



Westfield Fasteners Product Specification:

ISO 4028 / DIN 915 - Dog Point Grub Screws

This product guide contains the specification for metric threaded dog point grub screws available from Westfield Fasteners. The basis of this specification is the ISO standard ISO 4028 and the older DIN 915.

Product Description

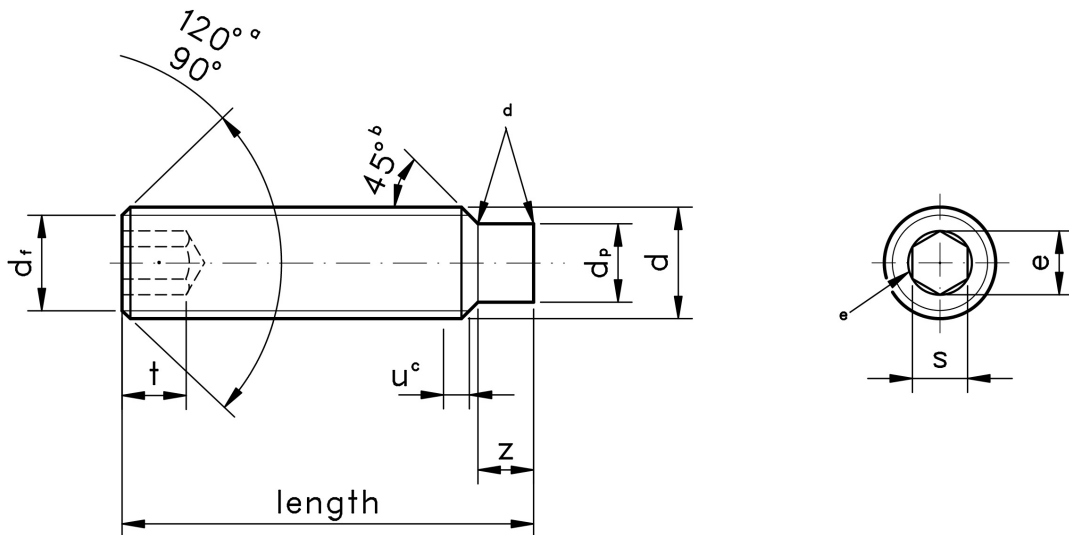
Also known as a set screw, these headless types of screws have many uses. This particular type has a hex socket drive, and a square profiled end called a dog point on the opposite end.

Scope of the ISO standard.

ISO 4028 specifies the tolerances and the variation in form of metric threaded dog point grub screws, for sizes from M1.6 up to and including M24. Table 1 below defines the overall dimensions and tolerances of this screw type. Table 2 defines the tolerance on the shank length.

Grub screws in general are graded by hardness rather than by tensile strength. The relevant DIN and ISO standards specify a 45H hardness grade for non stainless steel grub screws and 21H for stainless steel grub screws.

Although the DIN 915 standard has been superceded by ISO 4028, the dimensions are the same and off-the-shelf parts could be marked with either standard.



Permissible alternative form of socket

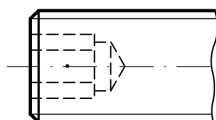


Figure 1: Dog Point Grub Screw

Notes to figure 1:

- a - The 120 degree angle is a requirement for the shortest length screws for each diameter.
- b - The 45 degree angle only applies to the portion of the point situated below the root diameter of the thread.
- c - There may be up to 2 incomplete threads at the end of the bolt.
- d - A slight radius.
- e - A slight rounding or countersink at the mouth of the socket may be present.

Table 1: Dimensions & Tolerances according to ISO 4028 / DIN 915

Thread, d		M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
thread pitch (standard metric coarse)		0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
diameter of dog point	d _p max.	0.80	1.00	1.50	2.00	2.50	3.50	4.00	5.50	7.00	8.50	12.00	15.00	18.00
	d _p min.	0.55	0.75	1.25	1.75	2.25	3.2	3.7	5.2	6.64	8.14	11.57	14.57	17.57
diameter of the face	d _f	≈ (approx.) Minor thread diameter												
socket width across corners	e min.	0.809	1.011	1.454	1.733	2.303	2.873	3.443	4.583	5.723	6.863	9.149	11.429	13.716
socket width across flats	s nom.	0.7	0.9	1.3	1.5	2	2.5	3	4	5	6	8	10	12
	s max.	0.724	0.913	1.300	1.580	2.080	2.580	3.080	4.095	5.140	6.140	8.175	10.175	12.212
	s min.	0.710	0.887	1.275	1.520	2.020	2.520	3.020	4.202	5.020	6.020	8.025	10.025	12.032
socket depth	t min. (shortest lengths)	0.7	0.8	1.2	1.2	1.5	2	2	3	4	4.8	6.4	8	10
	t min. (other lengths)	1.5	1.7	2	2	2.5	3	3.5	5	6	8	10	12	15
length of dog point (shortest screw lengths)	z max.	0.65	0.75	0.88	1.00	1.25	1.50	1.75	2.25	2.75	3.25	4.30	5.30	6.30
	z min.	0.40	0.50	0.63	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00
length of dog point (other screw lengths)	z max.	1.05	1.25	1.50	1.75	2.25	2.75	3.25	4.30	5.30	6.30	8.36	10.36	12.43
	z min.	0.80	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00	8.00	10.00	12.00

Table 2: Shank Length Tolerance according to ISO 4028 / DIN 915

thread length (mm)	+/- (mm)
2-3	0.2
4-6	0.24
8-10	0.29
12-16	0.35
20-30	0.42
35-50	0.5
55-60	0.6

For further details, please refer to the ISO/DIN standard document for this item.