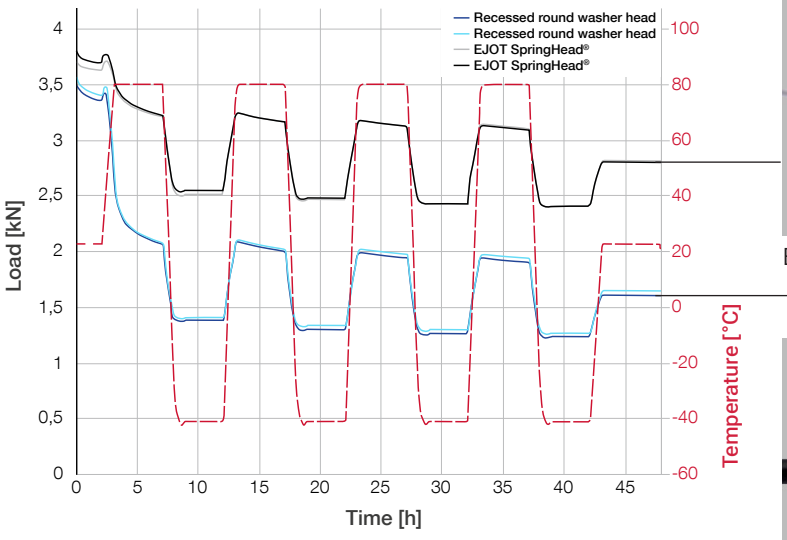
EJOT SpringHead®

Fastener head with integrated spring feature for metal applications

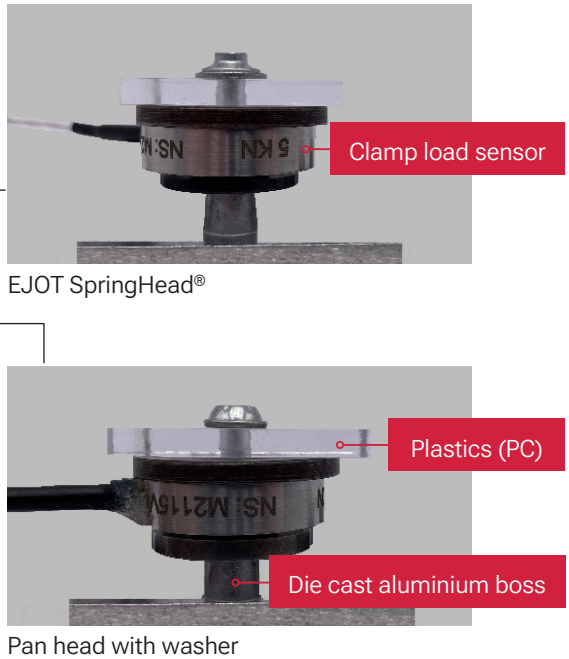
Every screw connection loses clamp load after assembly due to relaxation in the joint. Dynamic and/or thermal stress exacerbate this process. If the clamp load falls below a critical level, the connection fails. For example, if the joint relaxes and begins to separate there can be a loss of electrical contact. These failures can be prevented by increasing the elasticity of the screw connection. Ultimately, this can be achieved if spring elements are integrated into the screw connection. The innovative EJOT SpringHead® geometry facilitates this resilient feature and compensates for joint relaxation.

Clamp load retention thanks to increased elastic component

Compared to conventional head geometries, the SpringHead® offers a significantly increased elasticity. This better compensates for creep and temperature effects. As a result, high clamp load losses are avoided.



Comparison of clamp load relaxation ALtracs® Xt 40:
EJOT SpringHead® vs. pan head with washer (standard head)



