

Roller and ball bars for easy and safe die change



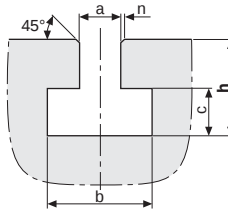
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T-slot tolerances acc. to DIN 650

a	b	c	h	n
			min.	max.
18 H8	30 ⁺²	12 ⁺²	30	1,6
22 H8	37 ⁺³	16 ⁺²	38	1,6
28 H8	46 ⁺⁴	20 ⁺²	48	1,6
36 H8	56 ⁺⁴	25 ⁺³	61	2,5

Dimensions in mm

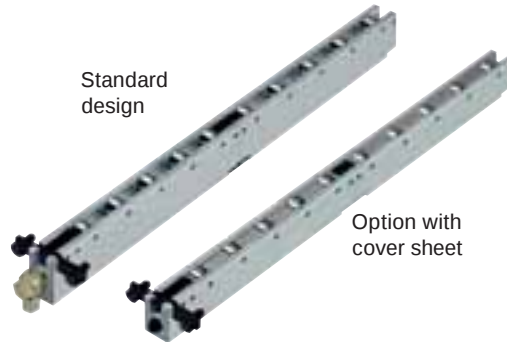
$h_{min.}$ = smallest dimension acc.
to DIN 650



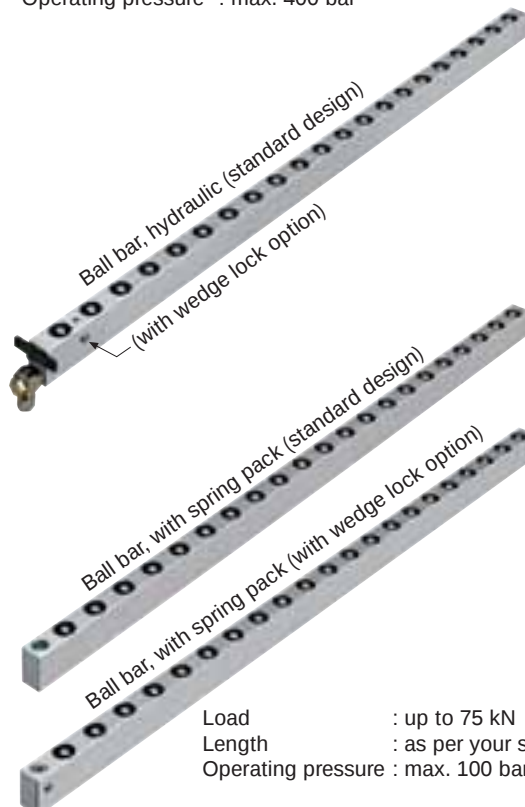
Applications:

- in T-slots and rectangular slots of press beds for easy die change
- die change rationalisation

Standard design



Load : up to 320 kN
Length : as per your specification
Operating pressure : max. 400 bar



Load : up to 75 kN
Length : as per your specification
Operating pressure : max. 100 bar



Load : 20 - 100 kg
Hole : 20 - 40 mm

Roller bar, hydraulically lifted

for high loads and linear movement of dies:

Lifting pistons are fitted to the lower side of the roller bars. These pistons which are pressurised by means of a hydraulic pressure generator raise the roller bar. The die placed on the roller bars is not in contact with the bed plate and can be moved in a linear direction and positioned with effortless ease. The maximum operating pressure is 400 bar. and a low-pressure circuit is not required.

The bodies of the roller bars are made from a high-strength aluminium alloy. They are available in variable lengths.

The bars are easily fastened using the fastening plate.

Ball bar, hydraulically lifted

for medium loads and flexible horizontal movement of the dies:

The ball inserts are lifted by the application of oil pressure generated by a hydraulic pressure generator. The die placed on the ball bars is not in contact with the bed plate and can be moved very easily.

The maximum operating pressure is 100 bar.

