



**SAH**  
Stahlwerk Annahütte

## Katalog | *catalogue*

SAS 500 / 550 | SAS 550 / 620 | *grade 75*

SAS 555 / 700 | *grade 80*

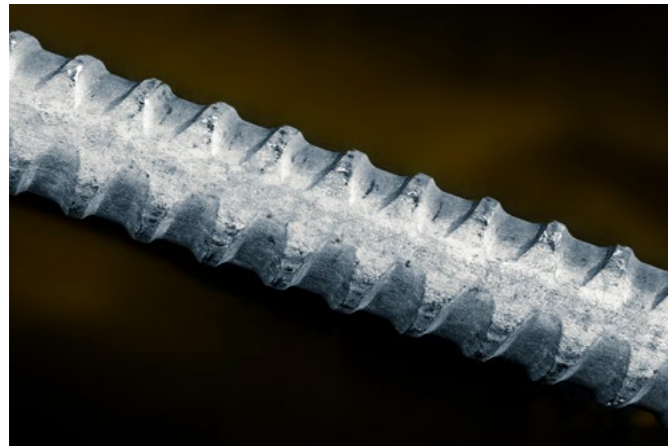
SAS 670 / 800 | *grade 97*

SAS 950 / 1050 | SAS 835 / 1035 | *grade 150*

### **SAS** SYSTEMS



**MAX AICHER**  
UNTERNEHMENSGRUPPE



SAS Gewindestab warmgewalzt, Rippenstahl - linksgängig | SAS thread bar hot rolled, ribbed - left hand thread

SAS 500 / 550 Ø 12 - 50 mm + 75 mm | grade 75

SAS 555 / 700 Ø 57,5 mm + 63,5 mm | grade 80

Ø <sub>NENN</sub> / Ø <sub>NOM</sub>	[mm]	12	14	16	20	25	28	32	36	40	43	50	57,5	63,5	75
max d <sub>A</sub>	[mm]	14	16	19	23	29	32	36	41	45	48	56	63	70	82
c	[mm]	7	7,5	8	10	12,5	14	16	18	20	21,5	26	20	21	24
f <sub>yk</sub> (f <sub>0,2k</sub> ) / f <sub>tk</sub> / A <sub>gt</sub> <sup>1)</sup>		500 N/mm <sup>2</sup> / 550 N/mm <sup>2</sup> / ≥ 6%											555 N/mm <sup>2</sup> 700 N/mm <sup>2</sup> ≥ 5%	500 N/mm <sup>2</sup> 550 N/mm <sup>2</sup> ≥ 5%	
F <sub>yk</sub> (F <sub>0,2k</sub> )	[kN]	57	77	100	160	245	310	405	510	630	726	980	1441	1760	2209
F <sub>tk</sub>	[kN]	62	85	110	175	270	340	440	560	690	799	1080	1818	2215	2430
A	[mm <sup>2</sup> ]	113	154	201	314	491	616	804	1020	1260	1452	1960	2597	3167	4418
G	[kg/m]	0,89	1,21	1,58	2,47	3,85	4,83	6,31	7,99	9,87	11,40	15,40	20,38	24,86	34,68

SAS 550 / 620 Ø 12 - 50 mm | grade 75

Ø <sub>NENN</sub> / Ø <sub>NOM</sub>	[mm]	12	14	16	20	25	26	28	30	32	36	40	43	50
max d <sub>A</sub>	[mm]	14	16	19	23	29	30	32	34	36	41	45	48	56
c	[mm]	7	7,5	8	10	12,5	13	14	15	16	18	20	21,5	26
f <sub>yk</sub> (f <sub>0,2k</sub> ) / A <sub>gt</sub> <sup>1)</sup>		550 N/mm <sup>2</sup> / 620 N/mm <sup>2</sup> ≥ 6%												
F <sub>yk</sub> (F <sub>0,2k</sub> )	[kN]	62	85	110	175	270	290	340	390	440	560	690	799	1080
F <sub>tk</sub> = 1,08 x F <sub>yk</sub>	[kN]	67	92	119	189	292	313	367	421	475	605	745	862	1166
A	[mm <sup>2</sup> ]	113	154	201	314	491	531	616	707	804	1020	1260	1452	1960
G	[kg/m]	0,89	1,21	1,58	2,47	3,85	4,17	4,83	5,55	6,31	7,99	9,87	11,40	15,40

<sup>1)</sup> Prozentuale Gesamtdehnung bei Höchstlast | Percentage total elongation at maximum force  
Die Gewichtsangaben von Stab und Zubehör sind Mittelwerte. Die tatsächlichen Gewichte können aufgrund von Fertigungstoleranzen abweichen.  
Weight specifications of bar and accessories are average values. The actual values may deviate due to fabrication tolerances.

SAS SYSTEMS

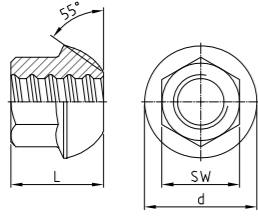
Ø [mm]	Ankermutter anchor nut		Ankermutter lang anchor nut long		Ankermutter mit Bund anchor nut with flange		Ankerplatte gerade anchor plate flat	
	SW x L x d [mm]	[kg]	SW x L [mm]	[kg]	SW x L x d [mm]	[kg]	a x t x d [mm]	[kg]
	T 2002 - Ø		T 2024 - Ø		T 2163 - Ø		T 2139 - Ø	
12	22 x 25	0,10	22 x 35	0,08	-	-	50 x 8 x 16	0,14
14	27 x 35	0,12	27 x 45	0,16	-	-	50 x 8 x 18	0,14
16	32 x 40	0,20	32 x 50	0,25	-	-	50 x 8 x 20	0,15
20	36 x 45	0,27	32 x 65	0,25	-	-	70 x 12 x 25	0,42
25	41 x 50	0,34	41 x 75	0,52	-	-	90 x 15 x 30	0,87
26	46 x 50	0,45	41 x 80	0,56	-	-	100 x 15 x 33	1,08
28	46 x 55	0,48	41 x 85	0,48	-	-	100 x 15 x 33	1,08
30	50 x 60	0,65	46 x 90	0,77	-	-	120 x 20 x 36	2,10
32	55 x 60	0,78	50 x 90	0,90	-	-	120 x 20 x 40	2,06
36	60 x 65	1,00	55 x 95	1,17	-	-	150 x 30 x 44	4,94
40	65 x 70	1,19	60 x 100	1,30	65 x 70 x 85	1,20	150 x 30 x 47	4,89
43	70 x 75	1,51	-	-	70 x 80 x 90	1,81	160 x 40 x 50	7,42
50	79 x 90	2,17	79 x 120	3,00	80 x 85 x 100	2,35	190 x 45 x 58	11,82
57,5	90 x 110 x 102	4,13	-	-	90 x 100 x 110	3,50	220 x 50 x 67	17,61
63,5	100 x 115 x 108	4,72	-	-	100 x 115 x 125	4,90	245 x 50 x 70	22,05
75	100 x 100 x 108	2,99	-	-	100 x 120 x 115	4,15	275 x 65 x 88	35,48

SAS SYSTEMS

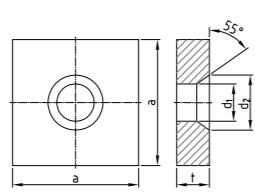
Ø [mm]	Ankerplatte gerade klein anchor plate flat small		Kontermutter lang lock nut long		Kontermutter kurz lock nut short		Ankerstück anchor piece	
	a x t x d [mm]	[kg]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]
	T 2008 - Ø		T 2003 - Ø		T 2040 - Ø		T 2073 - Ø	
12	40 x 6 x 16	0,06	19 x 20	0,04	19 x 13	0,03	-	-
14	-	-	27 x 25	0,09	27 x 15	0,06	-	-
16	50 x 8 x 20	0,10	32 x 30	0,15	32 x 20	0,10	30 x 33 x 50	0,25
20	60 x 10 x 25	0,16	32 x 40	0,16	32 x 20	0,09	36 x 40 x 70	0,43
25	70 x 12 x 30	0,40	41 x 40	0,25	41 x 20	0,14	41 x 45 x 70	0,50
26	-	-	41 x 45	0,35	41 x 25	0,20	41 x 50 x 90	0,70
28	85 x 14 x 33	0,70	41 x 45	0,26	41 x 25	0,15	46 x 50 x 90	0,77
30	-	-	50 x 50	0,55	50 x 30	0,35	50 x 55 x 95	1,00
32	100 x 15 x 38	1,00	50 x 50	0,47	50 x 30	0,30	50 x 60 x 100	1,40
36	-	-	55 x 55	0,85	55 x 30	0,40	60 x 65 x 110	1,64
40	120 x 17 x 47	1,69	60 x 65	0,85	60 x 35	0,45	65 x 70 x 120	2,10
43	-	-	70 x 65	1,31	70 x 40	0,80	70 x 80 x 130	2,43
50	150 x 20 x 58	3,12	79 x 80	2,10	79 x 50	1,30	80 x 85 x 150	3,88
57,5	-	-	90 x 80 x 102	2,87	90 x 60 x 102	2,08	90 x 100 x 175	6,09
63,5	-	-	90 x 115 x 102	3,74	90 x 75 x 102	2,28	100 x 115 x 190	7,38
75	-	-	100 x 80 x 108	2,37	100 x 80 x 108	2,37	-	-

SAS SYSTEMS

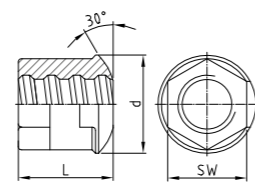
Kugelbundmutter 55°  
domed nut 55°



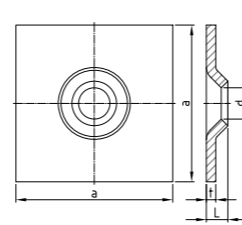
Ankerplatte Konus 55°  
anchor plate cone 55°



Kalottenmutter 30°  
dome nut 30°



Ankerplatte ballig 30°/55°  
domed washer 30°/55°



Ø [mm]      SW x L x d [mm]      [kg]      a x t x d<sub>1</sub> x d<sub>2</sub> [mm]      [kg]      SW x L x d [mm]      [kg]      a x L x t x d [mm]      [kg]

