30</td>
<td></td>
</tr>
<tr>
<td>P 1253</td>
<td>Flange nut for welding bolts T5</td>
<td>T 5 rough thread</td>
<td>16 mm</td>
<td>13/7,4</td>
<td>3,5 + 1 Nm</td>
<td>10 mm</td>
<td>PA 6.6 black GF 30</td>
<td></td>
</tr>
<tr>
<td>P 1832</td>
<td>Hexagon nut with TPE ring for welding bolts T6</td>
<td>T 6 rough thread</td>
<td>28 mm</td>
<td>19</td>
<td>4,5 + 1 Nm</td>
<td>PA 6.6 black GF 30</td>
<td>TPE ring</td>
<td></td>
</tr>
<tr>
<td>P 1896</td>
<td>Hexagon nut with TPE ring for welding bolts T5</td>
<td>T 5 rough thread</td>
<td>16 mm</td>
<td>18</td>
<td>3,5 + 1 Nm</td>
<td>10 mm</td>
<td>PA 6.6 black GF 30</td>
<td>TPE ring</td>
</tr>
</tbody>
</table>

*to be adjusted depending on the fastening task and the component
The Tucker plastic nut

The first nuts that are available from a "coil"

The technology that once revolutionized the application of plastic parts and clips in the automotive industry has now been implemented for the application of nuts: the plastic nut with Plastifast design.

Here, the plastic nuts are, one after the other, correctly arranged for assembly and linked to form a virtually endless band. Plastic nut and band are produced in a linked form by a forming tool in one working operation.

Feeding, positioning and placing in one working operation!

This function is carried out by an electronically controlled joining tool which is permanently installed in fixed plants or moved by a robot. It can be integrated in existing production lines at any time.

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