

Thread Repair Sizing Chart

Tip: STI (Screw Thread Insert) taps are required for HeliCoil installation—standard taps will NOT work.

HeliCoil Insert Sizing - SAE (Inch)

Original Thread	Drill Size	Decimal	STI Tap	Insert Lengths	Min Hole Depth
#4-40	#32	0.116"	4-40 STI	1D, 1.5D, 2D	0.38"
#6-32	#27	0.144"	6-32 STI	1D, 1.5D, 2D	0.44"
#8-32	#21	0.159"	8-32 STI	1D, 1.5D, 2D	0.50"
#10-24	#10	0.194"	10-24 STI	1D, 1.5D, 2D	0.56"
#10-32	#4	0.209"	10-32 STI	1D, 1.5D, 2D	0.56"
1/4"-20	#3	0.213"	1/4-20 STI	1D, 1.5D, 2D	0.63"
1/4"-28	#1	0.228"	1/4-28 STI	1D, 1.5D, 2D	0.63"
5/16"-18	Q	0.332"	5/16-18 STI	1D, 1.5D, 2D	0.78"
5/16"-24	I	0.272"	5/16-24 STI	1D, 1.5D, 2D	0.78"
3/8"-16	Y	0.404"	3/8-16 STI	1D, 1.5D, 2D	0.94"
3/8"-24	25/64"	0.391"	3/8-24 STI	1D, 1.5D, 2D	0.94"
7/16"-14	29/64"	0.453"	7/16-14 STI	1D, 1.5D, 2D	1.09"
7/16"-20	27/64"	0.422"	7/16-20 STI	1D, 1.5D, 2D	1.09"
1/2"-13	17/32"	0.531"	1/2-13 STI	1D, 1.5D, 2D	1.25"
1/2"-20	29/64"	0.453"	1/2-20 STI	1D, 1.5D, 2D	1.25"
9/16"-12	19/32"	0.594"	9/16-12 STI	1D, 1.5D, 2D	1.41"
5/8"-11	21/32"	0.656"	5/8-11 STI	1D, 1.5D, 2D	1.56"
5/8"-18	19/32"	0.594"	5/8-18 STI	1D, 1.5D, 2D	1.56"
3/4"-10	25/32"	0.781"	3/4-10 STI	1D, 1.5D, 2D	1.88"
3/4"-16	23/32"	0.719"	3/4-16 STI	1D, 1.5D, 2D	1.88"

HeliCoil Insert Sizing - Metric

Original Thread	Drill Size (mm)	STI Tap	Insert Lengths	Min Hole Depth
M3 x 0.5	3.2	M3x0.5 STI	1D, 1.5D, 2D	6mm
M4 x 0.7	4.3	M4x0.7 STI	1D, 1.5D, 2D	8mm
M5 x 0.8	5.4	M5x0.8 STI	1D, 1.5D, 2D	10mm
M6 x 1.0	6.4	M6x1.0 STI	1D, 1.5D, 2D	12mm
M8 x 1.25	8.5	M8x1.25 STI	1D, 1.5D, 2D	16mm
M10 x 1.5	10.7	M10x1.5 STI	1D, 1.5D, 2D	20mm
M12 x 1.75	12.8	M12x1.75 STI	1D, 1.5D, 2D	24mm
M14 x 2.0	15.0	M14x2.0 STI	1D, 1.5D, 2D	28mm
M16 x 2.0	17.0	M16x2.0 STI	1D, 1.5D, 2D	32mm
M18 x 2.5	19.2	M18x2.5 STI	1D, 1.5D, 2D	36mm
M20 x 2.5	21.2	M20x2.5 STI	1D, 1.5D, 2D	40mm

- Insert Length Guide (D = Bolt Diameter):**
- **1.0D:** Light duty, low-stress applications
 - **1.5D:** Standard - recommended for most applications
 - **2.0D:** Heavy duty, high-stress, or soft materials (aluminum/magnesium)

Thread Repair Sizing Chart (Page 2)

Oversized Repair Options - SAE

Original Size	Tap Drill	1st Oversize	Tap Drill	2nd Oversize	Tap Drill
#10-24	#25	1/4"-20	#7	5/16"-18	F
1/4"-20	#7	5/16"-18	F	3/8"-16	5/16"
5/16"-18	F	3/8"-16	5/16"	7/16"-14	U
3/8"-16	5/16"	7/16"-14	U	1/2"-13	27/64"
7/16"-14	U	1/2"-13	27/64"	9/16"-12	31/64"
1/2"-13	27/64"	9/16"-12	31/64"	5/8"-11	17/32"
5/8"-11	17/32"	3/4"-10	21/32"	7/8"-9	49/64"
3/4"-10	21/32"	7/8"-9	49/64"	1"-8	7/8"

Oversized Repair Options - Metric

Original Size	Tap Drill	1st Oversize	Tap Drill	2nd Oversize	Tap Drill
M4 x 0.7	3.3mm	M5 x 0.8	4.2mm	M6 x 1.0	5.0mm
M5 x 0.8	4.2mm	M6 x 1.0	5.0mm	M8 x 1.25	6.8mm
M6 x 1.0	5.0mm	M8 x 1.25	6.8mm	M10 x 1.5	8.5mm
M8 x 1.25	6.8mm	M10 x 1.5	8.5mm	M12 x 1.75	10.2mm
M10 x 1.5	8.5mm	M12 x 1.75	10.2mm	M14 x 2.0	12.0mm
M12 x 1.75	10.2mm	M14 x 2.0	12.0mm	M16 x 2.0	14.0mm

Spark Plug Thread Repair Sizing

Spark Plug Thread	Drill Size	STI Tap	Insert Length	Application
10mm x 1.0	10.7mm	M10x1.0 STI	11.7mm	Small engine, motorcycle
12mm x 1.25	12.8mm	M12x1.25 STI	15mm	Motorcycle, ATV
14mm x 1.25	15.0mm	M14x1.25 STI	11.7mm (short)	Automotive - standard reach
14mm x 1.25	15.0mm	M14x1.25 STI	17.5mm (long)	Automotive - long reach
18mm x 1.5	19.2mm	M18x1.5 STI	12mm	Older automotive, industrial

Key Notes:

- Always use STI (Screw Thread Insert) taps for HeliCoil—standard taps have different thread form
- Tap depth should be 1/4 turn deeper than insert length
- Clean all chips before installing insert
- For blind holes, leave 1/4 turn clearance at bottom for debris

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