Self-Tapping Sheet-Metal Screw Pilot Hole Chart

Pilot drill bit for each sheet-metal screw gauge by metal thickness · number size and nearest fraction

SCREW	THIN SHEET (24–28 GA)	STANDARD (18–22 GA)	THICK / HARDENED (16 GA+)	NEAREST FRACTION
#4	#44 0.086"	#42 0.0935"	—	3/32"
#6	#37 0.104"	#35 0.11"	—	7/64"
#8	#32 0.116"	#32 0.116"	#30 0.1285"	1/8"
#10	#27 0.144"	#27 0.144"	#27 0.144"	9/64"
#12	#19 0.166"	#19 0.166"	#18 0.1695"	5/32"
#14	#13 0.185"	#13 0.185"	#11 0.191"	3/16"

Self-tapping screws DO need a pilot hole in metal — "self-tapping" means the screw cuts its own THREADS, not that it drills the steel. (A self-DRILLING / TEK screw bores its own hole and needs no pilot — a different fastener.) Size the pilot to the screw's root diameter.

The number columns are the precise pilot sizes; the last column is the nearest fractional bit most people own and is fine for general work. Thin sheet takes a slightly smaller pilot (more thread grip); thick or hardened stock a slightly larger one (so the screw doesn't shear). #4 and #6 aren't used in thick or hardened stock. A larger 1/4" self-tapping screw takes a 1/4" bit.

Sheet-metal pilot sizes vary by gauge and alloy (a #8 runs 0.110" to 0.1285" across sources) — treat these as starting points and test on a scrap offcut. Use a sharp HSS (or cobalt) bit at slow speed, centre-punch first so the bit doesn't walk, add cutting fluid on 1/8"+ stock, and deburr the hole. For structural work follow the screw manufacturer's data.