Turnbuckles
Forged (Open Type)

DIN 1480

Spannschlösser, geschmiedet (offene Form)

Dimensions in mm

Details not specified are to be designed as appropriate.

SP Turnbuckle nut



Designation of a turnbuckle nut SP with right and left-hand thread d_1 = M 12:

Turnbuckle nut SP M 12 DIN 1480

SP AE Turnbuckle (turnbuckle nut SP with welding ends AE)

Designation of a turnbuckle SP AE consisting of a turnbuckle nut with two welding ends with right and left-hand thread d_1 = M 12:

Turnbuckle SP AE M 12 DIN 1480

d_1	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 30	M 36	M 42	M 48	M 56
d_2	12	15	18	21	27	34	39	45	55	63	80	80
e	19	23	30	34	42	52	60	74	86	104	135	135
f	9	11	14	16	20	24	28	34	40	50	65	65
h min	6	8	9	11	14	17	20	23	28	32	40	40
l_1	110	110	125	125	170	200	255	255	295	330	355	355
m_1	12	15	18	21	27	34	39	45	55	63	78	78
m_2 max.	6	8	9	11	14	17	20	23	28	32	39	39
Adjustability ≈	80	75	85	80	110	130	170	160	180	200	195	195

Technical conditions of delivery according to DIN 267

Material: Steel of at least 330 N/mm^2 (≈34 kp/mm^2) tensile strength
Steel of higher strengths or specified materials by agreement.

Finish: Drop forged
Permissible variations according to forging quality F according to DIN 7526

Thread: Regular metric thread according to DIN 13
Tolerance on thread 7H according to DIN 13 Part 15

Hexagon nuts according to DIN 555 or DIN 934, with right and left-hand thread, are to be specially ordered.

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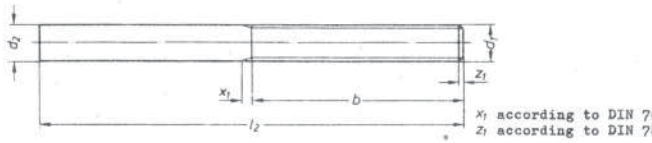
AE Welding end



Designation of a welding end AE with right-hand thread d_1 = M 12:

Welding end AE M 12 DIN 1480

Designation of a welding end AE with left-hand thread d_1 = M 12 left-hand (LH):

Welding end AE M 12 LH DIN 1480

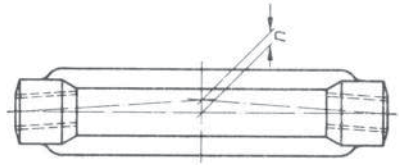
d_1	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 30	M 36	M 42	M 48	M 56
$d_2 \pm IT15$	6	8	10	12	16	20	24	30	36	42	48	56
b	65	65	75	75	100	120	150	160	180	200	220	230
l_2	120	120	150	150	200	220	260	260	300	350	380	380

Technical conditions of delivery according to DIN 267

Strength category or material: 3.6 according to DIN 267 Part 3, weldable
Other materials by agreement

Type: g according to DIN 267 Part 2

The following applies to the permissible variation of coaxiality of the thread ends:



d_1	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 30	M 36	M 42	M 48	M 56
n	0,4		0,5		0,6		0,7	0,8	0,9	1	1,1	1,2

Explanations

As compared with DIN 1480 Part 1, Issue of April 1942×, the present Standard contains the following amendments and additions:

a) For sizes M 6, M 8 and M 10, the short version has been omitted. Sizes M 64 and M 72 × 6 also no longer appear.

b) Turnbuckle nuts and welding ends are shown separately. The designation of the parts has been amended and brought into line with DIN 1478 and DIN 1479.

c) The turnbuckle blank is no longer listed.

d) The overall length of turnbuckle nuts has not been changed, but the other dimensions have been brought into better relationship to the thread diameter.

e) The existing property class 4A has been replaced by "steel with a tensile strength of at least 330 N/mm² (≈34 kp/mm²)" for turnbuckle nuts and by property class 3.6 according to DIN 267 Part 3 for welding ends. The axial load capacity of the turnbuckles should be based on these connecting parts, for which DIN 267 Part 3 stipulates a yield strength of 200 N/mm² (≈20 kp/mm²). In the sense of DIN 1050, however, a minimum tensile stress of σ_{zul} = 112 N/mm² (≈11.2 kp/mm²) would have to be adopted as the maximum for the welding end. This gives the following permissible loads.

d_1	M 6	M 8	M 10	M 12	M 16	M 20
Permissible load N	2250	4100	6500	9300	17 700	27 000

d_1	M 24	M 30	M 36	M 42	M 48	M 56
Permissible load N	39 200	62 500	91 000	125 000	165 000	230 000

The above permissible loads apply to normal use with welding ends AE according to this Standard. The actual load capacities of the turnbuckles must, if necessary, also be determined by calculation for each individual case by reference to the stressed parts.

f) Details of finish and thread of turnbuckle nuts have been modified.

g) Marking with "L" has been stipulated for the end with a left-hand thread.