

Catch the metal chip when fastening



+ Something extra

Solution for
metal dust falling

CP-GRIP®

- ✓ Adhere the metal chip & dust that is generated by fastening
 - Prevent falling of metal chip & dust
- ✓ Reduce the friction with workpiece by coating applied
 - Reduce the torque to form female thread and realize fastening by low torque
 - Proper tightening torque is stable even when the pilot hole is unstable
 - Prevent adhesive phenomenon with workpiece

Solution for
metal dust falling

CP-GRIP®

The oil based viscous liquid which is enclosed in a microcapsule is applied on the screw point. (Self-tapping screw, Machine screw, Bolt, etc) We term these applied screws "CP-GRIP".



Self-tapping to the circuit board

Self-tapping had been thought unfit to the circuit board due to a problem of metal chips but it can be realized. It will contribute total cost reduction, weight saving and thinning.

TECHNICAL REPORT 01

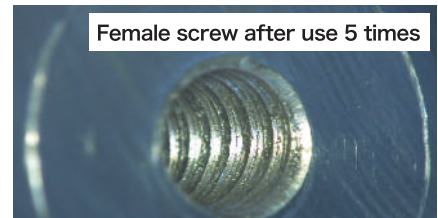
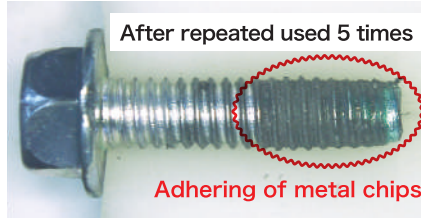
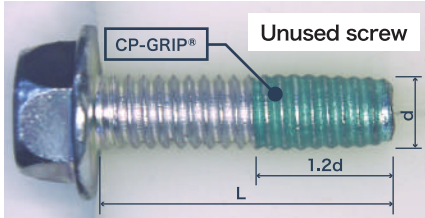
Prevent falling of metal chip & dust

■ Testing machine

Torque test machine AX-500
(Manufactured by Nitto Seiko Co., Ltd.)
Rotation speed 300rpm
Thrust 70.5N

■ Fastening condition

- Workpiece material ADC12 Through-hole
- Screw : TT2000 φ6x20



TECHNICAL REPORT 02

Reduction of friction resistance

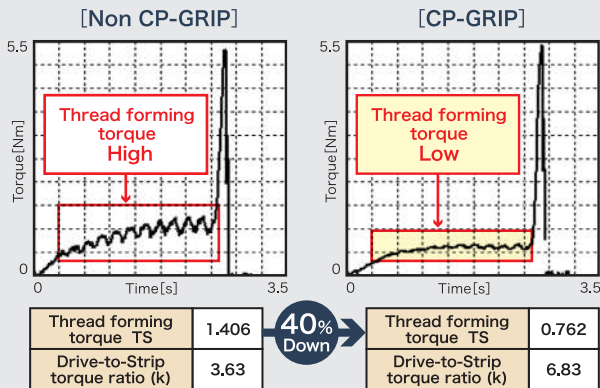
■ Testing machine

Torque test machine AX-200
(Manufactured by Nitto Seiko Co., Ltd.)
Rotation speed 300rpm
Thrust 68.6N

■ Fastening condition

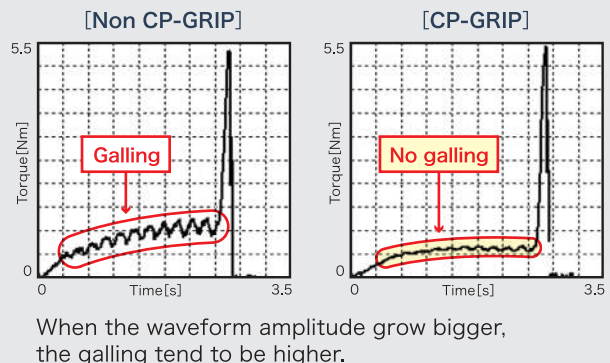
- Workpiece material ADC12
- Pilot hole diameter φ3.68
- Drilled hole
- Screw : TAPTITE series φ4

Comparison of thread forming torque



※Drive-to-Strip torque ratio (k)→ k = Stripping torque Min. / Thread forming torque Max.

Comparison of performance of preventing adhesive phenomenon



TECHNICAL REPORT 03

Adaptivity against unstable pilot hole diameter

■ Testing machine

Torque test machine AX-50
(Manufactured by Nitto Seiko Co., Ltd.)
Rotation speed 300rpm
Thrust 69.0N

■ Fastening condition

- Workpiece material ADC12
- Pilot hole dia (As below) Drilled hole
- Fastening object material : Automotive parts
- Screw : ALUMITITE φ2x8

Without CP-GRIP	Pilot hole dia	Proper tightening torque	Drive-to-Strip torque ratio (k)
	φ 1.77	0.27~0.38N·m	3.28
	φ 1.79	0.31~0.37N·m	2.76
	φ 1.81	0.29~0.37N·m	3.05
	φ 1.83	0.27~0.37N·m	3.22
	φ 1.85	0.21~0.36N·m	4.00

With CP-GRIP	Pilot hole dia	Proper tightening torque	Drive-to-Strip torque ratio (k)
	φ 1.77	0.23~0.40N·m	4.13
	φ 1.79	0.21~0.38N·m	4.21
	φ 1.81	0.18~0.39N·m	5.00
	φ 1.83	0.21~0.39N·m	4.29
	φ 1.85	0.21~0.39N·m	4.29

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