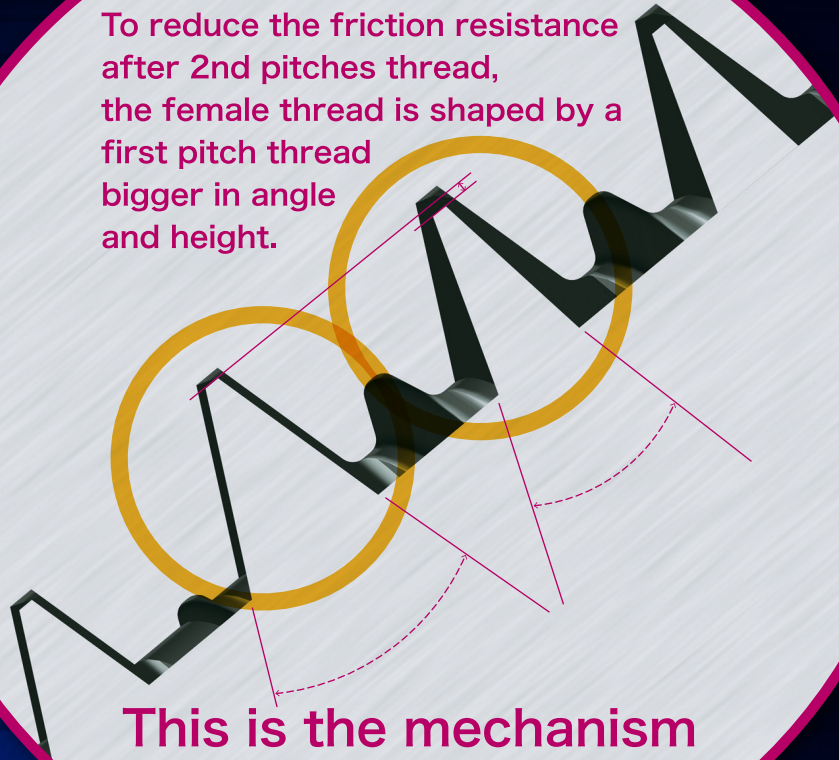


To reduce the friction resistance after 2nd pitches thread, the female thread is shaped by a first pitch thread bigger in angle and height.



This is the mechanism for reducing friction resistance.

Intelligent and Breakthrough design!!

Prevent adhesive phenomenon when fastening a soft metal workpiece.

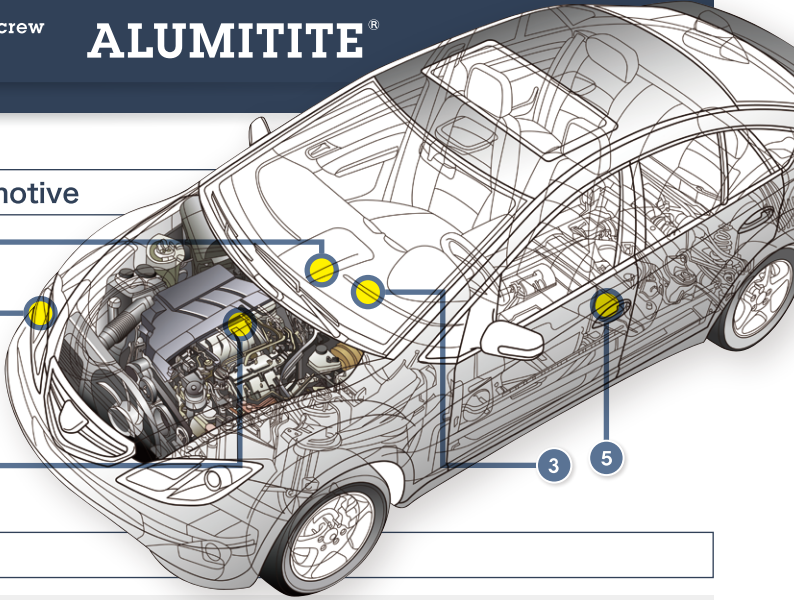
Self-tapping Screw
for soft metal

ALUMITITE®

- ✓ The specially designed thread realize reduction of friction resistance and lower tightening torque.
- ✓ Completely resists loosening from vibration and temperature change.
- ✓ Supports variation of pilot hole.