T 2044 - Ø

T 2011 - Ø

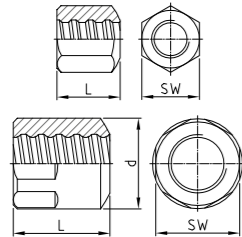
T 2944 - Ø

T 2132 - Ø

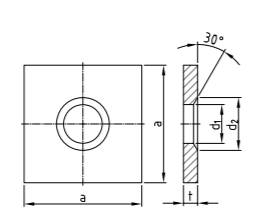
12	-	-	-	-	-	-	-	
14	-	-	-	-	-	-	-	
16	27 x 33 x 35	0,11	60 x 10 x 25 x 33	0,24	-	150 x 25 x 10 x 22	1,77	
20	36 x 42 x 49	0,30	70 x 12 x 30 x 44	0,37	36 x 40 x 51	0,30	150 x 25 x 10 x 26	1,76
25	41 x 45 x 55	0,35	90 x 15 x 35 x 49	0,81	41 x 45 x 54	0,32	150 x 25 x 10 x 34	1,74
26	-	-	-	-	-	-	-	
28	41 x 54 x 62	0,45	100 x 20 x 40 x 54	1,33	41 x 50 x 58	0,38	200 x 25 x 10 x 34	3,11
30	-	-	-	-	-	-	-	
32	46 x 57 x 70	0,60	120 x 20 x 52 x 60	1,91	50 x 60 x 62	0,70	200 x 27 x 12 x 40	3,70
36	-	-	-	-	-	-	-	
40	60 x 70 x 88	1,50	150 x 30 x 65 x 76	4,48	65 x 70 x 85	1,79	200 x 42 x 20 x 53	5,90
43	70 x 80 x 100	2,12	160 x 40 x 75 x 93	6,54	-	-	-	-
50	80 x 85 x 107	2,57	190 x 45 x 83 x 96	10,78	80 x 85 x 100	2,96	-	-
57,5	90 x 100 x 120	3,79	220 x 50 x 92 x 110	16,25	-	-	-	-
63,5	100 x 115 x 144	5,51	245 x 50 x 104 x 121	20,09	-	-	-	-
75	100 x 120 x 160	6,62	275 x 65 x 118 x 145	32,60	-	-	-	-

SAS SYSTEMS

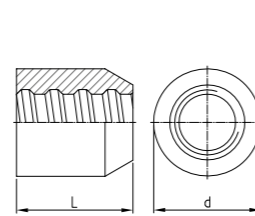
Ankermutter ballig 30°  
bull nose nut 30°



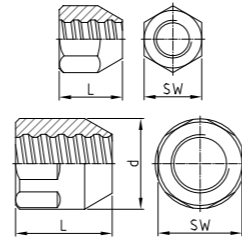
Ankerplatte Konus 30°  
anchor plate cone 30°



Anschweißstück  
welding bolt



Anschweißstück SW  
welding bolt hexagonal



Ø [mm]      SW x L x d [mm]      [kg]      a x t x d<sub>1</sub> x d<sub>2</sub> [mm]      [kg]      d x L [mm]      [kg]      SW x L x d [mm]      [kg]

T 2963 - Ø

T 1928 - Ø

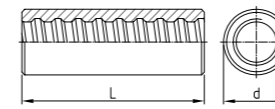
T 3022 - Ø

T 3026 - Ø

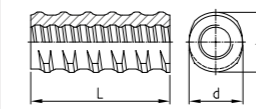
12	22 x 25	0,05	50 x 8 x 16 x 26	0,14	30 x 30	0,12	32 x 40	0,21
14	27 x 35	0,12	50 x 8 x 18 x 28	0,14	36 x 40	0,24	36 x 50	0,34
16	32 x 40	0,18	60 x 8 x 20 x 30	0,20	40 x 45	0,33	41 x 55	0,48
20	36 x 45	0,25	70 x 12 x 25 x 35	0,41	45 x 50	0,44	46 x 65	0,70
25	41 x 50	0,33	90 x 15 x 30 x 40	0,87	50 x 55	0,55	50 x 75	0,89
26	46 x 50	0,42	100 x 15 x 33 x 45	1,07	50 x 55	0,53	50 x 75	0,89
28	46 x 55	0,47	100 x 15 x 33 x 45	1,07	55 x 60	0,73	55 x 85	1,21
30	50 x 60	0,61	120 x 20 x 36 x 46	2,09	60 x 65	1,02	60 x 90	1,20
32	55 x 60	0,75	120 x 20 x 40 x 50	2,06	60 x 65	0,91	60 x 90	1,20
36	60 x 65	0,94	150 x 30 x 44 x 59	4,92	70 x 70	1,45	70 x 95	1,20
40	65 x 70	1,15	150 x 30 x 47 x 60	4,88	80 x 80	2,11	79 x 100	2,66
43	70 x 75	1,47	160 x 40 x 58 x 78	7,16	90 x 90	3,07	80 x 100 x 90	3,11
50	79 x 90	2,15	190 x 45 x 58 x 75	11,79	90 x 90	2,77	90 x 120 x 100	4,51
57,5	90 x 110 x 102	3,92	220 x 50 x 67 x 87	17,56	110 x 110	5,29	100 x 120 x 110	5,44
63,5	100 x 115 x 108	4,65	245 x 50 x 70 x 100	21,92	114 x 120	5,88	100 x 120 x 114	5,25
75	100 x 100 x 108	2,90	275 x 65 x 88 x 110	35,40	-	-	-	-

SAS SYSTEMS

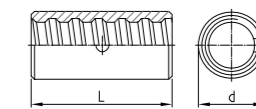
Muffe standard  
coupler standard



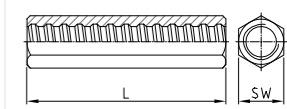
Gewindemuffe  
thread coupler



Kontaktmuffe  
contact coupler



Sechskantmuffe lang  
hexagonal coupler long



Ø [mm]      d x L [mm]      [kg]      d x d<sub>1</sub> x L [mm]      [kg]      d x L [mm]      [kg]      SW x L [mm]      [kg]

T 3003 - Ø

T 3087 - Ø

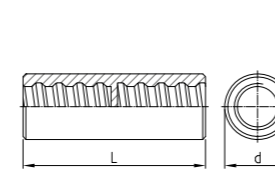
T 3006 - Ø

T 3010 - Ø

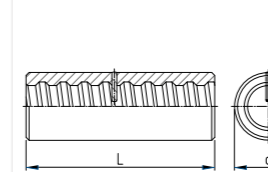
12	22 x 60	0,11	-	-	-	-	22 x 80	0,20
14	27 x 75	0,22	-	-	-	-	27 x 100	0,34
16	32 x 90	0,37	26,5 x 31 x 90	0,27	27 x 65	0,17	32 x 120	0,60
20	36 x 105	0,52	32 x 37 x 105	0,40	32 x 70	0,25	32 x 140	0,55
25	40 x 115	0,62	40 x 46 x 115	0,68	36 x 80	0,30	41 x 160	1,10
26	45 x 120	0,80	47 x 53 x 120	1,13	36 x 80	0,30	41 x 170	1,10
28	45 x 125	0,85	47 x 53 x 125	1,09	40 x 85	0,40	41 x 180	1,05
30	50 x 135	1,37	47 x 53 x 135	1,10	45 x 90	0,60	50 x 180	1,75
32	52 x 140	1,32	57 x 64 x 140	1,93	45 x 90	0,50	50 x 180	1,76
36	60 x 150	2,10	57 x 64 x 150	1,78	50 x 120	1,25	60 x 190	2,75
40	65 x 160	2,34	65 x 72 x 160	2,52	54 x 120	0,82	65 x 210	3,67
43	80 x 170	4,49	75 x 82 x 170	3,79	60 x 130	1,19	70 x 220	4,46
50	80 x 200	4,49	-	-	63 x 160	1,09	79 x 240	5,97
57,5	102 x 230	9,54	-	-	83 x 170	3,36	-	-
63,5	102 x 260	9,45	-	-	90 x 200	4,28	-	-
75	108 x 240	8,01	-	-	102 x 210	5,33	-	-

SAS SYSTEMS

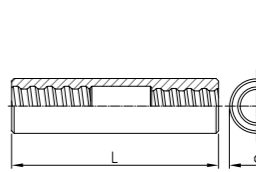
Muffe standard mit Mittelstop  
coupler standard with center stop



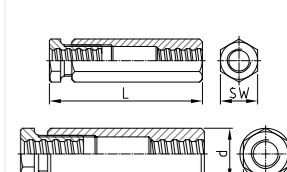
Muffe standard mit Kerbstift  
coupler standard with grooved pin



Reduziermuffe  
reducing coupler



Spannschloss  
turnbuckle



Ø [mm]      d x L [mm]      [kg]      d x L [mm]      [kg]      Ø x d x L [mm]      [kg]      SW x L x d [mm]      [kg]

T 3002 - Ø

T 3043 - Ø

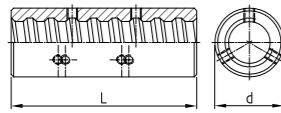
T 3102 - Ø

T 3105 - Ø

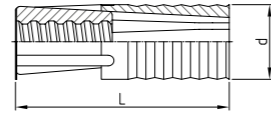
12	22 x 60	0,12	-	-	-	-	32 x 126	0,65
14	27 x 75	0,23	-	-	-	-	32 x 138	0,66
16	32 x 90	0,38	32 x 90	0,40	16/14 x 32 x 120	0,55	36 x 150	0,92
20	36 x 105	0,54	36 x 105	0,53	20/16 x 36 x 130	0,65	41 x 175	1,28
25	40 x 115	0,65	40 x 115	0,62	25/20 x 40 x 150	0,84	46 x 190	1,64
26	45 x 120	0,83	45 x 120	0,91	26/20 x 40 x 155	0,88	50 x 205	2,17
28	45 x 125	0,89	45 x 125	0,86	28/26 x 45 x 170	1,20	50 x 205	2,04
30	50 x 135	1,41	50 x 135	1,21	30/28 x 50 x 180	1,62	60 x 225	3,58
32	52 x 140	1,37	52 x 140	1,32	32/30 x 52 x 185	1,72	60 x 225	3,41
36	-	-	60 x 150	1,96	36/32 x 60 x 205	2,61	70 x 250	5,39
40	-	-	65 x 160	2,38	40/36 x 65 x 215	3,26	79 x 270	7,31
43	-	-	80 x 170	4,49	43/40 x 80 x 225	5,93	90 x 290 x 105	13,46
50	-	-	80 x 200	4,55	50/40 x 80 x 240	6,00	100 x 310 x 115	16,89
57,5	-	-	102 x 230	9,54	57,5/50 x 90 x 280	7,99	100 x 340 x 125	20,37
63,5	-	-	102 x 260	9,45	63,5/57,5 x 102 x 310	11,56	100 x 395 x 130	24,11
75	-	-	108 x 240	8,08	75/63,5 x 110 x 290	11,63	110 x 370 x 130	19,67

