

**als**

AIRFIELD LIGHTING  
SYSTEMS UK LTD

## Accessories

### SmartBolts.

Incredibly advanced. Surprisingly simple.



Airfield Lighting Systems (ALS) has launched a Visual Indication System that turns the top head of a bolt from red to black as you tighten it. SmartBolts give you peace of mind because you know your bolts are at the correct tension which is vital for Airfield safety. They can be easily retrofitted to existing runway lighting and do not need to be replaced with every inspection, saving you money and time.



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## Visual Indication System



The Visual Indication System is a method of measuring bolt tension that is embedded in every SmartBolt. This technology uses colour to indicate tension. Changes in colour are proportional to bolt stretch, ensuring accurate and reliable measurements.

## Unmatched Benefits



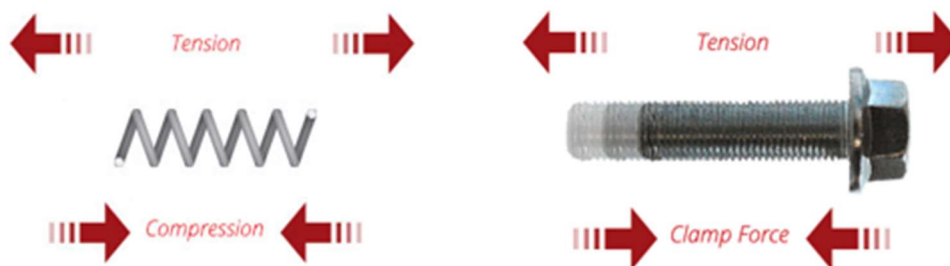
SmartBolts improve the safety and reliability of your equipment. A real-time visual alert of tension allows hands-free inspection. Service life is extended with full repeatability, reusability, and no wearable parts. Install and inspect on-the-go with no training required.

## Unprecedented Value



Remove the doubt associated with traditional nuts and reduce the maintenance frequency. Simple installations and faster inspections reduce operational costs. Furthermore, SmartBolts provide an early warning of reductions in bolt tension, leading to increased productivity and safer Airfields.

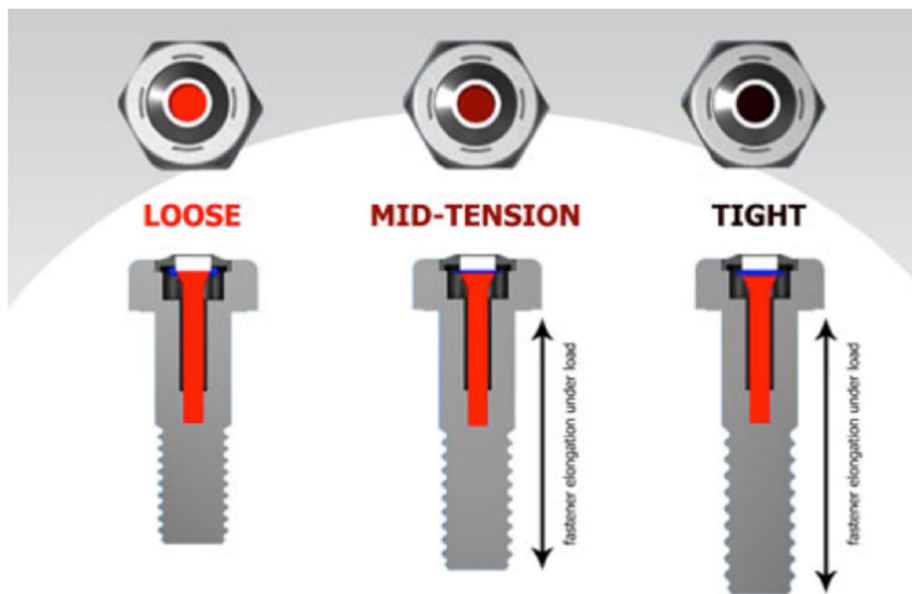
## How it Works



The bolts work very similar to springs. When you stretch a spring, it pulls back – trying to return to its original size. The stretching force is called tension. The force that pulls back is called compression.

The stretching force on a fastener is also called tension. The tension creates clamp force, which holds things together.

The coloured indicators represent a certain torque:



SmartBolts directly correlate tension with colour. Accuracy and reliability is ensured because the colour change of the Visual Indication System is proportional to bolt stretch — the only true measure of how tight your joint is (torque readings alone can be misleading since torque only measures how difficult it is to turn the bolt head).

The SmartBolts built-in visual tension indicator turns from red to black when proper tension has been reached — and is completely reversible for the life of the bolt.

## TECHNICAL DATA

HHCS	M10	1.50	30	A4-80	Passivated	Full	Stainless Steel	None
Head Type	Nom. Dia	Pitch	Length	Class	Finish	Thread length	Special 1	Special 2

<b>Design Tension, DT (kN)</b>	13
<b>Modified Yield Strength, Y (kN)</b>	25
<b>Modified Ultimate Tensile Load, UT (kN)</b>	34
<b>Minimum Grip Length, MGL (mm)</b>	20.0
<b>Maximum Tensile Strength Loss %</b>	26%
<b>Design Tension, %Y</b>	50%Y

<b>Installation Torque Estimate (K=0.17) (Nm)</b>	21
<b>Installation Torque Estimate (K=0.20) (Nm)</b>	25
<b>Installation Torque Estimate (K=0.23) (Nm)</b>	29

## DIMENSIONS

M10 Bolt 30mm length

## ORDERING CODES

Order Code	Description
SB-M10-1.5-30MM	SmartBolt Custom HHCS M10 - 1.5 mm x 30 mm A4-80 PA FTL -Stainless Steel - 50%Y



Taking Airfield Safety to the next level.

### Benefits

Reduces risk of FOD.

Save time on runway inspections, no need to get out of the van to torque the fittings a visual inspection is all that is required.

No need to throw away nuts and norlock washers each time, SmartBolts can be re-used over and over.

Tough and strong.

Long lifetime guarantee.