

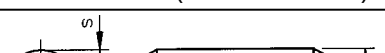
SPRING-TYPE STRAIGHT PINS - HEAVY TYPE - STEEL AND STEEL ZINC PLATED

SPANBUSSEN - ZWARE UITVOERING - STAAL EN STAAL ELEKTROLYTISCH VERZINKT

GOUPILLES ELASTIQUES - TYPE LOURD - ACIER ET ACIER ELECTRO-ZINGUE

MAQUITOS DE SUJECCIÓN - TIPO PESADO - ACERO Y ACERO GALVANIZADO ELECTROLITICO

SPANNSTIFTE (SPANNHÜLSEN) - SCHWERE AUSFÜHRUNG - STAHL UND STAHL VERZINKT

	ISO : 8752 DIN : 1481 NEN : 2458 ANSI : - BS : 7060 NF : -		GROUPCODE		 <i>Ordering example:</i> 39100 1,5 x 6	St ^①
			STEEL ZINC PL.			

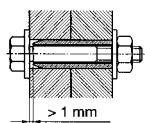
d (nom.)		1,5	2	2,5	3	3,5	4	➔
d1	(min.)	1,7	2,3	2,8	3,3	3,8	4,4	
	(max.)	1,8	2,4	2,9	3,5	4	4,6	
d2 ≈		1,1	1,5	1,8	2,1	2,3	2,8	
s		0,3	0,4	0,5	0,6	0,75	0,8	
a ②		0,25	0,35	0,4	0,5	0,6	0,65	
Shear load min. in kN	single shear	0,79	1,41	2,19	3,16	4,53	5,62	
	double shear	1,58	2,82	4,38	6,32	9,06	11,24	

DIMENSION CODE

d x L	STEEL		ZINC PL.	☒	d x L	STEEL		ZINC PL.	☒	d x L	STEEL		ZINC PL.	☒
	39100	39110				39100	39110				39100	39110		
	L09	L09				L09	L09				L09	L09		
1,5 x 6MM	015.006			200	2,5 x 24MM	025.024			200	3,5 x 18MM	035.018			200
1,5 x 8MM	015.008			200	2,5 x 26MM	025.026			200	3,5 x 20MM	035.020			200
1,5 x 10MM	015.010			200	2,5 x 28MM	025.028			200	3,5 x 26MM	035.026			200
1,5 x 12MM	015.012			200	2,5 x 30MM	025.030			200	3,5 x 30MM	035.030			200
1,5 x 16MM	015.016			200						3,5 x 32MM	035.032			200
1,5 x 20MM	015.020			200						3,5 x 40MM	035.040			200
2 x 4MM	020.004			200	3 x 4MM	030.004			200	4 x 8MM	040.008			200
2 x 8MM	020.008			200	3 x 6MM	030.006			200	4 x 10MM	040.010			200
2 x 10MM	020.010			200	3 x 8MM	030.008			200	4 x 12MM	040.012			200
2 x 12MM	020.012			200	3 x 10MM	030.010			200	4 x 14MM	040.014			200
2 x 14MM	020.014			200	3 x 12MM	030.012			200	4 x 16MM	040.016	040.016		200
2 x 16MM	020.016			200	3 x 14MM	030.014	030.014		200	4 x 18MM	040.018			200
2 x 20MM	020.020			200	3 x 16MM	030.016	030.016		200	4 x 20MM	040.020	040.020		200
2 x 24MM	020.024			200	3 x 20MM	030.020	030.020		200	4 x 22MM	040.022			200
2 x 26MM	020.026			200	3 x 22MM	030.022			200	4 x 24MM	040.024	040.024		200
2 x 30MM	020.030			200	3 x 24MM	030.024	030.024		200	4 x 26MM	040.026	040.026		200
2 x 40MM	020.040			200	3 x 26MM	030.026	030.026		200	4 x 28MM	040.028			200
					3 x 28MM	030.028			200	4 x 30MM	040.030	040.030		200
					3 x 30MM	030.030	030.030		200	4 x 32MM	040.032			100
					3 x 36MM	030.036	030.036		200	4 x 36MM	040.036			100
					3 x 40MM	030.040			200	4 x 40MM	040.040	040.040		100
					3 x 50MM	030.050			200	4 x 45MM	040.045			100
2,5 x 8MM	025.008			200						4 x 50MM	040.050	040.050		100
2,5 x 10MM	025.010			200	3,5 x 10MM	035.010			200	4 x 60MM	040.060	040.060		100
2,5 x 12MM	025.012			200	3,5 x 12MM	035.012			200					
2,5 x 16MM	025.016			200	3,5 x 16MM	035.016			200					
2,5 x 18MM	025.018			200										
2,5 x 20MM	025.020			200										