SAS SYSTEMS

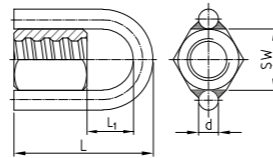
Muffe mit Drehsicherung  
coupler with set screws



Spreizdübel  
expansion shell



Ringmutter  
ring nut



Ø [mm]      d x L [mm]      [kg]      d x L [mm]      [kg]      SW x L x L<sub>1</sub> x d [mm]      [kg]

T 3020 - Ø

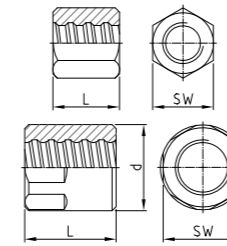
T 2136 - Ø

T 2927 - Ø

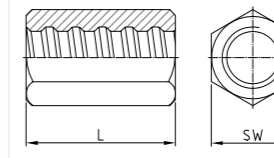
12	-	-	-	-	-	-
14	-	-	-	-	32 x 110 x 54 x 16	0,58
16	-	-	32 x 92	0,22	32 x 110 x 54 x 16	0,57
20	-	-	39 x 109	0,44	36 x 120 x 59 x 16	0,67
25	-	-	49 x 121	0,60	41 x 130 x 64 x 16	0,77
26	-	-	-	-	-	-
28	45 x 125	0,82	49 x 121	0,60	46 x 145 x 74 x 16	0,97
30	-	-	-	-	-	-
32	52 x 140	1,35	59 x 149	1,00	55 x 165 x 89 x 16	1,34
36	60 x 150	1,94	-	-	-	-
40	65 x 160	2,35	-	-	65 x 193 x 103 x 20	2,10
43	80 x 170	4,41	-	-	70 x 200 x 105 x 20	2,56
50	80 x 200	4,50	-	-	79 x 232 x 122 x 20	3,29
57,5	102 x 230	9,45	-	-	90 x 255 x 125 x 20	5,49
63,5	102 x 260	9,41	-	-	100 x 279 x 144 x 20	6,07
75	108 x 240	8,02	-	-	100 x 279 x 159 x 20	4,43

SAS SYSTEMS

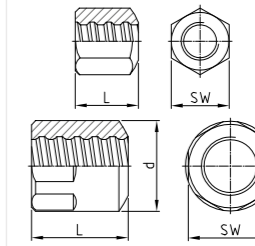
Ankermutter EP gerade  
anchor nut EP flat



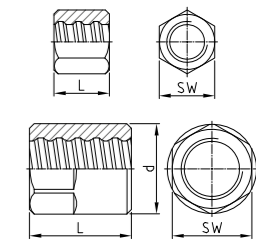
Ankermutter EP lang  
anchor nut EP long



Ankermutter EP ballig 30°  
bull nose nut EP 30°



Kontermutter EP lang  
lock nut EP long



Ø [mm]      SW x L x d [mm]      [kg]      SW x L [mm]      [kg]      SW x L x d [mm]      [kg]      SW x L x d [mm]      [kg]

T 2002 - Ø EP

T 2024 - Ø EP

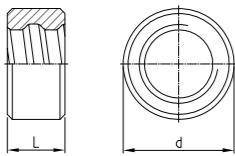
T 2963 - Ø EP

T 2003 - Ø EP

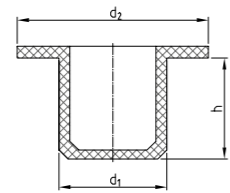
12	22 x 30	0,06	22 x 35	0,08	22 x 30	0,06	19 x 25	0,05
14	27 x 40	0,14	27 x 45	0,16	27 x 40	0,14	27 x 30	0,12
16	32 x 50	0,25	32 x 50	0,25	32 x 50	0,24	32 x 35	0,18
20	36 x 55	0,31	32 x 65	0,26	36 x 55	0,31	32 x 45	0,19
25	41 x 60	0,40	41 x 75	0,51	41 x 60	0,40	41 x 50	0,35
26	46 x 60	0,57	41 x 80	0,52	-	-	41 x 55	0,36
28	46 x 65	0,55	41 x 85	0,49	46 x 65	0,55	41 x 55	0,31
30	50 x 75	0,79	46 x 90	0,71	-	-	50 x 60	0,63
32	55 x 75	0,97	50 x 90	0,87	55 x 75	0,96	50 x 60	0,57
36	60 x 80	1,22	55 x 95	1,08	60 x 80	1,18	55 x 65	1,01
40	65 x 85	1,43	60 x 100	1,31	65 x 85	1,43	60 x 75	1,00
43	70 x 90	1,81	-	-	70 x 90	1,77	70 x 75	1,51
50	79 x 105	2,71	79 x 120	2,97	79 x 105	2,62	79 x 95	2,50
57,5	90 x 125 x 102	4,72	-	-	90 x 125 x 102	4,53	90 x 100 x 102	3,68
63,5	100 x 130 x 108	5,53	-	-	100 x 130 x 108	5,30	90 x 130 x 102	4,26
75	100 x 115 x 108	3,48	-	-	100 x 115 x 108	3,38	100 x 100 x 108	2,97

SAS SYSTEMS

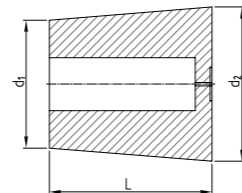
Haltering  
fix ring



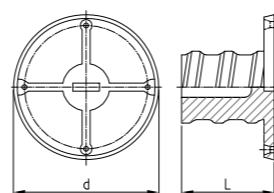
Verschlussstöpsel  
inner cap



Aussparungskegel  
recess cone



Nagelplatte  
nail plate



Ø [mm]      d x L [mm]      [kg]      d<sub>1</sub> x d<sub>2</sub> x h [mm]      [kg]      d<sub>1</sub> x d<sub>2</sub> x L [mm]      [kg]      d x L [mm]      [kg]

T 5003 - Ø

T 5025 - Ø

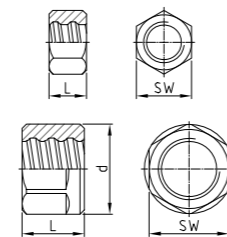
T 5050 - Ø

T 5979 - Ø

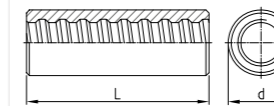
12	-	-	12 x 19 x 7	0,01	36 x 42 x 40	0,02	36 x 20	0,01
14	-	-	14 x 19 x 7	0,01	41 x 49 x 49	0,03	42 x 20	0,01
16	-	-	16 x 25 x 9	0,01	48 x 58 x 64	0,05	48 x 25	0,01
20	-	-	20 x 25 x 9	0,01	50 x 62 x 74	0,07	48 x 30	0,01
25	-	-	25 x 30 x 9	0,01	63 x 76 x 78	0,10	58 x 35	0,02
26	-	-	26 x 31 x 9	0,01	-	-	58 x 35	0,02
28	-	-	28 x 35 x 9	0,01	74 x 89 x 89	0,14	58 x 40	0,02
30	-	-	30 x 35 x 9	0,01	-	-	68 x 45	0,03
32	-	-	32 x 37 x 9	0,01	77 x 93 x 98	0,14	68 x 45	0,03
36	50 x 25	0,15	36 x 42 x 9	0,01	-	-	-	-
40	55 x 25	0,18	40 x 48 x 10	0,01	-	-	-	-
43	65 x 25	0,33	-	-	-	-	-	-
50	65 x 30	0,25	50 x 58 x 10	0,01	-	-	-	-
57,5	81 x 35	0,60	-	-	-	-	-	-
63,5	89 x 40	0,85	64 x 74 x 10	0,01	-	-	-	-
75	102 x 40	1,01	-	-	-	-	-	-

SAS SYSTEMS

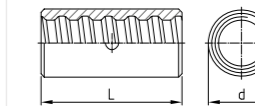
Kontermutter EP kurz  
lock nut EP short



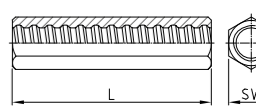
Muffe EP standard  
coupler EP standard



Kontaktmuffe EP  
contact coupler EP



Sechskantmuffe EP lang  
hexagonal coupler EP long



Ø [mm]      SW x L x d [mm]      [kg]      d x L [mm]      [kg]      d x L [mm]      [kg]      SW x L [mm]      [kg]

T 2040 - Ø EP

T 3003 - Ø EP

T 3006 - Ø EP

T 3010 - Ø EP

12	19 x 20	0,03	22 x 75	0,15	-	-	22 x 80	0,17
14	27 x 25	0,09	27 x 90	0,32	-	-	27 x 100	0,34
16	32 x 30	0,15	32 x 105	0,46	-	-	32 x 120	0,60
20	32 x 40	0,17	36 x 120	0,59	32 x 70	0,25	32 x 140	0,56
25	41 x 40	0,28	40 x 135	0,71	36 x 80	0,30	41 x 160	1,10
26	41 x 45	0,29	45 x 140	1,06	36 x 80	0,24	41 x 170	1,11
28	41 x 45	0,41	45 x 145	0,97	40 x 85	0,40	41 x 200	1,22
30	50 x 50	0,52	50 x 155	1,38	45 x 90	0,53	50 x 180	1,89
32	50 x 50	0,50	52 x 160	1,49	45 x 90	0,50	50 x 180	1,75
36	55 x 55	0,73	60 x 170	2,30	50 x 120	0,74	60 x 190	2,90
40	60 x 65	0,85	65 x 190	3,07	54 x 120	0,90	65 x 210	3,66
43	70 x 65	1,30	80 x 200	5,28	60 x 130	1,18	70 x 220	4,44
50	79 x 80	2,10	80 x 235	5,60	64 x 160	1,35	79 x 240	5,95
57,5	90 x 80 x 102	2,85	102 x 260	10,75	80 x 170	2,90	-	-
63,5	90 x 85 x 102	2,62	102 x 300	10,87	90 x 200	4,25	-	-
75	100 x 80 x 108	2,36	108 x 270	9,00	102 x 210	5,30	-	-



SAS Gewindestab warmgewalzt, Rippenstahl - rechtsgängig | SAS thread bar hot rolled, ribbed - right hand thread

SAS 670 / 800 Ø 18 - 75mm | grade 97

Ø <sub>NENN</sub> / Ø <sub>NOM</sub>	[mm]	18	22	25	28	30	35	43	50	57,5	63,5	75
max d <sub>A</sub>	[mm]	21	25	28	32	34	40	48	55	63	70	82
c	[mm]	8	8	10	11	11	14	17	18	20	21	24
f <sub>yk</sub> (f <sub>0,2k</sub> ) / f <sub>tk</sub> / A <sub>gt</sub> <sup>1)</sup>		670 N/mm <sup>2</sup> / 800 N/mm <sup>2</sup> / ≥ 5%										
F <sub>yk</sub> (F <sub>0,2k</sub> )	[kN]	170	255	329	413	474	645	973	1315	1740	2122	2960
F <sub>tk</sub>	[kN]	204	304	393	493	565	770	1162	1570	2077	2534	3535
A	[mm <sup>2</sup> ]	254	380	491	616	707	962	1452	1963	2597	3167	4418
G	[kg/m]	2,00	2,98	3,85	4,83	5,55	7,55	11,40	15,40	20,38	24,86	34,68

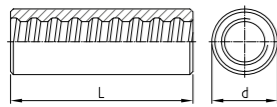
<sup>1)</sup> Prozentuale Gesamtdehnung bei Höchstlast | Percentage total elongation at maximum force  
Die Gewichtsangaben sind Mittelwerte. Die tatsächlichen Gewichte können aufgrund von Fertigungstoleranzen abweichen.  
Weight specifications are average values. The actual values may deviate due to fabrication tolerances.