All bars are available in variable lengths.

The bars are easily fastened using the fastening plate or the wedge lock (optional).

Ball bar with spring pack

for easy horizontal movement of lightweight dies:

The balls protrude by about 1 mm above the level of the bed. If the die is clamped, the balls are pressed into the bar body by spring power and are flush with the bed surface.

Ball inserts with spring pack

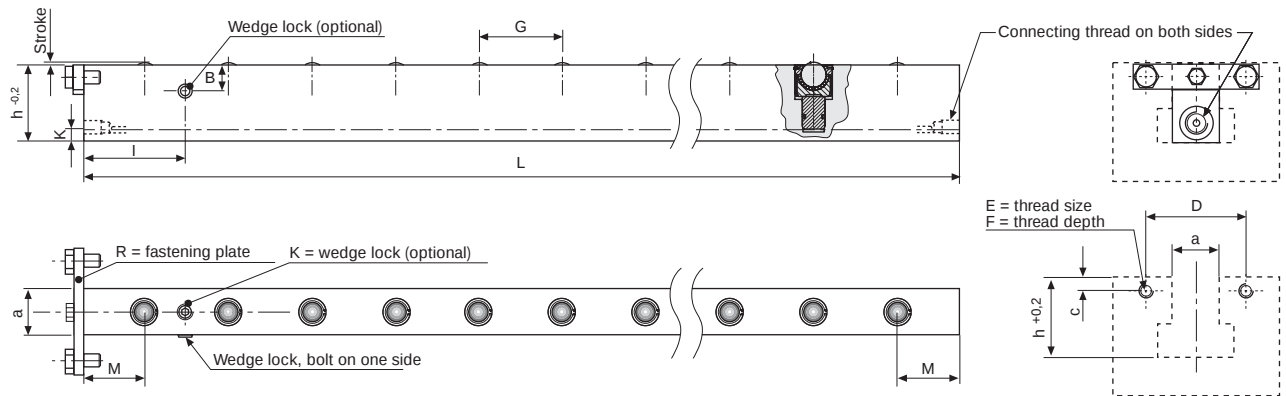
for installation on presses without T-slots:

The spring-loaded ball inserts are individually inserted in drilled holes. Functioning of the ball inserts is similar to that of ball bars with spring pack.

Ball bar, hydraulically lifted (max. 100 bar)



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Slot width (a)	Min. slot height (h) (mm)	Standard slot height (h) (mm)	G min. (mm)	Standard ball spacing G (mm)	G max. (mm)	L min. (mm)	L max. (mm)	Stroke (mm)	Load-bearing capacity/ ball (kN)	Connecting thread	B	C	D	E	F	I	K	M
18	29,5	30	26	30	60	*)	2900	1	0,79	G 1/8	12	5	36	M5	15	35	8	22,5
22	38	38	32	40	80	*)	2900	2	1,1	G 1/8	16	7	40	M5	15	46	8,5	30
28	42	48	37	45	90	*)	2900	2	1,5	G 1/4	16	9	50	M6	20	51	11	32,5
36	53	61	43	50	100	*)	2900	2	2,5	G 1/4	16	10	55	M6	20	56,5	11	35
13/16"	29,4	29,4	26	30	60	*)	2900	1	0,79	G 1/8	12	5	36	M5	15	35	8	22,5
1 1/16"	37,4	38,9	32	40	80	*)	2900	2	1,1	G 1/4	16	7	40	M5	15	46	11	30

*) L min. depends on the ball spacing G with at least 3 balls (see ball bar variations)

Indication of the load per ball bar; Annex K = wedge lock, R = fastening plate

A fastening plate, a short 250 mm hose and an angular swivel type screw fitting are supplied with the ball bar.

Ball bar variations with hydraulic lifting (max. 100 bar)

If the appropriate ball bar for your specific application is not included in the tables of standard bars, our range of variations offers a solution. Fewer balls also means that the ball bar may be offered at a lower price.

