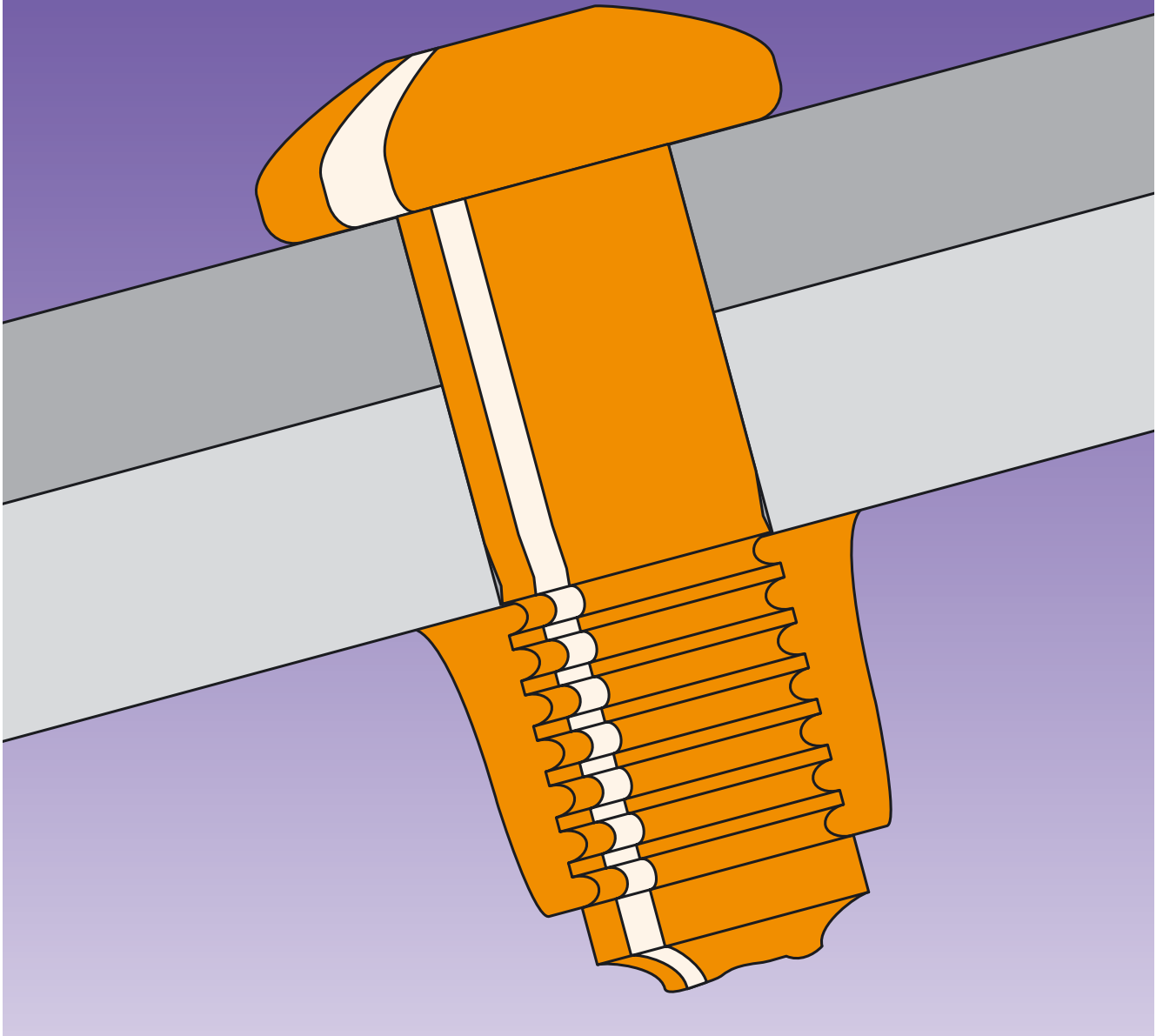


■ Lockbolt-systems Standard



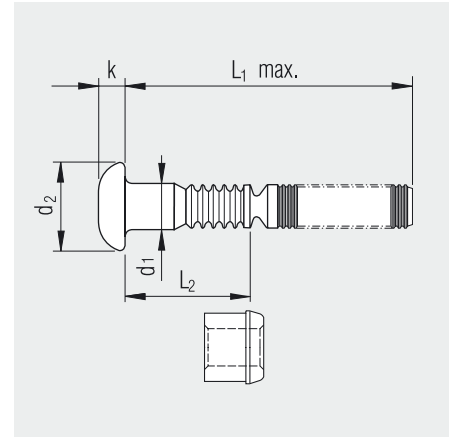
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Lockbolt-systems Standard