Fastening Solution.
Toward a new future of manufacturing technology

NITTO SEIKO



TECHNICAL REPORT 01 Major usage example of automotive

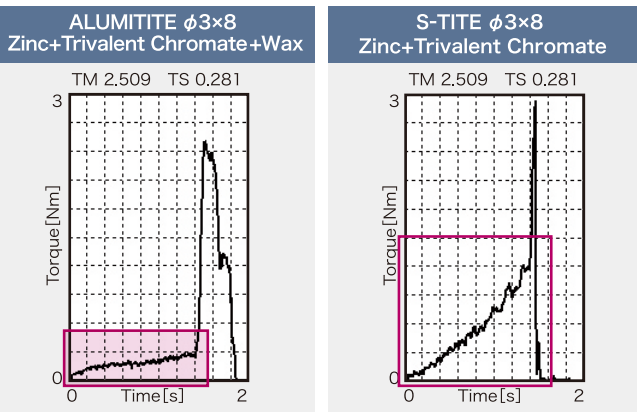
- 1 Compressor (Car air-conditioner)
- 2 Electric control unit (Brake)
- 3 Electric control unit (Power steering)
- 4 Headlight
- 5 Seat belt (Retractor)

TECHNICAL REPORT 02 Performance comparison

■ **Testing machine** Torque test machine AX-200 (Manufactured by Nitto Seiko CO., Ltd.) Thrust 68.8N

■ **Fastening condition** Workpiece material A5052 Material thickness t=15 Pilot hole ϕ 2.65~2.66 Fastening object material SPCC Material thickness t=1.0×3

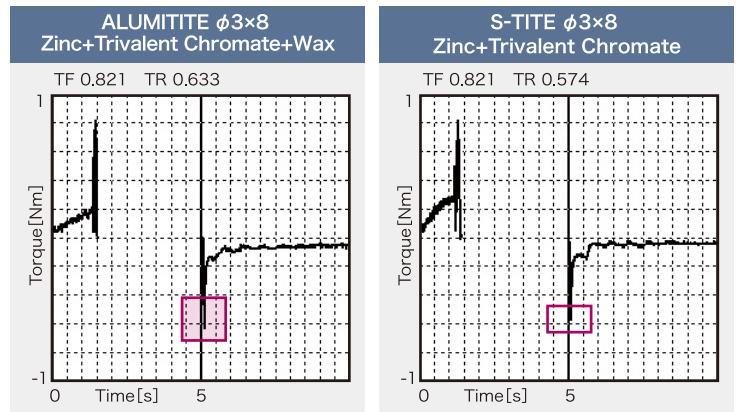
Stripping torque test



Rotation speed 300rpm

Drive torque (TS)	0.281	Drive torque (TS)	1.219
Stripping torque (TM)	2.509	Stripping torque (TM)	2.931
Drive-to-Strip torque ratio (k)	8.929	Drive-to-Strip torque ratio (k)	2.404

Loosening torque test



1st step torque 0.5N·m Rotation speed 300 rpm / 2nd step torque 0.8N·m Rotation speed 50 rpm

Tightening torque (TF)	0.821	Tightening torque (TF)	0.821
Loosening torque (TR)	0.633	Loosening torque (TR)	0.574
Loosening torque ratio	77.1%	Loosening torque ratio	69.9%

TECHNICAL REPORT 03 Verification of adhesive phenomenon

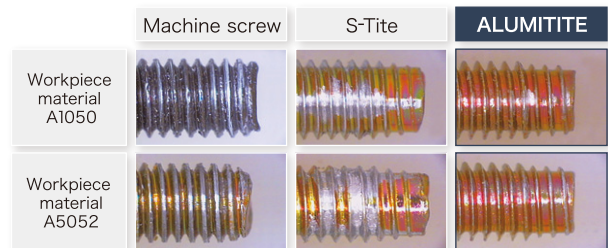
■ Vibration test

Vibration acceleration / 4.5G Amplitude width / 2mm
Frequency / 33.3Hz Time / 2 Hours

This photo is an enlarged photograph of each screw after vibration test when screws are fastened to the soft metal.

White portion of photo is stuck workpiece (aluminum) by seizing up.

※This photo is using colored chromate plating screw to make seizing up of aluminum more visible.



Prevent adhesive phenomenon

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