TECHNICAL DATA

Spring-type straight pins are used to connect two or more construction elements to each other. Highly suitable to absorb shear forces. To avoid movements in light bolt connections spring-type straight pins can be used acc. to information stated below:



d (nom.) spring-type straight pin

intended for boltsize

associated washers DIN 7349 (see section 7)

6

8

10

12

16

18

M3

M4

M5

M6

M8

M10

3,2

4,3

5,3

6,4

8,4

10,5

① Spring steel 55 Si 7.

② Bevelled edges of 30° on both sides for sizes up to and including 6mm, pins over 8mm have a single bevelled edge of 15°.

For the drilling hole d (nom.) with tolerance H12 is recommended.

For tolerance fields, see section 15.

WARNING: electro-galvanizing of these products may cause hydrogen embrittlement.



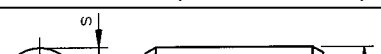
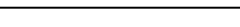
SPRING-TYPE STRAIGHT PINS - HEAVY TYPE - STEEL AND STEEL ZINC PLATED

SPANBUSSEN - ZWARE UITVOERING - STAAL EN STAAL ELEKTROLYTISCH VERZINKT

GOUPILLES ELASTIQUES - TYPE LOURD - ACIER ET ACIER ELECTRO-ZINGUE

MAQUITOS DE SUJECCIÓN - TIPO PESADO - ACERO Y ACERO GALVANIZADO ELECTROLITICO

SPANNSTIFTE (SPANNHÜLSSEN) - SCHWERE AUSFÜHRUNG - STAHL UND STAHL VERZINKT

	ISO : 8752	GROUPCODE		St ^①
	DIN : 1481			
	NEN : 2458	STEEL ZINC PL.	39100 39110	Ordering example: 39100 1,5 x 6
	ANSI : -			
	BS : 7060			
	NF : -			

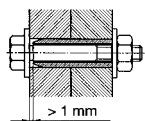
d (nom.)		4,5	5	6	7②	8	9②	
d1	(min.)	4,9	5,4	6,4	7,5	8,5	9,5	
d1	(max.)	5,1	5,6	6,7	7,8	8,8	9,8	
d2 ≈		2,9	3,4	3,9	4,5	5,5	5,5	
s		1	1	1,25	1,5	1,5	2	
a ③		0,8	0,9	1,2	2	2	2	
Shear load min. in kN	single shear	7,68	8,77	13,02	15,7	21,38	30,33	
	double shear	15,36	17,54	26,04	31,4	42,76	60,66	

