

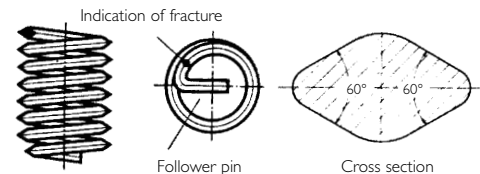
HeliCoil® Plus

In a screw joint reinforcement the first thread carries half the total load - the thread length is badly used.

In a HeliCoil® Plus joint, the load on the first thread is reduced from 50% to 30% of the total screw load. The better load distribution and the larger outer diameter of the HeliCoil® Plus insert make the screw joint stronger, and you can choose a shorter thread length in soft and light materials. At the same time the fatigue strength of the screw is considerably improved. HeliCoil® Plus thread inserts give a strong thread that allows you to use a high resistance screw in soft materials.

Technical data

HeliCoil® Plus wire has tight tolerances and very high surface finish. The wire is shaped as a springing coil with concentric inner and outer thread with follower pin. The material of the wire is stainless chrome-nickel steel (SIS 2333).



Tensile strength: 1400 N/mm²

Surface hardness: 425 HV 0,2

Finish: Rz=2,5 µm

µg: Low thread friction gives high clamping force

Table 148 Recommended lengths of HeliCoil® Plus

Target values for min. length of HeliCoil® Plus thread inserts. The values are affected by material strength, screw quality and are valid at 20°.										
Material strength	Screw property classes									
Tensile strength (N/mm ²)	3.6 4.6	4.8 5.6	5.8 6.6	6.8 6.9	8.8	9.8	10.9	12.9	14.9	
Up to 100	1,5 d	1,5 d	2 d	2,5 d	3 d	3 d	—	—	—	
> 100-150	1,5 d	1,5 d	2 d	2 d	2,5 d	2,5 d	2,5 d	2,5 d	3 d	
> 150-200	1 d	1,5 d	1,5 d	1,5 d	2 d	2 d	2 d	2,5 d	2,5 d	
> 200-250	1 d	1 d	1,5 d	1,5 d	1,5 d	1,5 d	2 d	2,5 d	2,5 d	
> 250-300	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	2 d	2 d	
> 300-350	1 d	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	2 d	
> 350-400	1 d	1 d	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	
> 400	1 d	1 d	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	

The target values are chosen to make the screw the joint's weakest part.

In some cases it is possible to decrease the table's target values. Practical tests are recommended. Other lengths can be delivered.

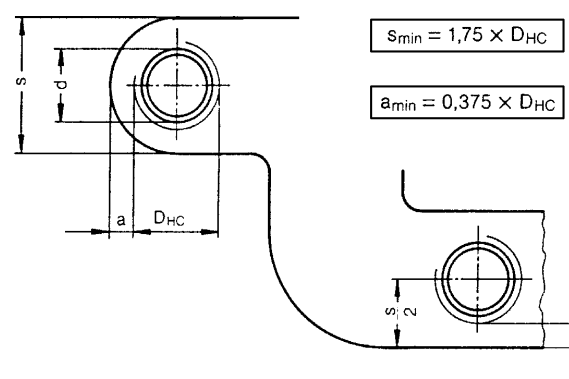
Target values for lowest wall thickness

The measure for lowest wall thickness (a_{min}) is dependent on the operation data of the joint, the material's strength and the thread length. The formula for the recommended a_{min} is valid for aluminium, cast iron and other soft/weak materials where the HeliCoil Plus thread length = 1,5 d.

d = Dimension

D_{HC} = HeliCoil material thread outer diameter

a = Wall thickness



Source: Colly Components AB.

HeliCoil® Plus

The programme

HeliCoil® Plus thread inserts are available in two designs: HeliCoil® Plus and HeliCoil® Plus Screwlock. Characteristics in common for both types are low tolerances and exact thread-profile.



HeliCoil® Plus

The thread insert with its precision-shaped wire creates after assemblage a goods thread of very high quality. The finish-assembled HeliCoil® Plus thread has a tolerance according to DIN 13 6H (on request DIN 13 4H).