Brazier head

Material

Hardened steel (Type 5.8)
zinc, passivate

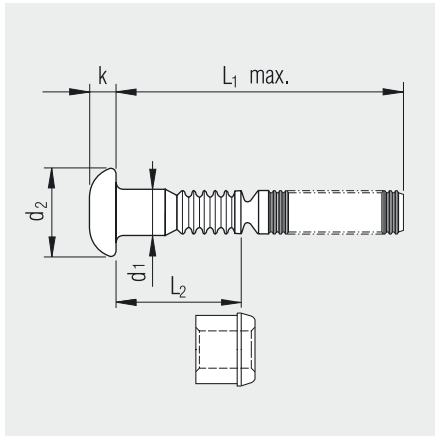


Nominal pin- \emptyset	Hole- \emptyset	Grip range	Dimensions					Shear	Tensile	Clamp	Part No.	
			L ₁ max	L ₂ max	d ₁	d ₂	k max				Collar standard	Pin
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[N]	[N]	[N]	Steel	Steel Type 5.8
6.5	6.8 ^{-0.2}	1.6 – 4.8	42.0	13.2	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 742
		3.2 – 6.4	43.5	14.8	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 743
		4.8 – 7.9	45.0	16.4	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 744
		6.4 – 9.5	47.0	18.0	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 745
		7.9 – 11.1	48.5	19.6	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 746
		11.1 – 14.3	51.5	22.7	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 748
		12.7 – 15.9	53.0	24.3	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 749
		14.3 – 17.5	55.0	25.9	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 750
		15.9 – 19.1	56.5	27.5	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 751
		17.5 – 20.6	58.0	29.1	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 752
		19.1 – 22.2	59.5	30.6	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 753
		20.6 – 23.8	61.0	32.2	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 754
		22.2 – 25.4	62.5	33.9	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 755
		23.8 – 27.0	64.5	35.4	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 756
		25.4 – 28.6	66.0	37.0	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 757
		27.0 – 30.2	67.5	38.6	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 758
28.6 – 31.8	69.0	40.2	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 759		
30.2 – 33.3	70.5	41.8	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 760		
33.3 – 36.6	74.0	45.0	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	13500	13300	8000	376 307	376 762		
10.0	10.0 ^{-0.2}	3.2 – 9.5	57.5	21.4	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 580
		6.4 – 12.7	60.5	24.6	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 581
		9.5 – 15.9	63.5	27.8	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 582
		12.7 – 19.1	67.0	30.9	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 583
		15.9 – 22.2	70.0	34.1	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 584
		19.1 – 25.4	73.5	37.3	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 585
		22.2 – 28.6	76.5	40.5	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 586
		25.4 – 31.8	79.5	43.6	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	378 587
28.6 – 34.9	83.0	46.8	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	30500	28000	17800	376 310	–		

¹ The tensile and clamp strengths were determined using lockbolts without surface finish. These values may be lower on coated lockbolts.

The tensile and clamp strengths are average values determined during testing.
Other lockbolt systems available on request.

We reserve the right to amend specifications at any time.



Brazier head

Material

Hardened steel (Type 8.8)
zinc, passivate

Nominal pin- \varnothing	Hole- \varnothing	Grip range	Dimensions					Shear	Tensile	Clamp	Part No.		
			L ₁ max	L ₂ max	d ₁	d ₂	k max				Collar standard	Pin	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[N]	[N]	[N]	Steel	Steel Type 8.8
5.0	5.2 ^{-0.2}	1.6 – 4.8	38.5	10.8	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 500	
		4.8 – 7.9	41.5	14.0	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 501	
		7.9 – 11.1	44.5	17.2	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 502	
		11.1 – 14.3	48.0	20.4	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 503	
		14.3 – 17.5	51.0	23.5	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 504	
		17.5 – 20.6	54.0	26.7	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 505	
		20.6 – 23.8	57.5	29.9	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 506	
8.0	8.4 ^{-0.2}	23.8 – 27.0	60.5	33.1	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	10800	9700	5300	376 305	376 507	
		1.6 – 7.9	50.0	18.2	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	29800	26700	18600	376 308	376 800	
		4.8 – 11.1	53.5	21.4	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	29800	26700	18600	376 308	376 810	
		6.4 – 12.7	55.0	23.0	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	29800	26700	18600	376 308	376 801	
		12.7 – 19.1	61.5	29.3	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	29800	26700	18600	376 308	376 802	
		19.1 – 25.4	67.5	35.7	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	29800	26700	18600	376 308	376 803	
		25.4 – 31.8	74.0	42.0	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	29800	26700	18600	376 308	376 804	
10.0	10.0 ^{-0.2}	3.2 – 9.5	57.5	21.4	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	42700	41370	26600	376 310	377 130	
		6.4 – 12.7	60.5	24.6	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	42700	41370	26600	376 310	377 140	
		9.5 – 15.9	63.5	27.8	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	42700	41370	26600	376 310	377 131	
		12.7 – 19.1	67.0	30.9	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	42700	41370	26600	376 310	377 132	
		15.9 – 22.2	70.0	34.1	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	42700	41370	26600	376 310	377 133	