Select the slot height, the ball spacing and the bar length to create a variation for your application.

Within the limits indicated in the table of dimensions the following parameters can be freely selected:

Slot height (h)

If for your application the slots are not as high as in our standard design, indicate the corresponding dimension.

If for your application the slots are higher than our standard design, spacer bars may be inserted. Please contact us.

e. g. **h = 44 mm** (for slot width 28 mm)

Spacing of balls (G) and load-bearing capacity of the ball bar

By changing the spacing of the balls the load-bearing capacity of the ball bar may be varied. Please note that the load-bearing capacity is indicated for the full length of the ball bar. Therefore, both the load-bearing capacity and the ball spacing must be selected to suit the die weight and the die supporting length.

*Please indicate the desired ball spacing or load-bearing capacity of the ball bar, or the maximum die weight and the die dimensions.

*) e.g. **G = 60 mm**
or **load-bearing capacity/bar = 36 kN**
or **number of balls = 24**
or **die weight and outside dimensions**

Length of the ball bar (L)

The possible length of the bar is obtained from the ball spacing (G) and the parameter (M).

Just indicate the theoretical length (e.g. the length of the table) for your ball bar.

Please note that a ball bar must be equipped with at least 3 balls.

e.g. **L = 1445 mm**

Example of ordering:

8.9217.7128 L1445 R H44 G60*

Ball bar,
hydraulic

Slot
width
28 mm

Length
1455 mm

Slot height
44 mm

Ball
spacing
60 mm

Fastening
plate

R = fastening plate
K = wedge lock

Based on these parameters, we will devise the ball bar for your specific application.

Please contact us, we will be pleased to offer you advice!



Ball bar, hydraulically lifted (max. 100 bar)

Selection of ball bars in preferred sizes: slot height "h" and ball spacing "G"

For other slot heights, lengths and load bearing capacities (or ball spacings), please see "Ball bar variations with hydraulic lifting"

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9217.7118 L 105 R	18	105	2,3	3
8.9217.7118 L 135 R	18	135	3,1	4
8.9217.7118 L 165 R	18	165	3,9	5
8.9217.7118 L 195 R	18	195	4,7	6
8.9217.7118 L 255 R	18	255	6,3	8
8.9217.7118 L 315 R	18	315	7,9	10
8.9217.7118 L 375 R	18	375	9,4	12
8.9217.7118 L 435 R	18	435	11,0	14
8.9217.7118 L 495 R	18	495	12,6	16
8.9217.7118 L 555 R	18	555	14,2	18
8.9217.7118 L 615 R	18	615	15,8	20
8.9217.7118 L 675 R	18	675	17,3	22
8.9217.7118 L 735 R	18	735	18,9	24
8.9217.7118 L 795 R	18	795	20,5	26
8.9217.7118 L 855 R	18	855	22,1	28
8.9217.7118 L 915 R	18	915	23,7	30
8.9217.7118 L 975 R	18	975	25,2	32
8.9217.7118 L 1035 R	18	1035	26,8	34

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9217.7122 L 140 R	22	140	3,3	3
8.9217.7122 L 180 R	22	180	4,4	4
8.9217.7122 L 220 R	22	220	5,5	5
8.9217.7122 L 260 R	22	260	6,6	6
8.9217.7122 L 340 R	22	340	8,8	8
8.9217.7122 L 420 R	22	420	11,0	10
8.9217.7122 L 500 R	22	500	13,2	12
8.9217.7122 L 580 R	22	580	15,4	14
8.9217.7122 L 660 R	22	660	17,6	16
8.9217.7122 L 740 R	22	740	19,8	18
8.9217.7122 L 820 R	22	820	22,0	20
8.9217.7122 L 900 R	22	900	24,2	22
8.9217.7122 L 980 R	22	980	26,4	24
8.9217.7122 L 1060 R	22	1060	28,6	26
8.9217.7122 L 1140 R	22	1140	30,8	28
8.9217.7122 L 1220 R	22	1220	33,0	30
8.9217.7122 L 1300 R	22	1300	35,2	32
8.9217.7122 L 1380 R	22	1380	37,4	34
8.9217.7122 L 1460 R	22	1460	39,6	36