For control and safe identification the HeliCoil® Plus is green coloured.



HeliCoil® Plus Screwlock

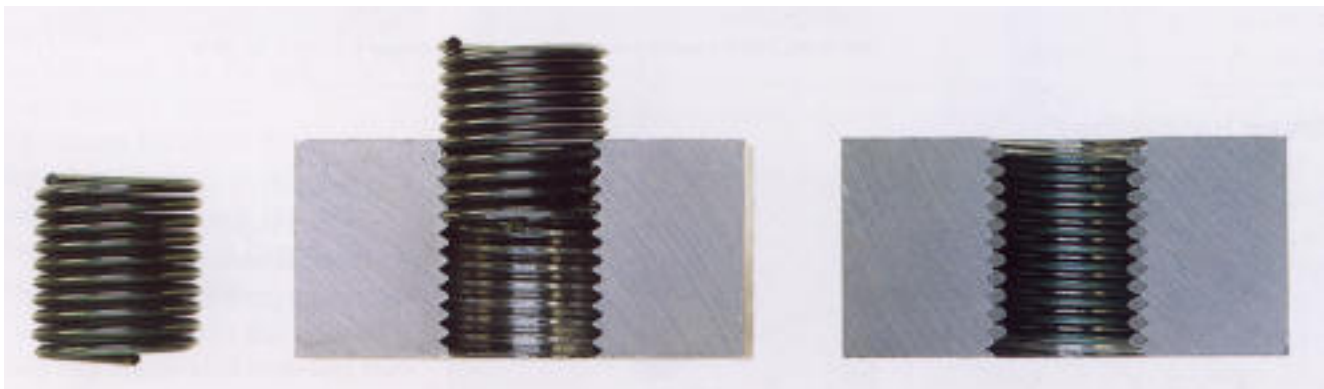
HeliCoil® Plus Screwlock has the same thread technical advantages as the HeliCoil® Plus. Furthermore the thread insert has a built-in screw locking.

The polygon-shaped locking round clamps and locks the screw effectively under dynamic as well as static loads. Standard values for locking torques are according to DIN 267 and ISO 2320.

Screwlock thread inserts are coloured red to easily separate them from the green coloured HeliCoil® Plus.

The thread insert with its locking turn can be used together with a screw with a property class from 8.8.

For stainless screw, lubrication with thread paste is recommended.



HeliCoil® Plus is securely fastened

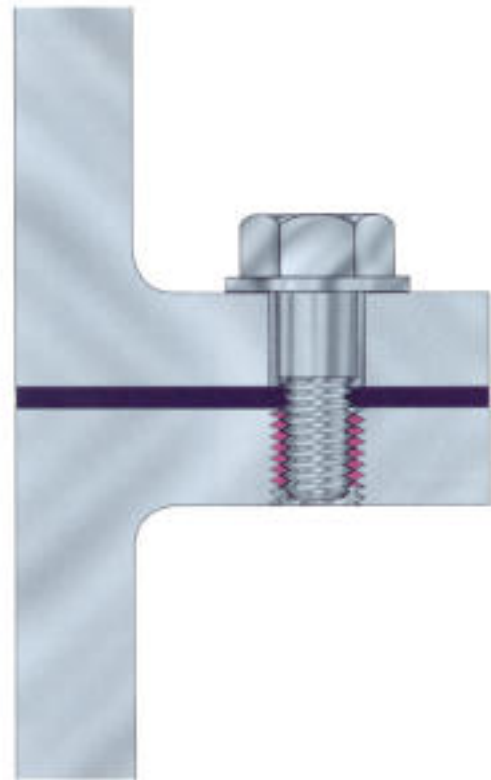
HeliCoil® Plus has before assemblage larger diameter than the goods thread. The larger diameter is carefully calculated, which guarantees that the thread insert is securely fastened

after assemblage. Any extra locking device or gluing is not needed.