¹ The tensile and clamp strengths were determined using lockbolts without surface finish. These values may be lower on coated lockbolts.

The tensile and clamp strengths are average values determined during testing.

Lockbolt systems have a defined grip range.

These grip ranges refer to the use of a standard collar. If flange collars or low profile collars are used, the grip range changes.

Technical data is given in the collar tables.

Collars must be ordered separately.

Lockbolt systems available on request

- in larger diameters and with specific grip ranges
- with extra-large head
- heat treated specifically to suit the application

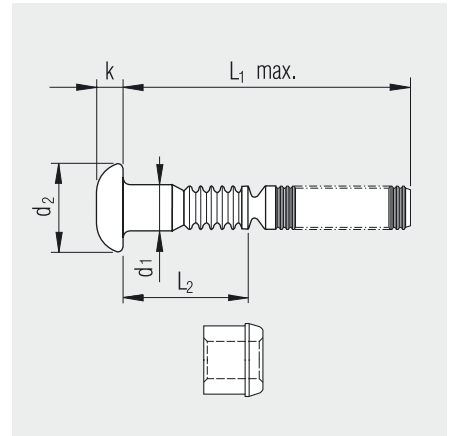
We reserve the right to amend specifications at any time.

Lockbolt-systems Standard

Brazier head

Material

■ Stainless steel



Nominal Pin- \varnothing	Hole- \varnothing	Grip range	Dimensions					Shear	Tensile	Clamp	Part No.	
			L ₁ max	L ₂ max	d ₁	d ₂	k max				Collar standard	Pin
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[N]	[N]	[N]	■ Stainless steel	■ Stainless steel
5.0	5.2 ^{-0.2}	1.6 – 4.8	38.5	10.8	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	7900	6400	4500	376 370	376 474
		3.2 – 6.4	40.0	12.4	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	7900	6400	4500	376 370	376 476
		4.8 – 7.9	41.5	14.0	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	7900	6400	4500	376 370	376 484
		6.4 – 9.5	43.0	15.6	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	7900	6400	4500	376 370	376 473
		7.9 – 11.1	44.5	17.2	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	7900	6400	4500	376 370	376 487
		11.1 – 14.3	48.0	20.4	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	7900	6400	4500	376 370	376 489
6.5	6.8 ^{-0.2}	1.6 – 4.8	42.0	13.2	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	15000	13900	8000	376 371	376 475
		4.8 – 7.9	45.0	16.4	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	15000	13900	8000	376 371	376 486
		7.9 – 11.1	48.5	19.6	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	15000	13900	8000	376 371	376 488
		11.1 – 14.3	51.5	22.7	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	15000	13900	8000	376 371	376 490
		14.3 – 17.5	55.0	25.9	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	15000	13900	8000	376 371	376 491
10.0	10.0 ^{-0.2}	3.2 – 9.5	57.5	21.4	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	29000	27000	17500	376 373	–
		6.4 – 12.7	60.5	24.6	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	29000	27000	17500	376 373	–
		9.5 – 15.9	63.5	27.8	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	29000	27000	17500	376 373	376 478
		12.7 – 19.1	67.0	30.9	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	29000	27000	17500	376 373	376 479
		15.9 – 22.2	70.0	34.1	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	29000	27000	17500	376 373	–

¹ The tensile and clamp strengths were determined using lockbolts without surface finish. These values may be lower on coated lockbolts.

The tensile and clamp strengths are average values determined during testing.

Lockbolt systems have a defined grip range.

These grip ranges refer to the use of a standard collar. If flange collars or low profile collars are used, the grip range changes.