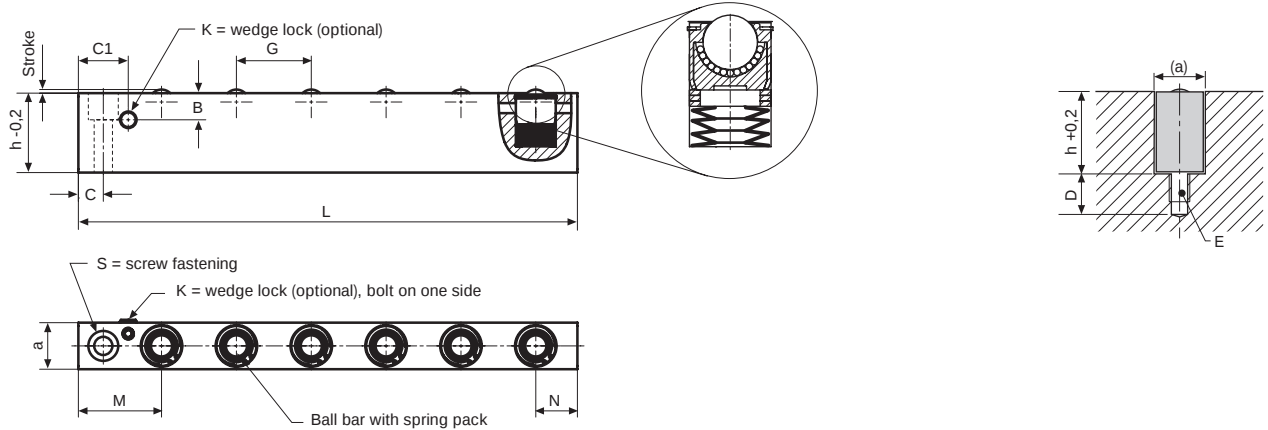
Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9217.7128 L 155 R	28	155	4,5	3
8.9217.7128 L 200 R	28	200	6,0	4
8.9217.7128 L 245 R	28	245	7,5	5
8.9217.7128 L 290 R	28	290	9,0	6
8.9217.7128 L 380 R	28	380	12,0	8
8.9217.7128 L 470 R	28	470	15,0	10
8.9217.7128 L 560 R	28	560	18,0	12
8.9217.7128 L 650 R	28	650	21,0	14
8.9217.7128 L 740 R	28	740	24,0	16
8.9217.7128 L 830 R	28	830	27,0	18
8.9217.7128 L 920 R	28	920	30,0	20
8.9217.7128 L 1010 R	28	1010	33,0	22
8.9217.7128 L 1100 R	28	1100	36,0	24
8.9217.7128 L 1190 R	28	1190	39,0	26
8.9217.7128 L 1280 R	28	1280	42,0	28
8.9217.7128 L 1370 R	28	1370	45,0	30
8.9217.7128 L 1460 R	28	1460	48,0	32

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9217.7136 L 170 R	36	170	7,5	3
8.9217.7136 L 220 R	36	220	10,0	4
8.9217.7136 L 270 R	36	270	12,5	5
8.9217.7136 L 320 R	36	320	15,0	6
8.9217.7136 L 420 R	36	420	20,0	8
8.9217.7136 L 520 R	36	520	25,0	10
8.9217.7136 L 620 R	36	620	30,0	12
8.9217.7136 L 720 R	36	720	35,0	14
8.9217.7136 L 820 R	36	820	40,0	16
8.9217.7136 L 920 R	36	920	45,0	18
8.9217.7136 L 1020 R	36	1020	50,0	20
8.9217.7136 L 1120 R	36	1120	55,0	22
8.9217.7136 L 1220 R	36	1220	60,0	24
8.9217.7136 L 1320 R	36	1320	65,0	26
8.9217.7136 L 1420 R	36	1420	70,0	28
8.9217.7136 L 1520 R	36	1520	75,0	30

