

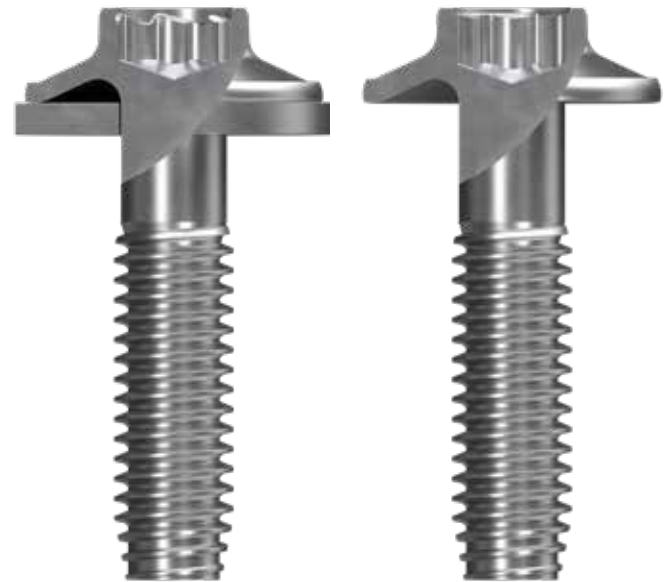
## EJOT SpringHead®

Screw head with integrated spring element

Every screw connection loses clamp load after assembly due to subsidence. Dynamic and/or thermal stress intensifies this process.

If the clamp load falls below a critical level, the connection fails, for example through loosening, separation or a loss of electric contacting. These failures can be prevented by increasing the elasticity in the screw connection. Amongst others, this can be achieved if spring elements are integrated into the screw connection. The innovative EJOT SpringHead® geometry facilitates this resilient feature and reliably compensates for subsidences without additional, conventional spring elements such as conical spring washers. The result is a screw head with integrated spring for a better clamp load retention under dynamic and thermal stress as well as a permanent electrical contacting.

For clamping parts with a low admissible surface pressure (e.g. plastics or copper), an additional captive washer is recommended for a better load distribution.



*With washer*

*Without washer*

### **Risk potential of a high-strength screw with captive spring element**

The usage of combination screws with galvanic coatings in conjunction with high-strength self-tapping screws always bears the risk that the spring element might fail due to hydrogen embrittlement. The reason is that captive spring elements are assembled before heat treatment and galvanic coating. Especially during the coating process, the high-strength spring material is exposed to a possibly hypercritical hydrogen charge due to the necessary preparation processes.

Since the materials for screws and spring elements differ, the strength properties of the screw and a low susceptibility to embrittlement of the spring element cannot be guaranteed at the same time. EJOT therefore does not offer the combination of a high-strength screw with captive spring element in the market.

## EJOT SpringHead® „soft“

for bearing surfaces with low admissible surface pressure such as copper, thermoplastic, magnesium etc.

Screw Ø [mm]	2.5	3.0	3.5	4.0	5.0	6.0	8.0	
Head Ø dk [mm]	6.0 -0.36	7.5 -0.36	8.5 -0.36	9.8 -0.36	12.0 -0.43	14.5 -0.43	19.5 -0.52	
Support Ø da [mm]	5.6 -0.09	7.0 ±0.11	7.9 ±0.11	9.2 ±0.11	11.2 ±0.14	13.5 -0.14	18.2 ±0.17	
Head height k [mm]	2.0 ±0.13	2.4 ±0.13	2.8 ±0.13	3.2 ±0.15	4.0 ±0.15	4.8 ±0.15	6.4 ±0.18	
Drive	8 IP	10 IP	15 IP	20 IP	25 IP	30 IP	40 IP	
Typical clamp load Fv [kN]	Min.	1.5	1.9	2.8	3.4	5.3	8.1	13.5
	Max.	2.2	2.7	3.7	4.4	6.5	9.6	15.3
Description example: ALtracs® Plus AP 40 x 16 SHsoft								

## EJOT SpringHead® „hard“

for bearing surfaces with higher admissible surface pressure such as steel, thermoset, aluminium etc.

Screw Ø [mm]	2.5	3.0	3.5	4.0	5.0	6.0	8.0	
Head Ø dk [mm]	6.0 -0.36	7.5 -0.36	8.5 -0.36	9.8 -0.36	12.0 -0.43	14.5 -0.43	19.5 -0.52	
Support Ø da [mm]	5.6 -0.09	7.0 ±0.11	7.9 ±0.11	9.2 ±0.11	11.2 ±0.14	13.5 -0.14	18.2 ±0.17	
Head height k [mm]	2.05 ±0.13	2.45 ±0.13	2.95 ±0.13	3.4 ±0.15	4.3 ±0.15	5.2 ±0.15	7.0 ±0.18	
Drive	8 IP	10 IP	15 IP	20 IP	25 IP	30 IP	40 IP	
Typical clamp load Fv [kN]	Min.	1.8	2.4	4.2	5.6	9.5	15.0	26.8
	Max.	2.6	3.2	5.3	5.9	11.3	17.1	29.5
Description example: ALtracs® Plus AP 40 x 16 SHhard								

## Optional washers for ALtracs® Plus

Screw Ø [mm]	2.5	3.0	3.5	4.0	5.0	6.0	8.0
Washer Ø x Washer height	7.0 x 0.6	9.0 x 0.8 8.0 x 0.8	12 x 1.0	12 x 1.0 10 x 0.8	14 x 1.0	16 x 1.6 17 x 1.6	20 x 2.0