Ø [mm]	SW x L x d [mm]	[kg]	Ankerplatte Konus 55° anchor plate cone 55°		Ankermutter anchor nut		Ankerplatte gerade anchor plate flat			
			a x t x d <sub>1</sub> x d <sub>2</sub> [mm]	[kg]	SW x L x d [mm]	[kg]	a x t x d [mm]	[kg]	a x t x d [mm]	[kg]
			TR 2001 - Ø	TR 2011 - Ø	TR 2002 - Ø	TR 2138 - Ø	TR 2139 - Ø			
18	32 x 35 x 43	0,18	100 x 25 x 27 x 39	1,83	36 x 45	0,29	100 x 20 x 23	1,51	100 x 25 x 23	1,88
22	36 x 45 x 53	0,27	110 x 30 x 32 x 47	2,62	41 x 50	0,39	110 x 25 x 27	2,26	110 x 30 x 27	2,72
25	41 x 50 x 60	0,47	125 x 30 x 35 x 53	3,40	46 x 55	0,53	110 x 25 x 30	2,20	115 x 30 x 30	2,95
28	46 x 55 x 67	0,62	135 x 35 x 40 x 59	4,59	50 x 60	0,67	115 x 30 x 34	2,90	120 x 30 x 34	3,18
30	50 x 60 x 71	0,66	145 x 35 x 40 x 63	5,32	55 x 65	0,90	130 x 30 x 36	3,74	130 x 35 x 36	4,36
35	60 x 70 x 83	1,40	170 x 40 x 47 x 73	8,36	65 x 70	1,41	150 x 35 x 42	5,80	150 x 40 x 42	6,63
43	70 x 85 x 102	2,22	210 x 50 x 58 x 90	15,96	79 x 90	2,62	185 x 45 x 50	11,40	185 x 55 x 50	13,93
50	80 x 100 x 116	3,44	240 x 55 x 70 x 110	22,59	79 x 100	2,53	215 x 50 x 60	17,03	215 x 60 x 60	20,44
57,5	90 x 115 x 137	5,69	275 x 60 x 75 x 119	32,77	90 x 120 x 102	4,53	250 x 55 x 67	25,46	245 x 65 x 67	28,83
63,5	100 x 125 x 151	7,52	300 x 65 x 82 x 131	42,19	100 x 145 x 114	6,97	265 x 60 x 74	31,05	270 x 70 x 74	37,70
75	120 x 150 x 178	12,94	325 x 70 x 100 x 159	51,89	100 x 130 x 108	3,86	320 x 70 x 86	53,10	325 x 70 x 86	54,85

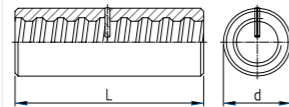
Ø [mm]	SW x L x d [mm]	[kg]	Ankerplatte ballig 30° domed washer 30°		Ankermutter ballig 30° bull nose nut 30°		Ankerplatte Konus 30° anchor plate cone 30°	
			a x L x t x d [mm]	[kg]	SW x L x d [mm]	[kg]	a x t x d <sub>1</sub> x d <sub>2</sub> [mm]	[kg]
			TR 2944 - Ø	TR 2132 - Ø	TR 2963 - Ø	TR 1928 - Ø		
18	30 x 35 x 46	0,20	150 x 25 x 10 x 26	1,76	36 x 45	0,28	70 x 10 x 25 x 35	0,34
22	36 x 40 x 51	0,29	150 x 25 x 10 x 34	1,74	41 x 50	0,39	90 x 12 x 30 x 40	0,69
25	41 x 50 x 58	0,45	200 x 25 x 10 x 34	3,11	46 x 55	0,53	100 x 12 x 33 x 45	0,85
28	46 x 60 x 62	0,67	200 x 27 x 12 x 40	3,70	50 x 60	0,66	120 x 20 x 40 x 50	2,06
30	46 x 60 x 62	0,65	200 x 27 x 12 x 40	3,70	55 x 65	0,82	120 x 20 x 40 x 50	2,06
35	-	-	-	-	65 x 70	1,35	150 x 30 x 47 x 60	4,88
43	-	-	-	-	79 x 90	2,50	190 x 45 x 58 x 75	11,79
50	-	-	-	-	79 x 100	2,46	215 x 50 x 60 x 80	16,99
57,5	-	-	-	-	90 x 120 x 102	4,32	245 x 50 x 70 x 90	22,00
63,5	-	-	-	-	100 x 145 x 114	6,67	280 x 60 x 78 x 100	34,60
75	-	-	-	-	100 x 130 x 108	3,93	325 x 70 x 88 x 120	54,52

SAS SYSTEMS

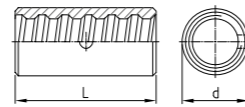
Muffe standard  
coupler standard



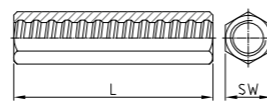
Muffe standard mit Kerbstift  
coupler standard with grooved pin



Kontaktmuffe  
contact coupler



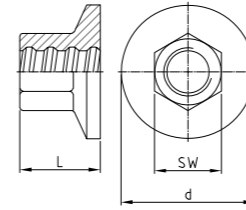
Sechskantmuffe lang  
hexagonal coupler long



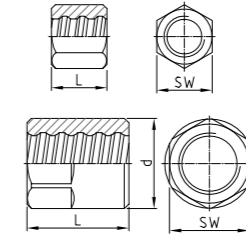
Ø [mm]	d x L [mm]	[kg]	d x L [mm]	[kg]	d x L [mm]	[kg]	SW x L [mm]	[kg]
TR 3003 - Ø		TR 3043 - Ø		TR 3006 - Ø		TR 3010 - Ø		
18	36 x 100	0,57	36 x 100	0,57	27 x 70	0,16	36 x 120	0,78
22	40 x 110	0,55	40 x 110	0,71	32 x 75	0,22	41 x 135	1,08
25	45 x 130	1,05	45 x 130	1,05	40 x 80	0,43	46 x 150	1,49
28	50 x 140	1,36	50 x 140	1,39	45 x 90	0,67	50 x 170	1,96
30	55 x 150	1,84	55 x 150	1,85	45 x 90	0,60	55 x 185	2,63
35	65 x 180	3,16	65 x 180	3,17	50 x 120	0,82	60 x 210	3,36
43	80 x 200	5,42	80 x 200	5,35	65 x 160	2,08	79 x 245	7,27
50	90 x 210	6,92	90 x 210	6,92	70 x 170	2,23	-	-
57,5	102 x 250	10,37	102 x 250	10,38	83 x 180	3,55	-	-
63,5	114 x 300	15,85	114 x 300	15,86	90 x 200	4,24	-	-
75	108 x 260	8,98	108 x 260	8,76	102 x 230	5,83	-	-

SAS SYSTEMS

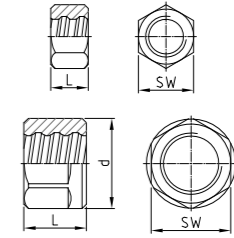
Ankerstück  
anchor piece



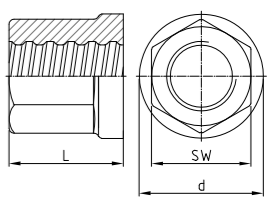
Kontermutter lang  
lock nut long



Kontermutter kurz  
lock nut short



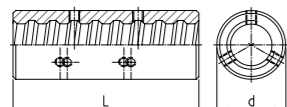
Ankermutter mit Bund  
anchornut with flange



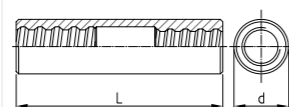
Ø [mm]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]
TR 2073 - Ø		TR 2003 - Ø		TR 2040 - Ø		TR 2163 - Ø		
18	32 x 35 x 55	0,28	30 x 40	0,16	30 x 22	0,10	36 x 45 x 42	0,31
22	36 x 45 x 65	0,43	36 x 45	0,25	36 x 22	0,12	41 x 50 x 47	0,43
25	41 x 50 x 75	0,62	41 x 50	0,37	41 x 22	0,16	46 x 55 x 53	0,59
28	46 x 55 x 85	0,85	46 x 55	0,50	46 x 30	0,26	50 x 65 x 58	0,80
30	50 x 60 x 90	1,03	50 x 60	0,67	50 x 30	0,31	55 x 65 x 64	0,98
35	60 x 70 x 105	1,66	55 x 65	0,78	55 x 40	0,47	65 x 70 x 75	1,51
43	70 x 85 x 130	2,74	70 x 80	1,60	70 x 50	1,00	80 x 90 x 92	2,99
50	80 x 100 x 150	3,63	79 x 90	2,27	79 x 50	1,26	80 x 100 x 92	2,84
57,5	90 x 115 x 175	6,96	90 x 100 x 102	3,71	90 x 60 x 102	2,04	90 x 120 x 102	4,15
63,5	100 x 125 x 190	8,78	100 x 115 x 114	5,45	100 x 70 x 114	3,07	100 x 145 x 114	6,23
75	120 x 150 x 230	15,03	100 x 120 x 108	4,20	100 x 80 x 108	2,70	-	-

SAS SYSTEMS

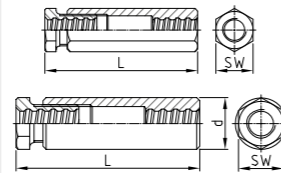
Muffe mit Drehsicherung  
coupler with set screws