DIMENSION CODE

d x L	STEEL		ZINC PL.	☒	d x L	STEEL		ZINC PL.	☒	d x L	STEEL		ZINC PL.	☒
	39100	39110				39100	39110				39100	39110		
	L09	L09				L09	L09				L09	L09		
4,5 x 10MM	045.010			200	5 x 80MM	050.080			50	7 x 80MM	070.080			25
4,5 x 12MM	045.012			200						7 x 100MM	070.100			25
4,5 x 14MM	045.014			200	6 x 10MM	060.010			200	8 x 20MM	080.020			50
4,5 x 16MM	045.016			200	6 x 12MM	060.012			200	8 x 24MM	080.024			50
4,5 x 20MM	045.020			200	6 x 16MM	060.016			200	8 x 26MM	080.026			50
4,5 x 30MM	045.030			100	6 x 20MM	060.020			100	8 x 30MM	080.030	080.030		50
4,5 x 40MM	045.040			100	6 x 24MM	060.024	060.024		100	8 x 32MM	080.032	080.032		50
4,5 x 45MM	045.045			100	6 x 26MM	060.026			100	8 x 36MM	080.036	080.036		50
4,5 x 50MM	045.050			100	6 x 30MM	060.030	060.030		100	8 x 40MM	080.040	080.040		50
					6 x 32MM	060.032			100	8 x 45MM	080.045			50
5 x 8MM	050.008			100	6 x 35MM		060.035		100	8 x 50MM	080.050	080.050		50
5 x 10MM	050.010			100	6 x 40MM	060.040	060.040		100	8 x 55MM	080.055	080.055		50
5 x 12MM	050.012			100	6 x 45MM	060.045			50	8 x 60MM	080.060	080.060		50
5 x 16MM	050.016			100	6 x 50MM	060.050	060.050		50	8 x 70MM	080.070	080.070		25
5 x 18MM	050.018			100	6 x 60MM	060.060	060.060		50	8 x 80MM	080.080			25
5 x 20MM	050.020	050.020		100	6 x 70MM	060.070	060.070		50	8 x 100MM	080.100			10
5 x 24MM	050.024	050.024		100	6 x 80MM	060.080			50	8 x 120MM	080.120			10
5 x 26MM	050.026	050.026		100	6 x 90MM	060.090			50					
5 x 28MM	050.028			100	6 x 100MM	060.100			50	9 x 30MM	090.030			50
5 x 30MM	050.030	050.030		100						9 x 40MM	090.040			50
5 x 32MM	050.032			100	7 x 26MM	070.026			100	9 x 50MM	090.050			25
5 x 36MM	050.036			100	7 x 30MM	070.030			50	9 x 60MM	090.060			25
5 x 40MM	050.040	050.040		100	7 x 40MM	070.040			50	9 x 70MM	090.070			25
5 x 45MM	050.045			100	7 x 50MM	070.050			50	9 x 80MM	090.080			10
5 x 50MM	050.050	050.050		100	7 x 60MM	070.060			50	9 x 100MM	090.100			10
5 x 60MM	050.060	050.060		100	7 x 70MM	070.070			25	9 x 120MM	090.120			10
5 x 70MM	050.070	050.070		50										

TECHNICAL DATA

Spring-type straight pins are used to connect two or more construction elements to each other. Highly suitable to absorb shear forces. To avoid movements in light bolt connections spring-type straight pins can be used acc. to information stated below:



d (nom.) spring-type straight pin

intended for boltsize

associated washers DIN 7349 (see section 7)

6

M3

3,2

8

M4

4,3

10

M5

5,3

12

M6

6,4

16

M8

8,4

18

M10

10,5

① Spring steel 55 Si 7.

② This size is **not** DIN standardised.

③ Bevelled edges of 30° on both sides for sizes up to and including 6mm, pins over 8mm have a single bevelled edge of 15°.

For the drilling hole d (nom.) with tolerance H12 is recommended.

For tolerance fields, see section 15.

WARNING: electro-galvanizing of these products may cause hydrogen embrittlement.


SPRING-TYPE STRAIGHT PINS - HEAVY TYPE - STEEL AND STEEL ZINC PLATED

SPANBUSSEN - ZWARE UITVOERING - STAAL EN STAAL ELEKTROLYTISCH VERZINKT

GOUPILLES ELASTIQUES - TYPE LOURD - ACIER ET ACIER ELECTRO-ZINGUE

MAQUITOS DE SUJECCIÓN - TIPO PESADO - ACERO Y ACERO GALVANIZADO ELECTROLITICO

SPANNSTIFTE (SPANNHÜLSEN) - SCHWERE AUSFÜHRUNG - STAHL UND STAHL VERZINKT

	ISO : 8752	GROUPCODE		St ^①
	DIN : 1481			
	NEN : 2458			
	ANSI : -			
	BS : 7060			
	NF : -			

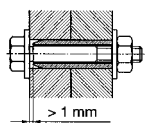
d (nom.)		10	12	13	14	16	18	20
d1	(min.)	10,5	12,5	13,5	14,4	16,5	18,5	20,5
d1	(max.)	10,8	12,8	13,8	14,8	16,8	18,9	20,9
d2 ≈		6,5	7,5	8,5	8,5	10,5	11,5	12,5
s		2	2,5	2,5	3	3	3,5	4
a ②		2	2	2	2	2	2	3
Shear load min. in kN	single shear	35,08	52,07	57,55	72,36	85,51	111,27	140,32
	double shear	70,16	104,1	115,1	144,7	171	222,5	280,6