Effective screw locking

The low friction of the HeliCoil® Plus gives a high pre-tension. High preserved pre-tension is the safest method for screw locking. In joint reinforcements where high pre-tension cannot be achieved or preserved, for example joint reinforcements with soft gaskets, springing elements or when using short, thick screws, the HeliCoil® Screwlock could advantageously be used.

The thread insert gives maximum safety because the screw is effectively locked in the locking round (the waist grip). No assembler forgets or loses the fastener when you choose HeliCoil® Screwlock. The thread insert is also perfect for adjusting screws. Polygon-shaped elastic locking rounds lock the screw even under dynamic and static loads - safe and reliable. HeliCoil® Screwlock is always delivered in red colour for safe and unequivocal identification.



Joint reinforcement with soft gasket.

**Joint reinforcement with short clamping length.
Screwlock locking nut is the solution.**

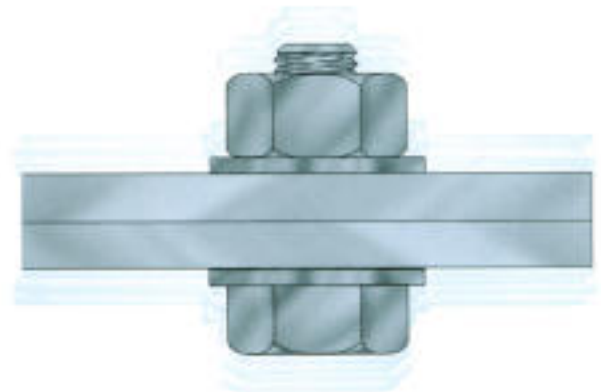


Table 149 Screw locking with HeliCoil® Plus Screwlock

Standard values for the locking torque according to DIN 267 part 15 and ISO 2320. It is valid for coarse and fine pitch of thread. Values in Nm (property class 8.8.)											
Thread	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
1:st tightening, max	0,43	0,90	1,60	3,00	6,00	10,5	15,5	24,0	32,0	42,0	54,0
1:st loosening, min	0,12	0,18	0,29	0,45	0,85	1,5	2,3	3,3	4,5	6,0	7,5
5:th loosening, min	0,08	0,12	0,20	0,30	0,60	1,0	1,6	2,3	3,0	4,2	5,3

Source: Colly Components AB.

Use the right drilling diameter, drilling depth and thread depth for HeliCoil® Plus

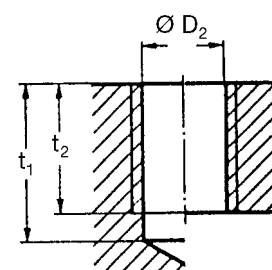
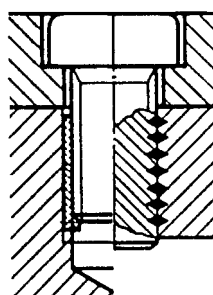
Table 150 HeliCoil® Plus Thread inserts