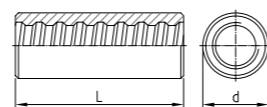
Reduziermuffe  
reducing coupler



Spannschloss  
turnbuckle



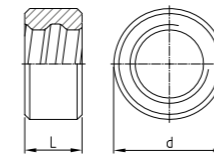
Muffe vergütet  
coupler tempered



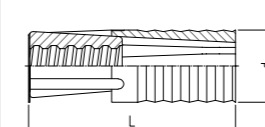
Ø [mm]	d x L [mm]	[kg]	Ø x d x L [mm]	[kg]	SW x L x d [mm]	[kg]	d x L [mm]	[kg]
TR 3020 - Ø		TR 3102 - Ø		TR 3105 - Ø		TR 3927 - Ø		
18	36 x 100	0,56	-	-	41 x 175	1,34	-	-
22	40 x 110	0,70	22/18 x 40 x 145	1,00	46 x 190	1,78	36 x 90	0,41
25	45 x 130	1,03	25/22 x 45 x 160	1,40	55 x 205	2,94	38 x 100	0,45
28	50 x 140	1,37	28/25 x 50 x 180	2,00	60 x 225	3,74	42 x 120	0,64
30	55 x 150	1,85	30/28 x 55 x 195	2,50	65 x 260	5,11	50 x 130	1,18
35	65 x 180	3,13	35/30 x 60 x 215	3,00	79 x 275	8,27	55 x 150	1,52
43	80 x 200	5,40	43/35 x 80 x 250	5,50	90 x 330 x 105	15,14	65 x 170	2,26
50	90 x 210	6,82	50/43 x 85 x 270	7,68	100 x 350 x 115	19,04	75 x 180	3,17
57,5	102 x 250	10,00	57,5/50 x 100 x 295	11,94	100 x 405 x 125	24,46	85 x 220	4,92
63,5	114 x 300	14,70	63,5/57,5 x 110 x 305	14,89	100 x 425 x 120	21,56	95 x 240	6,81
75	108 x 260	8,90	75/63,5 x 110 x 335	13,24	110 x 460 x 130	25,20	-	-

SAS SYSTEMS

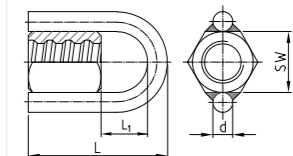
Haltering  
fix ring



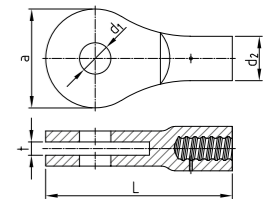
Spreizdübel  
expansion shell



Ringmutter  
ring nut

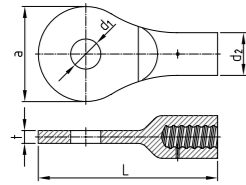


Gabelstück  
fork piece

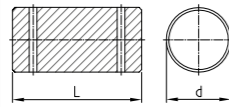


Ø [mm]	d x L [mm]	[kg]	d x L [mm]	[kg]	SW x L x d x L1 [mm]	[kg]	a x L x t x d, x d2 [mm]	[kg]
TR 5003 - Ø		TR 2136 - Ø		TR 2927 - Ø		TR 2090 - Ø EP		
18	-	-	39 x 109	0,44	36 x 115 x 16 x 54	0,68	-	-
22	31 x 20	0,06	49 x 121	0,60	41 x 125 x 16 x 59	0,81	-	-
25	-	-	49 x 121	0,60	46 x 142 x 16 x 74	1,02	-	-
28	45 x 20	0,14	59 x 149	1,00	50 x 155 x 16 x 79	1,19	-	-
30	45 x 20	0,06	59 x 149	1,00	55 x 165 x 16 x 84	1,46	-	-
35	50 x 20	0,13	-	-	65 x 184 x 20 x 94	2,36	167 x 315 x 27 x 53 x 75	7,40
43	65 x 25	0,33	-	-	79 x 220 x 20 x 110	3,78	197 x 384 x 29 x 63 x 92	12,80
50	70 x 30	0,39	-	-	79 x 220 x 20 x 100	3,69	221 x 406 x 35 x 75 x 94	14,75
57,5	81 x 35	0,60	-	-	90 x 270 x 20 x 130	5,97	248 x 454 x 42 x 88 x 96	20,40
63,5	89 x 40	0,85	-	-	100 x 322 x 20 x 157	8,68	298 x 553 x 42 x 98 x 114	34,50
75	102 x 40	1,01	-	-	100 x 279 x 20 x 129	5,30	328 x 627 x 54 x 108 x 116	44,40

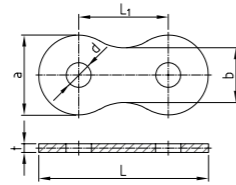
**SAS SYSTEMS** Augenstück  
eye piece



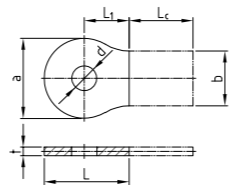
**Bolzen Augenstück**  
bolt eye piece



**Verbindungsflasche Augenstück**  
strap connection eye piece



**Anschweißflasche Augenstück**  
welding plate eye piece

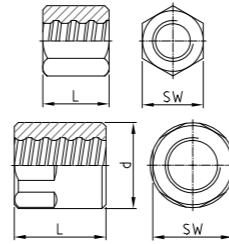


Ø [mm]    a x L x t x d, x d<sub>2</sub> [mm]    [kg]    d x L [mm]    [kg]    a x L x t x d x L<sub>1</sub>, x b [mm]    [kg]    a x L x L<sub>1</sub>, x t x d x b [mm]    [kg+Lc]

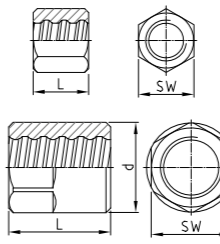
	TR 2080 - Ø EP		TR 2081 - Ø		TR 3080 - Ø		TR 3081 - Ø	
18	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-
35	167 x 315 x 23 x 53 x 75	7,18	50 x 100	1,52	167 x 354 x 18 x 53 x 187 x 114	7,00	167 x 177 x 94 x 18 x 53 x 114 x Lc	3,10 + Lc
43	197 x 384 x 25 x 63 x 92	12,54	60 x 110	2,40	197 x 414 x 20 x 63 x 217 x 134	9,60	197 x 207 x 109 x 20 x 63 x 134 x Lc	4,72 + Lc
50	221 x 406 x 31 x 75 x 92	17,99	72 x 105	3,31	-	-	-	-
57,5	248 x 469 x 38 x 88 x 96	21,57	85 x 145	6,45	248 x 526 x 30 x 88 x 278 x 160	22,00	248 x 263 x 139 x 30 x 88 x 160 x Lc	10,95 + Lc
63,5	298 x 558 x 38 x 98 x 114	33,45	95 x 145	8,02	298 x 626 x 30 x 98 x 328 x 200	31,80	298 x 313 x 164 x 30 x 98 x 200 x Lc	17,95 + Lc
75	328 x 627 x 50 x 108 x 116	46,13	105 x 165	11,21	328 x 691 x 35 x 108 x 363 x 220	45,80	328 x 346 x 182 x 35 x 108 x 220 x Lc	22,75 + Lc

Lc nach Kundenwunsch / Lc on customer request

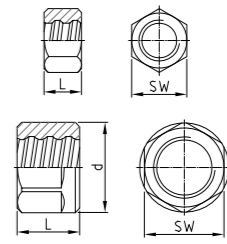
**SAS SYSTEMS** Ankermutter EP gerade  
anchor nut EP flat



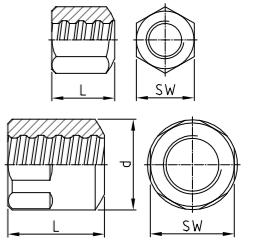
**Kontermutter EP lang**  
lock nut EP long



**Kontermutter EP kurz**  
lock nut EP short



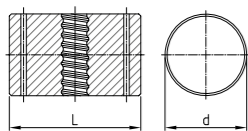
**Ankermutter EP ballig 30°**  
bull nose EP 30°



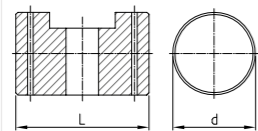
Ø [mm]    SW x L x d [mm]    [kg]    SW x L x d [mm]    [kg]    SW x L x d [mm]    [kg]    SW x L x d [mm]    [kg]

	TR 2002 - Ø EP		TR 2003 - Ø EP		TR 2040 - Ø EP		TR 2963 - Ø EP	
18	36 x 55	0,40	30 x 50	0,20	30 x 40	0,15	36 x 55	0,38
22	41 x 60	0,45	36 x 60	0,33	36 x 45	0,24	41 x 60	0,43
25	46 x 70	0,65	41 x 65	0,44	41 x 50	0,36	46 x 70	0,64
28	50 x 75	0,90	46 x 70	0,59	46 x 55	0,50	50 x 75	0,67
30	55 x 80	1,00	50 x 75	0,77	50 x 60	0,66	55 x 80	0,98
35	65 x 85	1,75	55 x 80	0,94	55 x 65	0,76	65 x 85	1,70
43	79 x 105	3,30	70 x 100	2,00	70 x 80	1,65	79 x 105	3,20
50	79 x 115	2,91	79 x 110	2,78	79 x 90	2,26	79 x 115	2,83
57,5	90 x 140 x 102	5,34	90 x 120 x 102	4,51	90 x 100 x 102	3,54	90 x 140 x 102	5,14
63,5	100 x 170 x 114	8,27	100 x 140 x 114	6,73	100 x 115 x 114	5,44	100 x 170 x 114	7,79
75	100 x 150 x 108	4,67	100 x 140 x 108	4,32	100 x 120 x 108	3,65	100 x 150 x 108	4,60

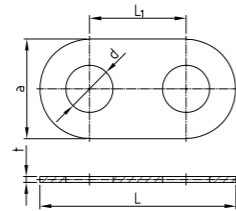
**SAS SYSTEMS** Gelenkmutter  
joint nut



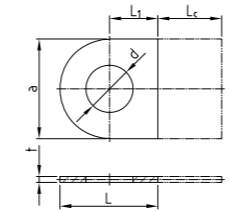
**Gelenkbolzen**  
joint bolt



**Verbindungsflasche Gelenkmutter und Gelenkbolzen**  
strap connection joint bolt & nut



**Anschweißflasche Gelenkmutter und Gelenkbolzen**  
welding plate joint bolt & nut

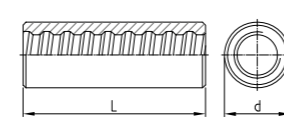


Ø [mm]    d x L [mm]    [kg]    d x L [mm]    [kg]    a x L x t x d x L<sub>1</sub> [mm]    [kg]    a x L x t x d x L<sub>1</sub>, x Lc [mm]    [kg+Lc]