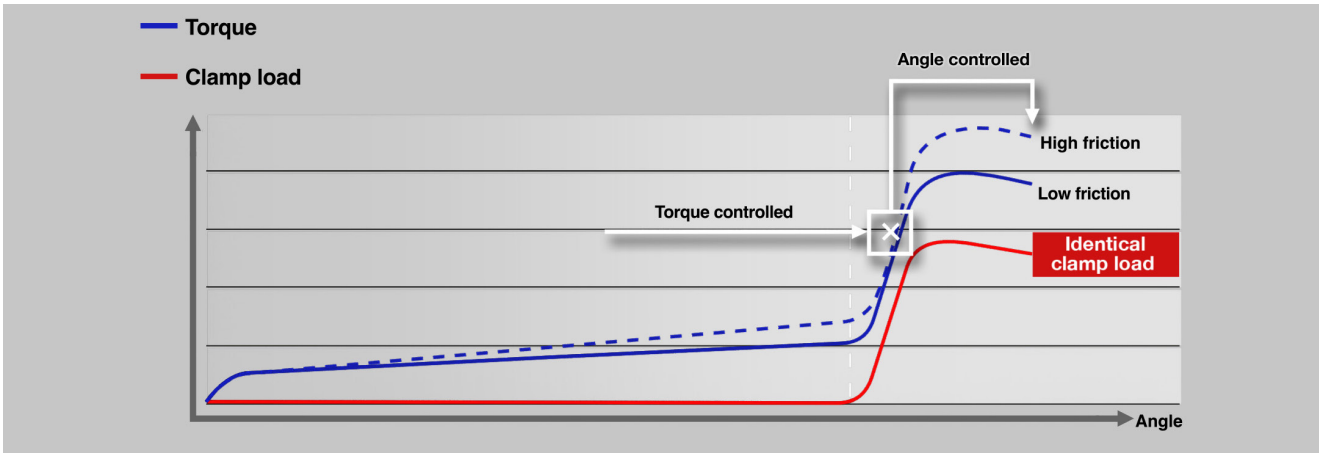
EJOT SpringHead®

Pan head with washer

EJOT. Bringing it together.

Friction-independent initial clamp load

EJOT SpringHead® always achieves a constant clamp load level during assembly, which is not subject to any frictional influences. Installation of the SpringHead® can be roughly compared to classic overelastic fastening, where certain areas of the screw are stressed beyond the yield point. EJOT SpringHead® geometry is designed for a specific clamp load. To achieve this clamp load, fastening is initially done using torque control up to an initial tightening torque. Final assembly is done using torque angle control in order to operate safely within the constant clamp load range of the SpringHead®. With this tightening method, tightening factors of up to 1.2 can be achieved (α_A-factor: ratio between maximum and minimum clamp load within the assembly variances).



Optimal solutions for different materials

EJOT SpringHead® is compatible with e. g. ALtracs® Xt or ALtracs® Plus for direct fastening into metals and metric threads. When the clamping part is made of steel, the SpringHead® can be used without a washer. For clamping parts made of plastic, aluminium or copper, it is recommended to use the SpringHead® with a captive washer for optimum clamp load retention. Two SpringHead® versions (soft & hard) with different initial clamp load levels are available for each screw size. Thus, there is a suitable SpringHead® for harder materials (i.e. steel, aluminum) as well as softer materials (i.e. copper, thermoplastics).

Norminal thread diameter [mm]			2.5	3.0	3.5	4.0	5.0	6.0	8.0
Head diameter D [mm]			$6^{-0.36}$	$7.5^{-0.36}$	$8.5^{-0.36}$	$9.8^{-0.36}$	$12^{-0.43}$	$14.5^{-0.43}$	$19.5^{-0.52}$
Drive			T8 / 8 IP	T10 / 10 IP	T15 / 15 IP	T20 / 20 IP	T25 / 25 IP	T30 / 30 IP	T40 / 40 IP
EJOT SpringHead®	soft	Head height K [mm]	$2.20^{\pm0.13}$	$2.65^{\pm0.13}$	$3.10^{\pm0.15}$	$3.60^{\pm0.15}$	$4.40^{\pm0.15}$	$5.30^{\pm0.15}$	$7.20^{\pm0.18}$
		Typical clamp load [kN]	$2.0^{+0.5}_{-0.6}$	$2.5^{+0.5}_{-0.7}$	$3.2^{+0.6}_{-0.8}$	$4.2^{+0.8}_{-1.1}$	$6.2^{+0.9}_{-1.3}$	$9.3^{+1.1}_{-1.3}$	$15{,}3^{+1.3}_{-1.7}$
	hard	Head height K [mm]	$2.25^{\pm0.13}$	$2.70^{\pm0.13}$	$3.30^{\pm0.15}$	$3.80^{\pm0.15}$	$4.75^{\pm0.15}$	$5.75^{\pm0.15}$	$7.85^{\pm0.18}$
		Typical clamp load [kN]	$2.3^{+0.5}_{-0.6}$	$2.9^{+0.5}_{-0.7}$	$5.0^{+0.6}_{-0.9}$	$6.3^{+0.7}_{-0.9}$	$10.4^{+0.8}_{-1.2}$	$15.8^{+1.1}_{-1.4}$	$26.9^{+1.5}_{-2.1}$
Washer-Ø x Washer height [mm]			Ø7.0 x 0.7	Ø9.0 x 0.8	Ø10.0 x 1.0	Ø11.5 x 1.2	Ø13.5 x 1.4	Ø16.0 x 1.6	Ø21.0 x 2.0

More information at www.ejot.com/industry or please contact
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