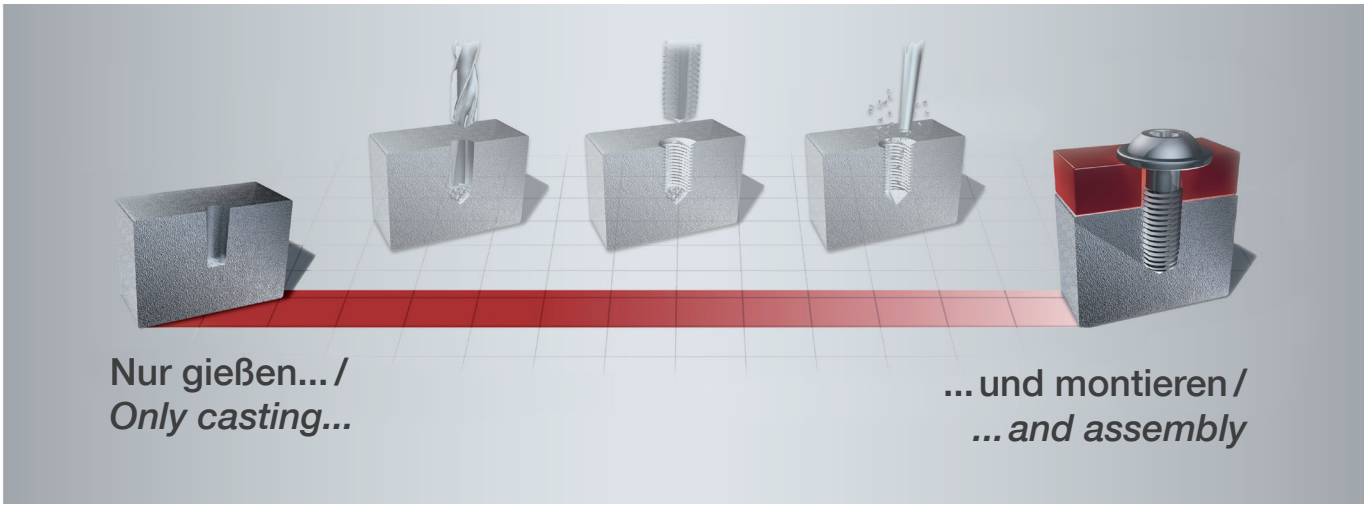
EJOT ALtracs® Plus

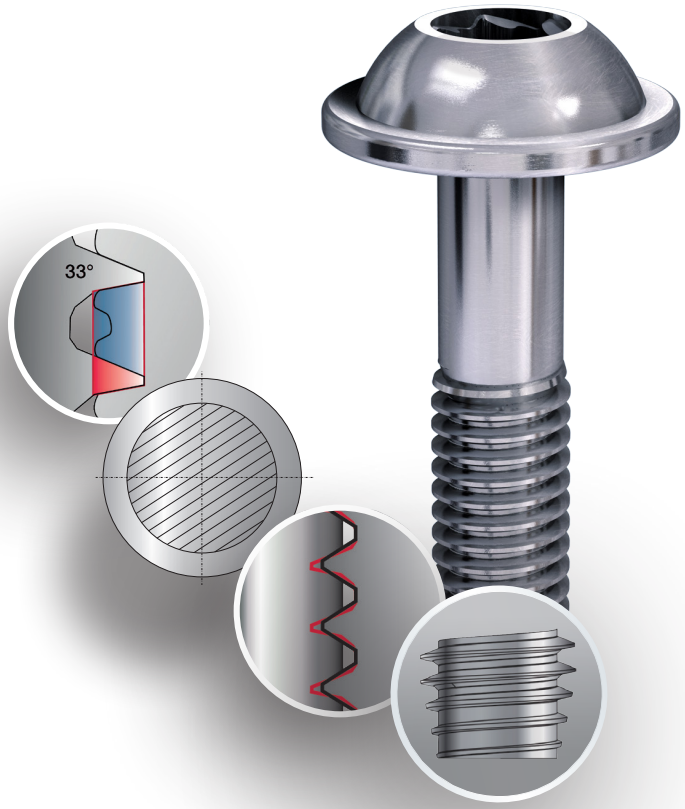
The self-tapping screw for light metal



Characteristics

- 33° flank angle
- Circular cross section
- Metric compatibility
- Conical thread forming zone
- Clamp load and relaxation comparable with metric 10.9 screws
- Thread design suitable for cast holes
- High self-locking of thread
- The ALtra CALC® prognosis programme for pre-dimensioning of joints saves time and effort for individual component testing.

EJOT ALtracs® Plus screws are thread-forming fasteners developed for maximum strength in light alloy assemblies and other non-ferrous metals such as zinc, copper, brass etc., up to 140 HB.



Material:

- through hardened steel analog metric, steel grade 10.9
- stainless steel grade A2 / A4

Chrome VI Free Platings:

- Zinc clear / blue passivated*
- Zinc / thick film passivation*
- ZnFe or ZnNi / transparent passivated*
- ZnFe or ZnNi / black passivated*
- Zinc flake coatings

* Additional sealing possible

EJOT. Bringing it together.