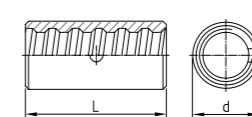
	TR 2020 - Ø		TR 2021 - Ø		TR 2022 - Ø		TR 2023 - Ø	
18	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-
35	120 x 193	16,00	120 x 193	14,60	260 x 512 x 15 x 123 x 252	11,00	260 x 256 x 15 x 123 x 126 x Lc	5,60 + Lc
43	140 x 212	23,80	140 x 212	21,20	320 x 626 x 15 x 145 x 306	16,60	320 x 313 x 15 x 145 x 153 x Lc	8,55 + Lc
50	-	-	-	-	-	-	-	-
57,5	150 x 222	27,00	150 x 222	24,60	420 x 780 x 20 x 155 x 360	40,20	420 x 390 x 20 x 155 x 180 x Lc	19,80 + Lc
63,5	190 x 265	53,40	190 x 265	51,06	460 x 894 x 25 x 195 x 434	59,60	460 x 447 x 25 x 195 x 217 x Lc	30,05 + Lc
75	190 x 279	55,00	190 x 279	52,00	470 x 912 x 35 x 195 x 442	88,40	470 x 456 x 35 x 195 x 221 x Lc	44,20 + Lc

Lc nach Kundenwunsch / Lc on customer request

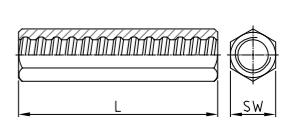
**SAS SYSTEMS** Muffe EP standard  
coupler EP standard



**Kontaktmuffe EP**  
contact coupler EP



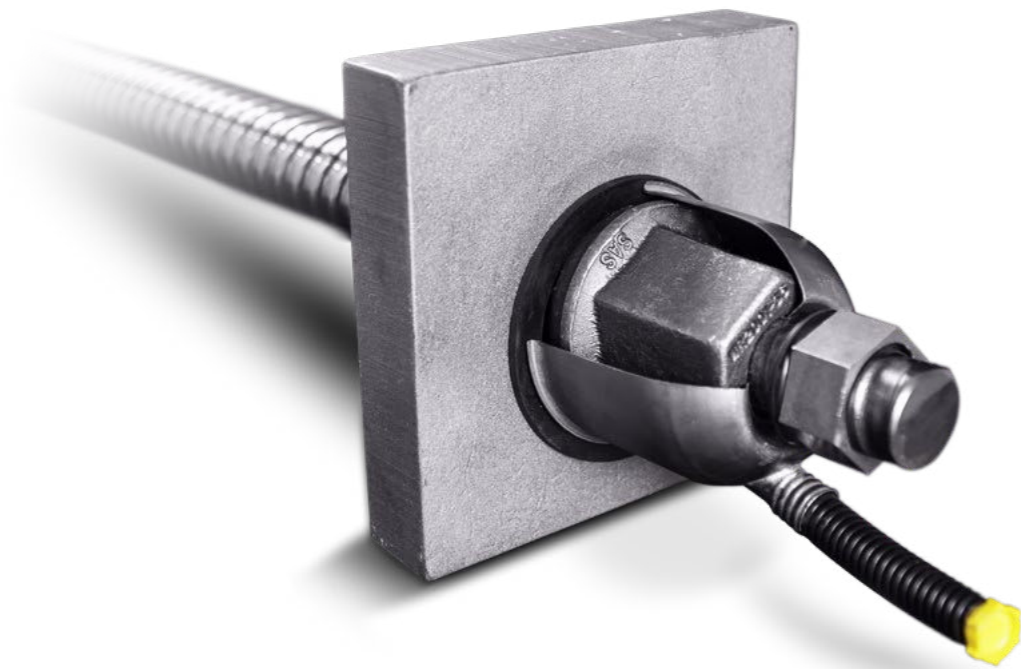
**Sechskantmuffe EP lang**  
hexagonal coupler EP long



Ø [mm]    d x L [mm]    [kg]    d x L [mm]    [kg]    SW x L [mm]    [kg]

	TR 3003 - Ø EP		TR 3006 - Ø EP		TR 3010 - Ø EP	
18	36 x 120	0,69	27 x 70	0,16	36 x 120	0,77
22	40 x 125	0,81	32 x 75	0,25	41 x 135	1,08
25	45 x 150	1,24	40 x 80	0,47	46 x 150	1,49
28	50 x 160	1,56	45 x 90	0,67	50 x 170	1,94
30	55 x 165	2,02	45 x 90	0,60	55 x 185	2,62
35	65 x 190	3,30	50 x 120	0,82	60 x 210	3,34
43	80 x 225	6,10	65 x 160	2,08	79 x 245	7,24
50	90 x 235	7,72	70 x 170	2,21	-	-
57,5	102 x 275	11,36	83 x 180	3,53	-	-
63,5	108 x 285	12,71	90 x 200	4,24	-	-
75	108 x 290	9,70	102 x 230	5,79	-	-

# SAS Spannstahlstäbe | SAS stress bars



SAS Gewindestab warmgewalzt, Rippenstahl - rechtsgängig | SAS thread bar hot rolled, ribbed - right hand thread

## SAS 950 / 1050 Ø 18 - 47 mm | SAS 835 / 1035 Ø 57 - 75 mm | grade 150

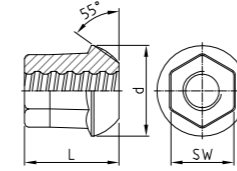
Ø <sub>NENN</sub> / Ø <sub>NOM</sub>	[mm]	18	26,5	32	36	40	47	57	65	75
max d <sub>A</sub>	[mm]	21	31	37	42	46	53	64	72	82
c	[mm]	8	13	16	18	20	21	21	21	24
f <sub>p0,1k</sub> /f <sub>pk</sub> /A <sub>gt</sub> <sup>1)</sup>		950 N/mm <sup>2</sup> / 1050 N/mm <sup>2</sup> / ≥ 5 %						835 N/mm <sup>2</sup> / 1035 N/mm <sup>2</sup> / ≥ 4 %		
F <sub>yk</sub> (F <sub>0,1k</sub> )	[kN]	230	525	760	960	1190	1650	2155	2780	3690
F <sub>pk</sub>	[kN]	255	580	845	1070	1320	1820	2671	3447	4572
A	[mm <sup>2</sup> ]	241	551	804	1020	1257	1735	2581	3331	4418
G	[kg/m]	1,96	4,48	6,53	8,27	10,21	14,10	20,95	27,10	35,90

<sup>1)</sup> Prozentuale Gesamtdehnung bei Höchstlast | Percentage total elongation at maximum force  
Die Gewichtsangaben sind Mittelwerte. Die tatsächlichen Gewichte können aufgrund von Fertigungstoleranzen abweichen.  
Weight specifications are average values. The actual values may deviate due to fabrication tolerances.

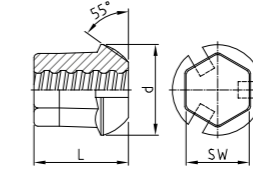
# Zubehör | accessories

## SAS SYSTEMS

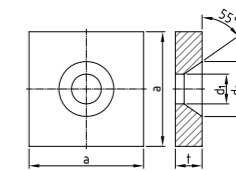
Kugelbundmutter 55°  
dome nut 55°



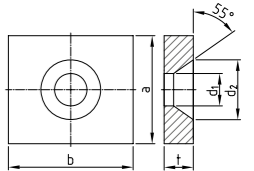
Kugelbundmutter 55°  
mit Verpressnuten  
domed nut 55° with grout slots



Ankerplatte quadratisch 55°  
anchor plate square 55°



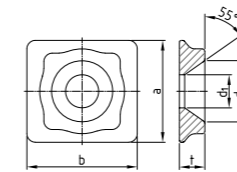
Ankerplatte rechteckig 55°  
anchor plate rectangular 55°



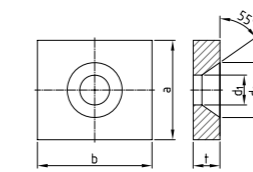
Ø [mm]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]	a x t x d <sub>1</sub> x d <sub>2</sub> [mm]	[kg]	a x b x t x d <sub>1</sub> x d <sub>2</sub> [mm]	[kg]
WR 2001 - Ø		WR 2099 - Ø		WR 2011 - Ø		WR 2012 - Ø		
18	36 x 55 x 50	0,43	36 x 55 x 50	0,40	110 x 30 x 28 x 45	2,66	100 x 130 x 30 x 28 x 45	2,39
26,5	50 x 75 x 72	1,09	50 x 75 x 72	1,02	150 x 35 x 39 x 72	5,61	130 x 150 x 35 x 39 x 72	4,50
32	60 x 90 x 80	1,70	60 x 90 x 80	1,65	180 x 40 x 45 x 82	9,33	140 x 180 x 40 x 45 x 82	7,07
36	65 x 100 x 90	2,24	65 x 100 x 90	2,13	200 x 45 x 49 x 92	12,95	150 x 220 x 50 x 49 x 92	11,70
40	70 x 115 x 100	2,91	70 x 115 x 100	2,71	220 x 45 x 54 x 100	15,64	160 x 250 x 60 x 54 x 100	17,10
47	80 x 135 x 110	4,09	80 x 135 x 110	3,79	260 x 50 x 64 x 110	24,49	200 x 280 x 60 x 64 x 110	24,12
57	-	-	-	-	-	-	-	-
65	-	-	-	-	-	-	-	-
75	-	-	-	-	-	-	-	-

## SAS SYSTEMS

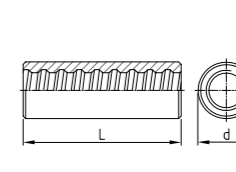
QR Platte  
QR plate



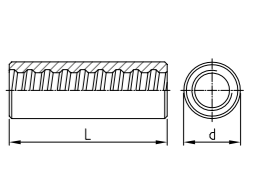
Ankerplatte 55° rechteckig klein  
anchor plate rectangular 55°, small



