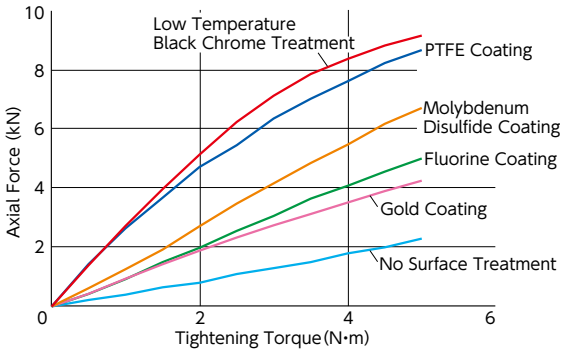
Properties of Screws with Special Surface Treatment

● Comparison of Axial Force by Surface Treatment

Surface Treatment	Tightening Torque (N・m)	Stress (N/mm^2)	Axial Force (kN)
No Surface Treatment	5	146	2.3
Fluorine Coating **SNSS-FC**	5	317	5.0
Molybdenum Disulfide **SNSS-MO**	5	425	6.7
Low Temperature Black Chrome Treatment **SNSS-RY**	5	584	9.2
PTFE Coating **SNSS-TF**	5	552	8.7
Gold Coating **SNSS-AUS**	5	273	4.3

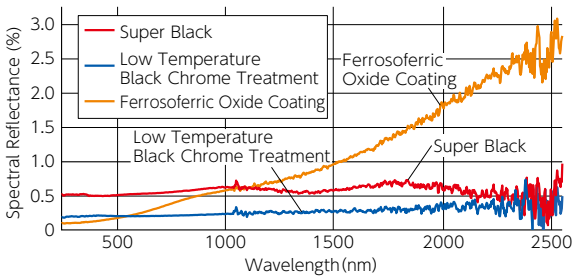


Test piece : Stainless Steel Socket Head Cap Screw M5×25
Strength Class : A2 - 70

- Values in chart are for reference only. They are not guaranteed values.
- The permanent elongation 0.2% proof stress of strength class A2 - 70 is 450 N/mm2. It is recommended to use at an axial force at which stress at tightening is 70% or less of the permanent elongation 0.2% proof stress.

The main cause of seizing is frictional heat on the thread peak surface generated during tightening.
The test results above confirmed that special surface treatment decreases the coefficient of friction of the thread peak surface and makes it possible to obtain higher axial force compared to untreated surfaces with the same tightening torque.
As a result, the tightening torque and frictional heat can be reduced, preventing the risk of seizing.

● Comparison of Spectral Reflectance by Surface Treatment



Low temperature black chrome treatment and super black result in extremely low spectral reflectance, which is optimal for optical instruments that require diffuse reflection prevention.