Design Recommendations:

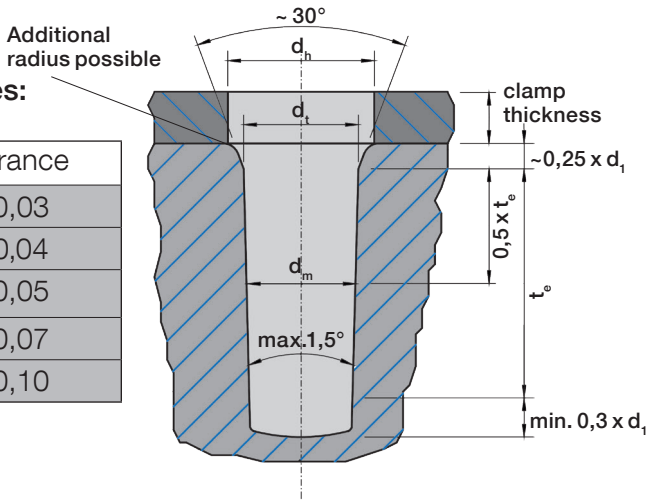
Insertion Depth t_e:

- safe assembly process min. 0,5 x d_1 (excl. forming point screw)
- vibration safe screw joint min. 1,5 x d_1 (incl. forming point)
- high-strength screw-joint min. 2,0 x d_1 (incl. forming point)

Insertion depth > 2,5 x d_1 is not recommended

Pre-hole Tolerances:

d_1	tolerance
1,6 - 2,0	± 0,03
2,2 - 3,5	± 0,04
4,0 - 5,0	± 0,05
6,0 - 7,0	± 0,07
8,0 - 10,0	± 0,10



Pre-hole recommendation for aluminum, magnesium, zinc, copper, brass, bronce up to hardness of 140 HB

Hard-ness	Al, Zn, Cu up to 55 HB Mg (up tp 90 HB)			Al, Zn, Cu 55-115 HB -				Al, Zn, Cu 115-140 HB -		
t_e [mm]	1,0 x d_1 [mm]	1,5 x d_1 [mm]	2,0 x d_1 [mm]	0,5 x d_1 [mm]	1,0 x d_1 [mm]	1,5 x d_1 [mm]	2,0 x d_1 [mm]	0,5 x d_1 [mm]	1,0 x d_1 [mm]	1,5 x d_1 [mm]
d_1	d_m	d_m [d_t]*	d_m [d_t]*	d_m	d_m	d_m [d_t]*	d_m [d_t]*	d_m	d_m	d_m [d_t]*
1,6	1,46	1,48 [1,51]	t_{emax}= 1,5 x d_1	1,46	1,48	1,49 [1,52]	t_{emax}= 1,5 x d_1	1,48	1,49	1,51 [1,54]
1,8	1,63	1,65 [1,69]	t_{emax}= 1,5 x d_1	1,63	1,65	1,67 [1,71]	t_{emax}= 1,5 x d_1	1,65	1,67	1,68 [1,72]
2,0	1,83	1,85 [1,89]	t_{emax}= 1,5 x d_1	1,83	1,85	1,87 [1,91]	t_{emax}= 1,5 x d_1	1,85	1,87	1,89 [1,93]
2,2	1,98	2,00 [2,04]	2,03 [2,09]	1,98	2,00	2,03 [2,07]	t_{emax}= 1,5 x d_1	2,00	2,03	2,05 [2,09]
2,5	2,20	2,25 [2,30]	2,30 [2,37]	2,20	2,25	2,30 [2,35]	2,35 [2,42]	2,25	2,30	2,35 [2,40]
3,0	2,65	2,70 [2,76]	2,75 [2,83]	2,65	2,70	2,75 [2,81]	2,80 [2,88]	2,70	2,75	2,80 [2,86]
3,5	3,10	3,15 [3,22]	3,20 [3,29]	3,10	3,15	3,20 [3,27]	3,25 [3,34]	3,15	3,20	3,25 [3,32]
4,0	3,55	3,60 [3,68]	3,65 [3,75]	3,55	3,60	3,65 [3,73]	3,70 [3,80]	3,60	3,65	3,70 [3,78]
5,0	4,40	4,50 [4,60]	4,60 [4,73]	4,40	4,50	4,60 [4,70]	4,70 [4,83]	4,50	4,60	4,70 [4,80]
6,0	5,30	5,40 [5,52]	5,50 [5,66]	5,30	5,40	5,50 [5,62]	5,60 [5,76]	5,40	5,50	5,60 [5,72]
8,0	7,00	7,20 [7,36]	7,40 [7,61]	7,00	7,20	7,40 [7,56]	7,50 [7,71]	7,20	7,40	7,50 [7,66]
10,0	8,80	9,00 [9,20]	9,20 [9,46]	8,80	9,00	9,20 [9,40]	9,40 [9,66]	9,00	9,20	9,40 [9,60]

d_1 = nominal diameter of screw d_m = hole diameter middle d_t = hole diameter top t_e = insertion depth

d_h = hole diameter through hole (ca. 1,1 x d_1) Min. external diameter boss: ca. 2 x d_1 * d_t calculated with 1,5°

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04.16/PDF12.22 subject to technical changes.