Muffe standard  
coupler standard



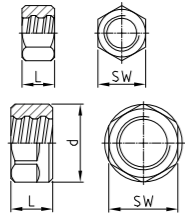
Muffe lang  
coupler long



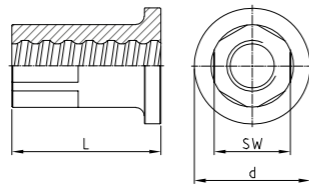
Ø [mm]	b x a x t x d <sub>1</sub> x d <sub>2</sub> [mm]	[kg]	a x b x t x d <sub>1</sub> x d <sub>2</sub> [mm]	[kg]	d x L [mm]	[kg]	d x L [mm]	[kg]
WR 2074 - Ø		WR 2076 - Ø		WR 3003 - Ø		WR 3303 - Ø		
18	-	-	80 x 90 x 25 x 28 x 45	1,25	36 x 100	0,56	36 x 115	0,64
26,5	130 x 120 x 30 x 39 x 72	2,00	120 x 130 x 30 x 39 x 72	3,15	50 x 170	1,73	50 x 195	2,00
32	165 x 140 x 35 x 45 x 82	3,30	140 x 165 x 35 x 45 x 82	5,57	60 x 200	2,91	60 x 230	3,40
36	180 x 160 x 40 x 49 x 93	4,90	160 x 180 x 40 x 49 x 92	7,94	68 x 210	3,98	68 x 245	4,68
40	195 x 180 x 45 x 54 x 100	7,20	180 x 195 x 45 x 54 x 100	10,95	70 x 245	4,59	70 x 285	5,38
47	-	-	210 x 235 x 55 x 64 x 110	19,20	83 x 270	7,23	-	-
57	-	-	-	-	95 x 240	7,75	-	-
65	-	-	-	-	106 x 260	10,37	-	-
75	-	-	-	-	114 x 290	12,14	-	-



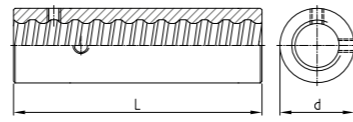
**Haltemutter**  
fix nut



**Spannverankerung**  
stressing anchorage

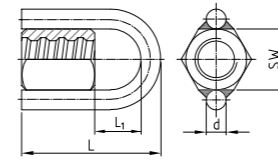


**Spannmuffe**  
stressing-coupler

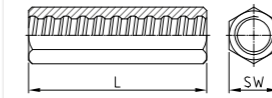


Ø [mm]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]	d x L [mm]	[kg]
	<b>WR 5005 - Ø</b>		<b>WR 8002 - Ø</b>		<b>WR 8003 - Ø</b>	
18	30 x 22	0,08	41 x 70 x 65	0,82	45 x 100	1,00
26,5	36 x 22	0,08	46 x 90 x 70	1,03	45 x 150	1,17
32	41 x 22	0,09	50 x 110 x 70	1,30	55 x 180	2,02
36	46 x 25	0,12	55 x 120 x 80	1,78	60 x 200	2,55
40	50 x 25	0,13	55 x 130 x 80	1,90	65 x 220	3,44
47	60 x 30	0,24	65 x 140 x 90	2,81	75 x 240	4,87
57	85 x 40 x 90	1,02	90 x 160 x 110	7,28	95 x 270	9,40
65	90 x 40 x 102	1,15	100 x 180 x 120	9,66	110 x 290	13,13
75	105 x 50 x 114	1,90	105 x 200 x 135	12,85	120 x 320	15,45

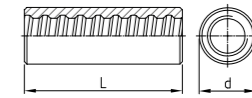
**Ringmutter**  
(Gebrauchslast des Rings max. 60 kN)  
ring nut  
(working load of ring max. 60 kN)



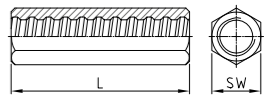
**Sechskantmuffe**  
hexagonal coupler



**Muffe EP standard**  
coupler EP standard

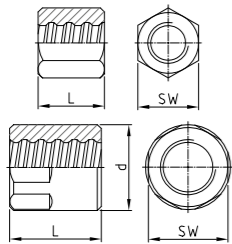


**Sechskantmuffe EP**  
hexagonal coupler EP

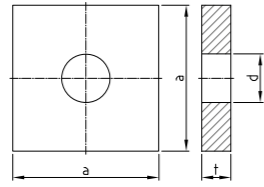


Ø [mm]	SW x L x L <sub>1</sub> x d [mm]	[kg]	SW x L [mm]	[kg]	d x L [mm]	[kg]	SW x L [mm]	[kg]
	<b>WR 2927 - Ø</b>		<b>WR 3009 - Ø</b>		<b>WR 3003 - Ø EP</b>		<b>WR 3009 - Ø EP</b>	
18	41 x 135 x 59 x 16	0,99	36 x 100	0,67	36 x 120	0,69	36 x 120	0,78
26,5	46 x 165 x 69 x 16	1,28	50 x 170	2,09	50 x 185	1,94	50 x 185	2,24
32	55 x 190 x 84 x 16	1,81	60 x 200	3,54	60 x 220	3,33	60 x 220	3,83
36	60 x 219 x 89 x 20	2,78	70 x 210	5,01	68 x 240	4,72	70 x 240	5,87
40	70 x 244 x 104 x 20	3,87	70 x 245	5,61	70 x 270	5,26	70 x 270	5,99
47	79 x 274 x 114 x 20	5,10	79 x 270	7,49	83 x 310	8,65	79 x 310	8,97
57	90 x 255 x 115 x 20	5,08	-	-	95 x 270	9,32	-	-
65	100 x 280 x 130 x 20	6,48	-	-	106 x 290	12,01	-	-
75	105 x 305 x 140 x 20	7,31	-	-	114 x 320	14,15	-	-

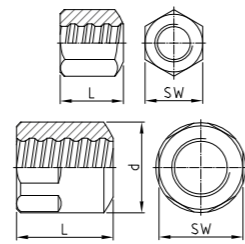
**Ankermutter gerade**  
anchor nut flat



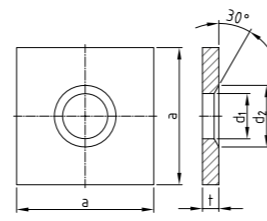
**Ankerplatte gerade**  
anchor plate flat



**Ankermutter ballig 30°**  
bull nose nut 30°

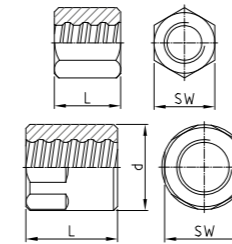


**Ankerplatte Konus 30°**  
anchor plate cone 30°

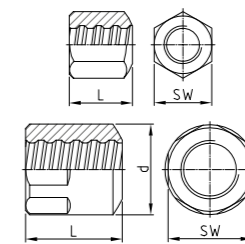


Ø [mm]	SW x L x d [mm]	[kg]	a x t x d [mm]	[kg]	SW x L x d [mm]	[kg]	a x t x d <sub>1</sub> x d <sub>2</sub> [mm]	[kg]
	<b>WR 2002 - Ø</b>		<b>WR 2139 - Ø</b>		<b>WR 2963 - Ø</b>		<b>WR 1928 - Ø</b>	
18	41 x 60	0,55	120 x 20 x 25	2,20	41 x 60	0,52	120 x 20 x 25 x 35	2,18
26,5	46 x 80	0,73	150 x 35 x 32	5,90	46 x 80	0,71	150 x 35 x 32 x 45	5,95
32	55 x 90	1,18	180 x 40 x 38	9,82	55 x 90	1,14	180 x 40 x 38 x 50	9,81
36	60 x 110	1,63	200 x 45 x 45	13,57	60 x 110	1,57	200 x 45 x 45 x 60	13,55
40	70 x 120	2,63	220 x 45 x 50	16,40	70 x 120	2,53	220 x 45 x 50 x 70	16,36
47	79 x 140	3,72	240 x 55 x 58	23,73	79 x 140	3,60	240 x 55 x 58 x 80	23,50
57	90 x 120 x 95	3,79	285 x 65 x 70	39,48	90 x 120 x 95	3,67	285 x 65 x 70 x 90	39,30
65	100 x 130 x 106	4,99	325 x 70 x 78	55,42	100 x 130 x 106	4,90	325 x 70 x 78 x 110	55,50
75	105 x 145 x 114	5,68	370 x 80 x 88	82,15	105 x 145 x 114	5,51	370 x 80 x 88 x 120	82,00

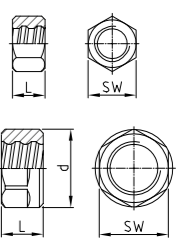
**Ankermutter EP gerade**  
anchor nut EP flat



**Ankermutter EP ballig 30°**  
bull nose nut EP 30°

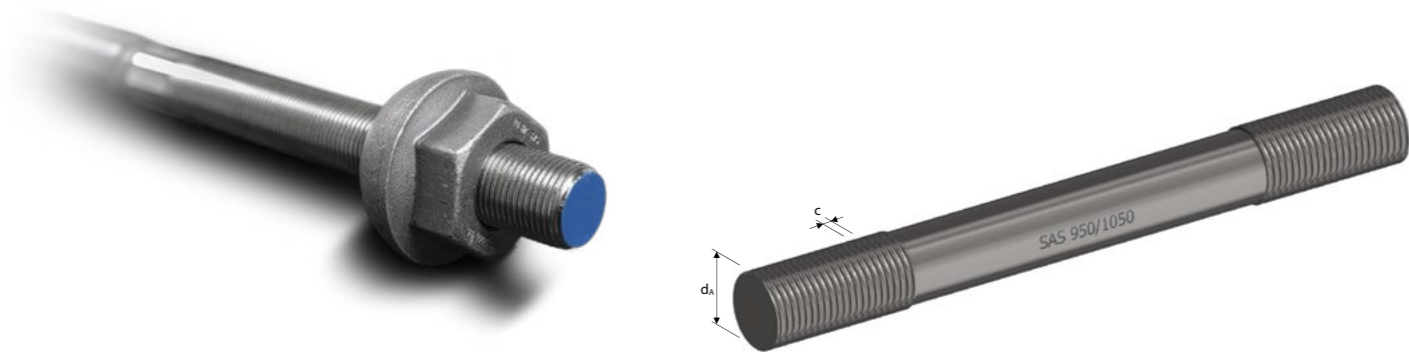


**Haltemutter EP**  
fix nut EP



Ø [mm]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]	SW x L x d [mm]	[kg]
	<b>WR 2002 - Ø EP</b>		<b>WR 2963 - Ø EP</b>		<b>WR 5005 - Ø EP</b>	
18	41 x 70	0,62	41 x 70	0,60	30 x 22	0,08
26,5	46 x 90	0,81	46 x 90	0,79	36 x 22	0,08
32	55 x 100	1,30	55 x 100	1,27	41 x 22	0,09
36	60 x 120	1,75	60 x 120	1,71	46 x 25	0,11
40	70 x 130	2,77	70 x 130	2,70	50 x 25	0,12
47	79 x 150	3,92	79 x 150	3,81	60 x 30	0,23
57	90 x 145 x 95	4,59	90 x 145 x 95	4,46	85 x 40 x 90	1,01
65	100 x 155 x 106	5,82	100 x 155 x 106	5,66	90 x 40 x 102	1,13
75	105 x 180 x 114	7,60	105 x 180 x 114	6,96	105 x 50 x 114	1,92