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9217.7113 L 105 R	13/16"	105	2,3	3
8.9217.7113 L 135 R	13/16"	135	3,1	4
8.9217.7113 L 165 R	13/16"	165	3,9	5
8.9217.7113 L 195 R	13/16"	195	4,7	6
8.9217.7113 L 255 R	13/16"	255	6,3	8
8.9217.7113 L 315 R	13/16"	315	7,9	10
8.9217.7113 L 375 R	13/16"	375	9,4	12
8.9217.7113 L 435 R	13/16"	435	11,0	14
8.9217.7113 L 495 R	13/16"	495	12,6	16
8.9217.7113 L 555 R	13/16"	555	14,2	18
8.9217.7113 L 615 R	13/16"	615	15,8	20
8.9217.7113 L 675 R	13/16"	675	17,3	22
8.9217.7113 L 735 R	13/16"	735	18,9	24
8.9217.7113 L 795 R	13/16"	795	20,5	26
8.9217.7113 L 855 R	13/16"	855	22,1	28
8.9217.7113 L 915 R	13/16"	915	23,7	30
8.9217.7113 L 975 R	13/16"	975	25,2	32
8.9217.7113 L 1035 R	13/16"	1035	26,8	34

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9217.7117 L 140 R	1 1/16"	140	3,3	3
8.9217.7117 L 180 R	1 1/16"	180	4,4	4
8.9217.7117 L 220 R	1 1/16"	220	5,5	5
8.9217.7117 L 260 R	1 1/16"	260	6,6	6
8.9217.7117 L 340 R	1 1/16"	340	8,8	8
8.9217.7117 L 420 R	1 1/16"	420	11	10
8.9217.7117 L 500 R	1 1/16"	500	13,2	12
8.9217.7117 L 580 R	1 1/16"	580	15,4	14
8.9217.7117 L 660 R	1 1/16"	660	17,6	16
8.9217.7117 L 740 R	1 1/16"	740	19,8	18
8.9217.7117 L 820 R	1 1/16"	820	22	20
8.9217.7117 L 900 R	1 1/16"	900	24,2	22
8.9217.7117 L 980 R	1 1/16"	980	26,4	24
8.9217.7117 L 1060 R	1 1/16"	1060	28,6	26
8.9217.7117 L 1140 R	1 1/16"	1140	30,8	28
8.9217.7117 L 1220 R	1 1/16"	1220	33	30
8.9217.7117 L 1300 R	1 1/16"	1300	35,2	32
8.9217.7117 L 1380 R	1 1/16"	1380	37,4	34

R = fastening plate
K = wedge lock



Slot width (a)	Min. slot height (h) (mm)	Standard slot height (h) (mm)	Standard ball spacing			L min. (mm)	L max. (mm)	Stroke (mm)	Load-bearing capacity/ ball (kN)	Dimensions (mm)						
			G min. (mm)	G (mm)	G max. (mm)					B	C	C1	D	E	M	N
18	25	30	20	20	60	*)	2900	1	0,22	12	10	10	15	M6	27,5	12,5
22	31	38	23	30	80	*)	2900	2	0,42	16	12,5	24,5	15	M8	40	15
28	35	48	28	45	90	*)	2900	2	0,63	16	15	30	20	M10	50	25
36	46	61	34	45	100	*)	2900	2	1,00	16	20	35	20	M10	57,5	27,5
13/16"	25	29,4	20	20	60	*)	2900	1	0,22	12	10	10	15	M6	27,5	12,5
1 1/16"	31	38,9	23	30	80	*)	2900	2	0,42	16	12,5	24,5	15	M8	40	15

*) L min. depends on the ball spacing G with at least 3 balls (see ball bar variations)
Indication of the load per ball bar; Annex K = wedge lock, S = screw fastening

Ball bar variations with spring pack

If the appropriate ball bar for your specific application is not included in the tables of standard bars, our range of variations offers a solution. Fewer balls also means that the ball bar may be offered at a lower price. Select the slot height, the ball spacing and the bar length to create a variation for your application.