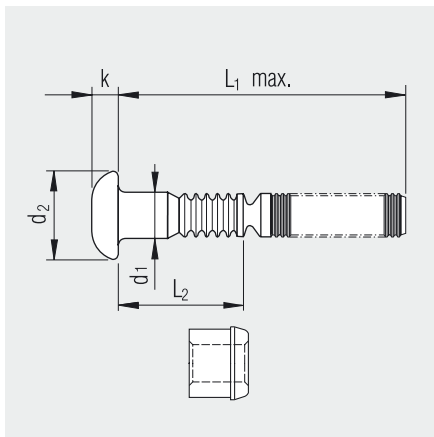
Technical data is given in the collar tables.

Collars must be ordered separately.

Lockbolt systems available on request

- in larger diameters and with specific grip ranges
- with extra-large head

We reserve the right to amend specifications at any time.



Brazier head

Material

■ Aluminium

Nominal pin- \varnothing	Hole- \varnothing	Grip range	Dimensions					Shear	Tensile	Clamp	Part No.		
			L ₁ max	L ₂ max	d ₁	d ₂	k max				Collar standard	Pin	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[N]	[N]	[N]	■ Aluminium	■ Aluminium
5.0	5.2 ^{-0.2}	1.6 – 4.8	38.5	10.8	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	4500	4000	2000	376 395	378 692	
		3.2 – 6.4	40.0	12.4	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	4500	4000	2000	376 395	378 693	
		4.8 – 7.9	41.5	14.0	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	4500	4000	2000	376 395	378 694	
		6.4 – 9.5	43.0	15.6	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	4500	4000	2000	376 395	378 695	
		7.9 – 11.1	44.5	17.2	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	4500	4000	2000	376 395	–	
		11.1 – 14.3	48.0	20.4	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	4500	4000	2000	376 395	–	
		14.3 – 17.5	51.0	23.5	5.0 ^{-0.2}	10.0 ^{-1.0}	3.2	4500	4000	2000	376 395	–	
6.5	6.8 ^{-0.2}	1.6 – 4.8	42.0	13.2	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	8300	8000	4000	376 397	378 725	
		3.2 – 6.4	43.5	14.8	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	8300	8000	4000	376 397	378 726	
		4.8 – 7.9	45.0	16.4	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	8300	8000	4000	376 397	378 727	
		6.4 – 9.5	47.0	18.0	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	8300	8000	4000	376 397	378 728	
		7.9 – 11.1	48.5	19.6	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	8300	8000	4000	376 397	378 729	
8.0	8.4 ^{-0.2}	11.1 – 14.3	51.5	22.7	6.6 ^{-0.2}	13.4 ^{-1.4}	3.9	8300	8000	4000	376 397	378 731	
		3.2 – 9.5	52.0	19.8	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	13000	12500	6500	376 398	378 760	
		6.4 – 12.7	55.0	23.0	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	13000	12500	6500	376 398	378 761	
		9.5 – 15.9	58.0	26.2	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	13000	12500	6500	376 398	378 762	
10.0	10.0 ^{-0.2}	12.7 – 19.1	61.5	29.3	8.2 ^{-0.2}	16.7 ^{-1.7}	5.1	13000	12500	6500	376 398	378 763	
		3.2 – 9.5	57.5	21.4	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	18500	18500	9500	376 399	–	
		6.4 – 12.7	60.5	24.6	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	18500	18500	9500	376 399	378 776	
		9.5 – 15.9	63.5	27.8	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	18500	18500	9500	376 399	378 777	
		12.7 – 19.1	67.0	30.9	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	18500	18500	9500	376 399	378 778	
		15.9 – 22.2	70.0	34.1	9.8 ^{-0.2}	20.0 ^{-2.0}	6.3	18500	18500	9500	376 399	378 779	

¹ The tensile and clamp strengths were determined using lockbolts without surface finish. These values may be lower on coated lockbolts.

The tensile and clamp strengths are average values determined during testing.
Other lockbolt systems available on request.

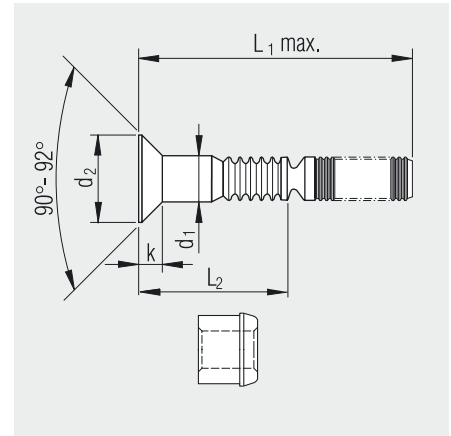
We reserve the right to amend specifications at any time.