# SAS Glattstahlstäbe | SAS smooth bar

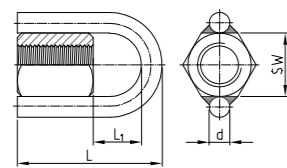


SAS Glattstahl mit kalt aufgerolltem Gewinde - rechtsgängig | SAS smooth bar with cold rolled thread - right hand thread

## SAS 950 / 1050 Ø 32 - 36 mm | grade 150 | glatt | smooth

$\frac{\varnothing_{NENN}}{\varnothing_{NOM}}$	[mm]	32	36
c	[mm]	3	3
$f_{p0,1k}/f_{pk}/A_{gt}$		950 N/mm <sup>2</sup> / 1050 N/mm <sup>2</sup> / $\geq 7\%$	
$F_{yk} (F_{0,1k})$	[kN]	760	960
$F_{pk}$	[kN]	845	1070
A	[mm <sup>2</sup> ]	804	1018
G	[kg/m]	6,31	7,99

### SAS SYSTEMS Ringmutter (Gebrauchslast des Rings max. 60 kN) ring nut (working load of ring max. 60 kN)

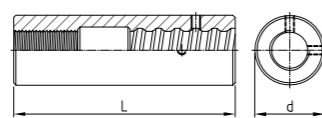


Ø [mm] SW x L x L<sub>1</sub> x d [mm] [kg]

#### WS 2927 - Ø

32	55 x 125 x 59 x 16	1,22
36	60 x 149 x 64 x 20	1,86

### Spannmuffe für WS stressing coupler for WS

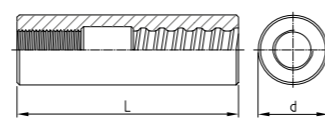


d x L [mm] [kg]

#### WS 8004 - Ø

32	60 x 190	2,74
36	65 x 230	3,80

### Übergangsmuffe transition coupler



d x L [mm] [kg]

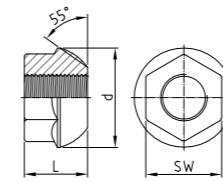
#### WS 3004 - Ø

32	60 x 200	2,94
36	68 x 235	4,47

# Zubehör | accessories

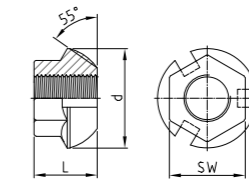
## SAS SYSTEMS

### Kugelbundmutter 55° dome nut 55°



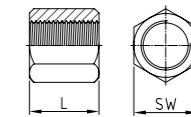
Ø [mm] SW x L x d [mm] [kg]

### Kugelbundmutter 55° mit Verpressnuten dome nut 55° with grout slots



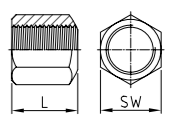
SW x L x d [mm] [kg]

### Ankermutter gerade anchor nut flat



SW x L [mm] [kg]

### Ankermutter ballig 30° bull nose 30°

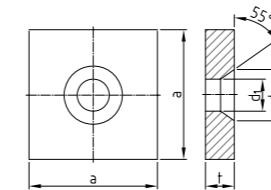


SW x L [mm] [kg]

	WS 2001 - Ø		WS 2099 - Ø		WS 2002 - Ø		WS 2963 - Ø	
32	55 x 46 x 72	0,78	55 x 46 x 72	0,74	55 x 50	0,79	55 x 50	0,68
36	65 x 60 x 90	1,55	65 x 60 x 90	1,41	60 x 65	1,06	60 x 65	1,03

## SAS SYSTEMS

### Ankerplatte quadratisch 55° anchor plate square 55°

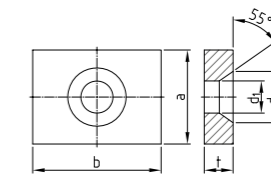


Ø [mm] a x t x d<sub>1</sub> x d<sub>2</sub> [mm] [kg]

#### WS 2011 - Ø

32	180 x 40 x 45 x 72	9,50
36	200 x 45 x 49 x 92	12,95

### Ankerplatte rechteckig 55° anchor plate rectangular 55°

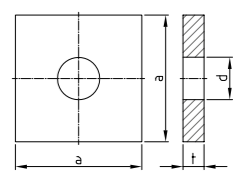


a x b x t x d<sub>1</sub> x d<sub>2</sub> [mm] [kg]

#### WS 2012 - Ø

32	140 x 180 x 40 x 45 x 72	7,24
36	150 x 220 x 50 x 49 x 92	11,70

### Ankerplatte gerade anchor plate flat



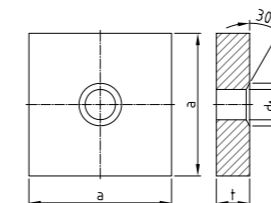
a x t x d [mm] [kg]

#### WS 2139 - Ø

32	180 x 40 x 38	9,82
36	200 x 45 x 45	13,57

## SAS SYSTEMS

### Ankerplatte Konus 30° anchor plate rectangular 30°

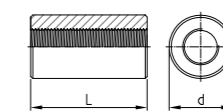


Ø [mm] a x t x d<sub>1</sub> x d<sub>2</sub> [mm] [kg]

#### WS 1928 - Ø

32	180 x 40 x 38 x 50	9,81
36	200 x 45 x 45 x 60	13,55

### Muffe standard coupler standard

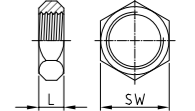


d x L [mm] [kg]

#### WS 3003 - Ø

32	60 x 110	1,74
36	68 x 160	3,25

### Haltemutter fix nut



SW x L [mm] [kg]

#### WS 5005 - Ø

32	41 x 15	0,08
36	46 x 15	0,09


# SAS Gewindestäbe | SAS thread bar

Streckgrenze / Zugfestigkeit | yield stress / ultimate stress  
Anwendungsbereiche | areas of application

Nenn- $\varnothing$  | Strecklast | Bruchlast | Fläche | Gewicht | Dehnung  
nom.- $\varnothing$  | yield load | ultimate load | cross section area | weight | elongation  
[mm] | [kN] | [kN] | [mm<sup>2</sup>] | [m/to] | [kg/m] | A<sub>gt</sub> [%] | A<sub>10</sub> [%]

## SAS 500 / 550 – grade 75

 Bewehrungstechnik | reinforcing systems

 Geotechnik | geotechnical systems

Nenn- $\varnothing$ [mm]	Strecklast [kN]	Bruchlast [kN]	Fläche [mm <sup>2</sup> ]	Gewicht [kg/m]	A <sub>gt</sub> [%]	A <sub>10</sub> [%]		
12	57	62	113	1123,6	0,89	6		
14	77	85	154	826,4	1,21			
16	100	110	201	632,9	1,58			
20	160	175	314	404,9	2,47			
25	245	270	491	259,7	3,85			
28	310	340	616	207,0	4,83			
32	405	440	804	158,5	6,31			
36	510	560	1020	125,2	7,99			
40	630	690	1260	101,3	9,87			
43	726	799	1452	87,7	11,40			
50	980	1080	1960	64,9	15,40			
SAS 555 / 700 – grade 80	57,5	1441	1818	2597	49,1	20,38	5	---
SAS 555 / 700 – grade 80	63,5	1760	2215	3167	40,2	24,86	5	---
SAS 500 / 550 – grade 75	75	2209	2430	4418	28,8	34,68	5	---


Alternativ SAS 550 / 620 erhältlich | alternative SAS 550 / 620 available

## SAS 450 / 700 – grade 60

 Bergbau | mining


16	93	145	207	617,3	1,62	[A <sub>5</sub> ] 15
25	220	345	491	259,7	3,85	[A <sub>5</sub> ] 20

## SAS 650 / 800 – grade 90


 Bergbau | mining

22	247	304	380	335,6	2,98	[A <sub>5</sub> ] 18
25	319	393	491	259,7	3,85	
28	400	493	616	207,0	4,83	
30	460	565	707	180,2	5,55	

## SAS 670 / 800 – grade 97

 Geotechnik | geotechnical systems


 Ankertechnik | tunneling & mining

 Hochfeste Bewehrung | high-strength reinforcement

18	170	204	254	500,0	2,00	5	10	
22	255	304	380	335,6	2,98			
25	329	393	491	259,7	3,85			
28	413	493	616	207,0	4,83			
30	474	565	707	180,2	5,55			
35	645	770	962	132,5	7,55			
43	973	1162	1452	87,7	11,40			
50	1315	1570	1963	64,9	15,40			
57,5	1740	2077	2597	49,1	20,38			---
63,5	2122	2534	3167	40,2	24,86			---
75	2960	3535	4418	28,8	34,68	---		


## SAS 950 / 1050 – grade 150

 Spanntechnik | post-tensioning systems

 Geotechnik | geotechnical systems


18	230	255	241	510,2	1,96	5	7
26,5	525	580	551	223,2	4,48		
32	760	845	804	153,1	6,53		
36	960	1070	1020	120,9	8,27		
40	1190	1320	1257	97,9	10,21		
47	1650	1820	1735	70,9	14,10		

## SAS 835 / 1035 – grade 150

 Geotechnik | geotechnical systems


57	2155	2671	2581	47,7	20,95	4	---
65	2780	3447	3331	36,9	27,10		---
75	3690	4572	4418	27,9	35,90		---

## SAS 900 / 1100 FA – grade 160 FA

 Schalungstechnik | formwork ties


15	159	195	177	694,4	1,44	3	7
20	283	345	314	390,6	2,56		
26,5	495	606	551	223,2	4,48	2	

## SAS 900 / 1050 FC – grade 150 FC

 Schalungstechnik | formwork ties

15	159	186	177	694,4	1,44	3	7	
20	283	330	314	390,6	2,56			
SAS 950 / 1050 E – grade 150	26,5	525	580	551	223,2	4,48	5	7

## SAS 750 / 875 FS – kaltgerollt | cold rolled – grade 120 FS

 Schalungstechnik | formwork ties

12,5	90	120	132,5	961,5	1,04	2	5,5
15	142	165	189	675,7	1,48		
20	245	285	326	390,6	2,56		

Zubehör für alle Abmessungen und Anwendungen lieferbar | accessories for all dimensions and applications available