Within the limits indicated in the table of dimensions the following parameters can be freely selected:

Slot height (h)

If for your application the slots are not as high as in our standard design, indicate the corresponding dimension.
If for your application the slots are higher than our standard design, spacer bars may be inserted. Please contact us.

e. g. **h = 40 mm** (for slot width 28 mm)

Spacing of balls (G) and load-bearing capacity of the ball bar

By changing the spacing of the balls the load-bearing capacity of the ball bar may be varied. Please note that the load-bearing capacity is indicated for the full length of the ball bar. Therefore, both the load-bearing capacity and the ball spacing must be selected to suit the die weight and the die supporting length.

*) Please indicate the desired ball spacing or load-bearing capacity of the ball bar, or the maximum die weight and the die dimensions.

*) e.g. **G = 50 mm**
or **load-bearing capacity/bar = 17 kN**
or **number of balls = 28**
or **die weight and outside dimensions**

Length of the ball bar (L)

The possible length of the bar is obtained from the ball spacing (G) and the parameters (M) and (N).
Just indicate the theoretical length (e.g. the length of the table) for your ball bar.

Please note that a ball bar must be equipped with at least 3 balls.

e.g. **L = 1425 mm**

Example of ordering:

8.9218.7128 L1425 S H40 G50*
Ball bar, with spring pack Slot width 28 mm Length 1425 mm Slot height 40mm Ball spacing 50 mm

Fastening screw

S = screw
K = wedge lock

Based on these parameters, we will provide the ball bar for your specific application.
Please contact us, we will be pleased to offer you advice!



Selection of ball bars in preferred sizes: slot height "h" and ball spacing "G"

For other slot heights, lengths and load bearing capacities (or ball spacings), please see "Ball bar variations with spring pack"

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9218.7118 L 80 S	18	80	0,6	3
8.9218.7118 L 100 S	18	100	0,8	4
8.9218.7118 L 120 S	18	120	1,1	5
8.9218.7118 L 140 S	18	140	1,3	6
8.9218.7118 L 180 S	18	180	1,7	8
8.9218.7118 L 220 S	18	220	2,2	10
8.9218.7118 L 260 S	18	260	2,6	12
8.9218.7118 L 300 S	18	300	3,0	14
8.9218.7118 L 340 S	18	340	3,5	16
8.9218.7118 L 380 S	18	380	3,9	18
8.9218.7118 L 420 S	18	420	4,4	20
8.9218.7118 L 460 S	18	460	4,8	22
8.9218.7118 L 500 S	18	500	5,2	24

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9218.7122 L 115 S	22	115	1,2	3
8.9218.7122 L 145 S	22	145	1,6	4
8.9218.7122 L 175 S	22	175	2,1	5
8.9218.7122 L 205 S	22	205	2,5	6
8.9218.7122 L 265 S	22	265	3,3	8
8.9218.7122 L 325 S	22	325	4,2	10
8.9218.7122 L 385 S	22	385	5,0	12
8.9218.7122 L 445 S	22	445	5,8	14
8.9218.7122 L 505 S	22	505	6,7	16
8.9218.7122 L 565 S	22	565	7,5	18
8.9218.7122 L 625 S	22	625	8,4	20
8.9218.7122 L 685 S	22	685	9,2	22
8.9218.7122 L 745 S	22	745	10,0	24
8.9218.7122 L 805 S	22	805	10,9	26
8.9218.7122 L 865 S	22	865	11,7	28
8.9218.7122 L 925 S	22	925	12,6	30
8.9218.7122 L 985 S	22	985	13,4	32