Lockbolt-systems Standard

Countersunk head

Material

Hardened steel (Type 8.8)
zinc, passivate



Nominal Pin- \varnothing	Hole- \varnothing	Grip range	Dimensions					Strength			Part No.		
			L ₁ max	L ₂ max	d ₁	d ₂	k max	Shear	Tensile	Clamp	Collar standard	Pin	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[N]	[N]	[N]	Steel	Steel Type 8.8
5.0	5.2 ^{-0.2}	3.2 – 6.4	40.0	12.4	5.0 ^{-0.2}	9.3 ^{-1.0}	2.6	10800	9700	5300	376 305	376 569	
		4.8 – 7.9	41.5	14.0	5.0 ^{-0.2}	9.3 ^{-1.0}	2.6	10800	9700	5300	376 305	376 570	
		7.9 – 11.1	44.5	17.2	5.0 ^{-0.2}	9.3 ^{-1.0}	2.6	10800	9700	5300	376 305	376 571	
		11.1 – 14.3	48.0	20.4	5.0 ^{-0.2}	9.3 ^{-1.0}	2.6	10800	9700	5300	376 305	376 572	
		14.3 – 17.5	51.0	23.5	5.0 ^{-0.2}	9.3 ^{-1.0}	2.6	10800	9700	5300	376 305	376 573	
		17.5 – 20.6	54.0	26.7	5.0 ^{-0.2}	9.3 ^{-1.0}	2.6	10800	9700	5300	376 305	–	
6.5	6.8 ^{-0.2}	4.8 – 7.9	45.0	16.4	6.6 ^{-0.2}	12.0 ^{-1.0}	3.0	19100	16900	10200	376 307	–	
		7.9 – 11.1	48.5	19.6	6.6 ^{-0.2}	12.0 ^{-1.0}	3.0	19100	16900	10200	376 307	378 653	
		11.1 – 14.3	51.5	22.7	6.6 ^{-0.2}	12.0 ^{-1.0}	3.0	19100	16900	10200	376 307	–	
		14.3 – 17.5	55.0	25.9	6.6 ^{-0.2}	12.0 ^{-1.0}	3.0	19100	16900	10200	376 307	–	
8.0	8.4 ^{-0.2}	3.2 – 9.5	52.0	19.8	8.2 ^{-0.2}	15.0 ^{-1.1}	3.7	29800	26700	18600	376 308	–	
		6.4 – 12.7	55.0	23.0	8.2 ^{-0.2}	15.0 ^{-1.1}	3.7	29800	26700	18600	376 308	378 651	
		9.5 – 15.9	58.0	26.2	8.2 ^{-0.2}	15.0 ^{-1.1}	3.7	29800	26700	18600	376 308	–	
		12.7 – 19.1	61.5	29.3	8.2 ^{-0.2}	15.0 ^{-1.1}	3.7	29800	26700	18600	376 308	–	
10.0	10.0 ^{-0.2}	6.4 – 12.7	60.5	24.6	9.8 ^{-0.2}	18.0 ^{-1.2}	4.4	42500	41000	22100	376 310	377 180	
		9.5 – 15.9	63.5	27.8	9.8 ^{-0.2}	18.0 ^{-1.2}	4.4	42500	41000	22100	376 310	–	
		12.7 – 19.1	67.0	30.9	9.8 ^{-0.2}	18.0 ^{-1.2}	4.4	42500	41000	22100	376 310	–	
		15.9 – 22.2	70.0	34.1	9.8 ^{-0.2}	18.0 ^{-1.2}	4.4	42500	41000	22100	376 310	–	
		19.1 – 25.4	73.5	37.3	9.8 ^{-0.2}	18.0 ^{-1.2}	4.4	42500	41000	22100	376 310	378 595	

¹ The tensile and clamp strengths were determined using lockbolts without surface finish. These values may be lower on coated lockbolts.

The tensile and clamp strengths are average values determined during testing.

Lockbolt systems have a defined grip range.

These grip ranges refer to the use of a standard collar. If flange collars or low profile collars are used, the grip range changes.

Technical data is given in the collar tables.