DIMENSION CODE

d x L	STEEL		ZINC PL.	L09	5	d x L	STEEL		ZINC PL.	L09	5	d x L	STEEL		ZINC PL.	L09	5
	39100	39110					39100	39110					39100	39110			
10 x 20MM	100.020				50	12 x 140MM	120.140				10	16 x 140MM	160.140				5
10 x 22MM	100.022				50	12 x 160MM	120.160				10	16 x 160MM	160.160				5
10 x 26MM	100.026				50	12 x 180MM	120.180				10						
10 x 30MM	100.030	100.030			50							18 x 40MM	180.040				5
10 x 36MM	100.036				50	13 x 100MM	130.100				10	18 x 50MM	180.050				5
10 x 40MM	100.040	100.040			25							18 x 60MM	180.060				5
10 x 45MM	100.045				25	14 x 30MM	140.030				10	18 x 70MM	180.070				5
10 x 50MM	100.050	100.050			25	14 x 36MM	140.036				10	18 x 80MM	180.080				5
10 x 60MM	100.060	100.060			25	14 x 40MM	140.040				10	18 x 85MM	180.085				5
10 x 70MM	100.070	100.070			25	14 x 50MM	140.050				10	18 x 90MM	180.090				5
10 x 75MM		100.075			10	14 x 60MM	140.060				10	18 x 95MM	180.095				5
10 x 80MM	100.080	100.080			10	14 x 70MM	140.070				10	18 x 100MM	180.100				5
10 x 90MM	100.090				10	14 x 80MM	140.080				10	18 x 120MM	180.120				5
10 x 100MM	100.100				10	14 x 90MM	140.090				10						
10 x 120MM	100.120				10	14 x 100MM	140.100				10	20 x 40MM	200.040				5
10 x 140MM	100.140				10	14 x 120MM	140.120				10	20 x 50MM	200.050				5
10 x 160MM	100.160				10							20 x 60MM	200.060				5
12 x 20MM	120.020				25	16 x 30MM	160.030				5	20 x 70MM	200.070				5
12 x 30MM	120.030	120.030			25	16 x 36MM	160.036				5	20 x 80MM	200.080				5
12 x 36MM	120.036				25	16 x 40MM	160.040				5	20 x 85MM	200.085				5
12 x 40MM	120.040	120.040			25	16 x 50MM	160.050				5	20 x 90MM	200.090				5
12 x 50MM	120.050	120.050			10	16 x 60MM	160.060				5	20 x 95MM	200.095				5
12 x 60MM	120.060	120.060			10	16 x 70MM	160.070				5	20 x 100MM	200.100				5
12 x 70MM	120.070	120.070			10	16 x 75MM	160.075				5	20 x 105MM	200.105				5
12 x 80MM	120.080	120.080			10	16 x 80MM	160.080				5	20 x 115MM	200.115				5
12 x 90MM	120.090				10	16 x 90MM	160.090				5	20 x 120MM	200.120				5
12 x 100MM	120.100	120.100			10	16 x 100MM	160.100				5	20 x 140MM	200.140				5
12 x 120MM	120.120	120.120			10	16 x 120MM	160.120				5	20 x 160MM	200.160				5

TECHNICAL DATA

Spring-type straight pins are used to connect two or more construction elements to each other. Highly suitable to absorb shear forces. To avoid movements in light bolt connections spring-type straight pins can be used acc. to information stated below:



d (nom.) spring-type straight pin	6	8	10	12	16	18
intended for boltsize	M3	M4	M5	M6	M8	M10
associated washers DIN 7349 (see section 7)	3,2	4,3	5,3	6,4	8,4	10,5

① Spring steel 55 Si 7.

② Bevelled edges of 30° on both sides for sizes up to and including 6mm, pins over 8mm have a single bevelled edge of 15°.

For the drilling hole d (nom.) with tolerance H12 is recommended.

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