Dim		Spiral drill $\varnothing D_2$	Thread depth ¹⁾ t_2 min	
d	P	Rec	x d	mm
M 2,5	0,45	2,6	1 d	2,5
			1,5 d	3,75
			2 d	5,0
			2,5 d	6,25
			3 d	7,5
M 3	0,5	3,2	1 d	3,0
			1,5 d	4,5
			2 d	6,0
			2,5 d	7,5
M 3,5	0,6	3,7	1 d	3,5
			1,5 d	5,25
			2 d	7,0
			2,5 d	8,75
M 4	0,7	4,2	1 d	4,0
			1,5 d	6,0
			2 d	8,0
			2,5 d	10,0
M 5	0,8	5,2	1 d	5,0
			1,5 d	7,5
			2 d	10,0
			2,5 d	12,5
M 6	1,0	6,3	1 d	6,0
			1,5 d	9,0
			2 d	12,0
			2,5 d	15,0
M 7	1,0	7,3	1 d	7,0
			1,5 d	10,5
			2 d	14,0
			2,5 d	17,5
M 8	1,25	8,4	1 d	8,0
			1,5 d	12,0
			2 d	16,0
			2,5 d	20,0
M 8 x 1	1,0	8,3	1 d	8,0
			1,5 d	12,0
			2 d	16,0
			2,5 d	20,0
M 9	1,25	9,4	1 d	9,0
			1,5 d	13,5
			2 d	18,0
			2,5 d	22,5
M 10	1,5	10,50	1 d	10,0
			1,5 d	15,0
			2 d	20,0
			2,5 d	25,0
M 10 x 1	1,0	10,25	1 d	10,0
			1,5 d	15,0
			2 d	20,0
			2,5 d	25,0
M 10 x 1,25	1,25	10,40	1 d	10,0
			1,5 d	15,0
			2 d	20,0
			2,5 d	25,0
M 12	1,75	12,50	1 d	12,0
			1,5 d	18,0
			2 d	24,0
			2,5 d	30,0
M 12 x 1,25	1,25	12,25	1 d	12,0
			1,5 d	18,0
			2 d	24,0
			2,5 d	30,0
M 12 x 1,5	1,5	12,50	1 d	12,0
			1,5 d	18,0
			2 d	24,0
			2,5 d	30,0
M 14	2,0	14,50	1 d	14,0
			1,5 d	21,0
			2 d	28,0
			2,5 d	35,0
M 14 x 1,5	1,5	14,50	1 d	14,0
			1,5 d	21,0
			2 d	28,0
			2,5 d	35,0
M 16	2,0	16,50	1 d	16,0
			1,5 d	24,0
			2 d	32,0
			2,5 d	40,0
M 16 x 1,5	1,5	16,50	1 d	16,0
			1,5 d	24,0
			2 d	32,0
			2,5 d	40,0

Source: Colly Components AB.

Dim		Spiral drill $\varnothing D_2$	Thread depth ¹⁾ t_2 min	
d	P	Rec	x d	mm
M 18	2,5	18,75	0,5 d	9,0
			0,75 d	13,5
			1 d	18,0
			1,5 d	27,0
			2 d	36,0
M 18 x 1,5	1,5	18,50	0,5 d	9,0
			0,75 d	13,5
			1 d	18,0
			1,5 d	27,0
M 18 x 2	2,0	18,50	0,5 d	9,0
			0,75 d	13,5
			1 d	18,0
			1,5 d	27,0
M 20	2,5	20,75	0,5 d	10,0
			0,75 d	15,0
			1 d	20,0
			1,5 d	30,0
M 20 x 1,5	1,5	20,50	0,5 d	10,0
			0,75 d	15,0
			1 d	20,0
			1,5 d	30,0
M 20 x 2	2,0	20,50	0,5 d	10,0
			0,75 d	15,0
			1 d	20,0
			1,5 d	30,0
M 22	2,5	22,75	0,5 d	11,0
			0,75 d	16,5
			1 d	22,0
			1,5 d	33,0
M 22 x 2	2,0	22,50	0,5 d	11,0
			0,75 d	16,5
			1 d	22,0
			1,5 d	33,0
M 24	3,0	24,75	0,5 d	12,0
			0,75 d	18,0
			1 d	24,0
			1,5 d	36,0
M 24 x 2	2,0	24,50	0,5 d	12,0
			0,75 d	18,0
			1 d	24,0
			1,5 d	36,0
M 27	3,0	27,75	0,5 d	13,5
			0,75 d	20,3
			1 d	27,0
			1,5 d	40,5
M 30	3,5	31,00	0,5 d	15,0
			0,75 d	22,5
			1 d	30,0
			1,5 d	45,0
M 33	3,5	34,00	0,5 d	16,5
			0,75 d	24,8
			1 d	33,0
			1,5 d	49,5
M 36	4,0	37,00	0,5 d	18,0
			0,75 d	27,0
			1 d	36,0
			1,5 d	54,0
M 36 x 3	3,0	37,00	0,5 d	18,0
			0,75 d	27,0
			1 d	36,0
			1,5 d	54,0

t_1 = Min. drilling depth. See DIN 76 part 1.



All measures in mm.