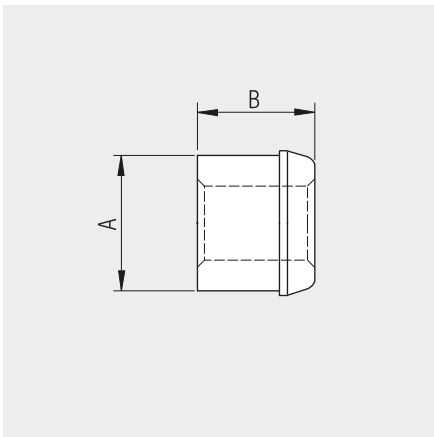
Collars must be ordered separately.

Lockbolt systems available on request

- in larger diameters and with specific grip ranges
- with extra-large head
- heat treated specifically to suit the application

We reserve the right to amend specifications at any time.

Lockbolt-systems Standard Collars for standard lockbolts



Standard collars

Material

- **Steel**
zinc, passivate
- **Stainless steel**
- **Aluminium**

Nominal pin- \varnothing [mm]	Dimensions		Part No.		
	A min [mm]	B max [mm]	■ Steel	■ Stainless steel	■ Aluminium
5.0	7.7	6.2	376 305	376 370	376 395
6.5	10.1	8.2	376 307	376 371	376 397
8.0	12.3	9.5	376 308	–	376 398
10.0	14.9	11.9	376 310	376 373	376 399

All collars are lubricated.

A lockbolt pin is required when ordering a lockbolt system. Lockbolt pins must be ordered separately.

On request:

- collars with other hardnesses
- other surface finishes

We reserve the right to amend specifications at any time.

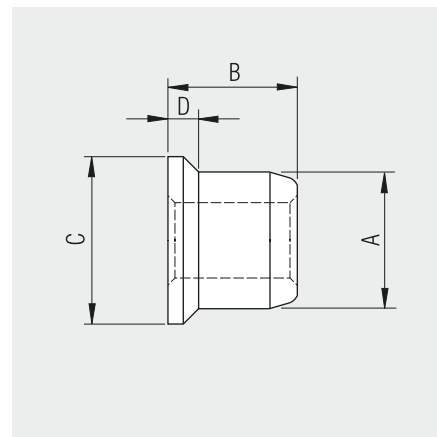
Lockbolt-systems Standard

Collars for standard lockbolts

Flange collars

Material

- **Steel**
zinc, passivate
- **Stainless steel**
- **Aluminium**



Nominal pin- \varnothing	Dimensions				Part No.		
	A min [mm]	B max [mm]	C max [mm]	D ¹ [mm]	■ Steel	■ Stainless steel	■ Aluminium
5.0	7.7	7.0	10.0	1.6	376 325	376 386	376 355
6.5	10.1	9.5	13.2	2.0	376 327	376 387	376 390
8.0	12.5	10.6	16.4	2.4	376 328	–	–
10.0	15.2	13.3	19.7	3.2	376 330	–	376 360

¹ When using flanged collars the grip range is reduced by dimension D, compared to the grip range for standard collars.

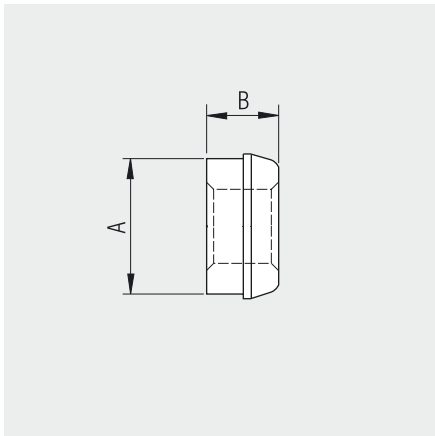
All collars are lubricated.

A lockbolt pin is required when ordering a lockbolt system. Lockbolt pins must be ordered separately.

- On request:
- collars with other hardnesses
 - Other surface finishes

We reserve the right to amend specifications at any time.

Lockbolt-systems Standard Collars for standard lockbolts



Low profile collars

Material

■ **Steel**
zinc, passivate

Nominal pin- \varnothing [mm]	Dimensions			Part No. ■ Steel
	A min [mm]	B max [mm]	C' [mm]	
5.0	7.7	4.3	2.4	376 315
6.5	10.1	5.5	3.2	376 323
8.0	12.3	6.5	3.2	376 318
10.0	15.0	8.5	4.0	376 320

¹ When using low-profile collars the grip range is increased by dimension C, compared to the grip range for standard collars.

All collars are lubricated.

A lockbolt pin is required when ordering a lockbolt system. Lockbolt pins must be ordered separately.

On request:

- collars with other hardnesses
- other surface finishes

We reserve the right to amend specifications at any time.