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9218.7128 L 165 S	28	165	1,8	3
8.9218.7128 L 210 S	28	210	2,5	4
8.9218.7128 L 255 S	28	255	3,1	5
8.9218.7128 L 300 S	28	300	3,7	6
8.9218.7128 L 390 S	28	390	5,0	8
8.9218.7128 L 480 S	28	480	6,3	10
8.9218.7128 L 570 S	28	570	7,5	12
8.9218.7128 L 660 S	28	660	8,8	14
8.9218.7128 L 750 S	28	750	10,0	16
8.9218.7128 L 840 S	28	840	11,3	18
8.9218.7128 L 930 S	28	930	12,6	20
8.9218.7128 L 1020 S	28	1020	13,8	22

Part no.	Slot (a) (mm)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9218.7136 L 175 S	36	175	3	3
8.9218.7136 L 220 S	36	220	4	4
8.9218.7136 L 265 S	36	265	5	5
8.9218.7136 L 310 S	36	310	6	6
8.9218.7136 L 400 S	36	400	8	8
8.9218.7136 L 490 S	36	490	10	10
8.9218.7136 L 580 S	36	580	12	12
8.9218.7136 L 670 S	36	670	14	14
8.9218.7136 L 760 S	36	760	16	16
8.9218.7136 L 850 S	36	850	18	18
8.9218.7136 L 940 S	36	940	20	20
8.9218.7136 L 1030 S	36	1030	22	22

Part no.	Slot (a)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9218.7113 L 80 S	13/16"	80	0,6	3
8.9218.7113 L 100 S	13/16"	100	0,8	4
8.9218.7113 L 120 S	13/16"	120	1,1	5
8.9218.7113 L 140 S	13/16"	140	1,3	6
8.9218.7113 L 180 S	13/16"	180	1,7	8
8.9218.7113 L 220 S	13/16"	220	2,2	10
8.9218.7113 L 260 S	13/16"	260	2,6	12
8.9218.7113 L 300 S	13/16"	300	3,0	14
8.9218.7113 L 340 S	13/16"	340	3,5	16
8.9218.7113 L 380 S	13/16"	380	3,9	18
8.9218.7113 L 420 S	13/16"	420	4,4	20
8.9218.7113 L 460 S	13/16"	460	4,8	22
8.9218.7113 L 500 S	13/16"	500	5,2	24

Part no.	Slot (a)	Length (L) (mm)	Max. load (kN)	Number of balls
8.9218.7117 L 115 S	1 1/16"	115	1,2	3
8.9218.7117 L 145 S	1 1/16"	145	1,6	4
8.9218.7117 L 175 S	1 1/16"	175	2,1	5
8.9218.7117 L 205 S	1 1/16"	205	2,5	6
8.9218.7117 L 265 S	1 1/16"	265	3,3	8
8.9218.7117 L 325 S	1 1/16"	325	4,2	10
8.9218.7117 L 385 S	1 1/16"	385	5,0	12
8.9218.7117 L 445 S	1 1/16"	445	5,8	14
8.9218.7117 L 505 S	1 1/16"	505	6,7	16
8.9218.7117 L 565 S	1 1/16"	565	7,5	18
8.9218.7117 L 625 S	1 1/16"	625	8,4	20
8.9218.7117 L 685 S	1 1/16"	685	9,2	22
8.9218.7117 L 745 S	1 1/16"	745	10,0	24
8.9218.7117 L 805 S	1 1/16"	805	10,9	26
8.9218.7117 L 865 S	1 1/16"	865	11,7	28
8.9218.7117 L 925 S	1 1/16"	925	12,6	30
8.9218.7117 L 985 S	1 1/16"	985	13,4	32

S = screw

K = wedge lock