

Approximate Tonnage Required for Punching Round Holes in Mild Steel (50,000 psi shear strength)

Hole Dia. in Inches	20 GA. .036	18 GA. .048	16 GA. .060	14 GA. .075	12 GA. .105	11 GA. .120	10 GA. .135	3/16 .187	1/4 .250	5/16 .312	3/8 .375	1/2 .500
1/8	.35	.47	.59	.74	1.0	1.2	—	—	—	—	—	—
3/16	.53	.71	.89	1.1	1.6	1.8	2.0	2.8	—	—	—	—
1/4	.71	.94	1.2	1.5	2.1	2.4	2.7	3.7	4.9	—	—	—
5/16	.88	1.2	1.5	1.9	2.6	3.0	3.3	4.6	6.2	7.8	—	—
3/8	1.1	1.4	1.8	2.2	3.1	3.5	4.0	5.5	7.4	9.2	11.1	—
7/16	1.2	1.7	2.1	2.6	3.6	4.1	4.6	6.5	8.6	10.8	13.0	17.2
1/2	1.4	1.9	2.4	2.9	4.1	4.7	5.3	7.4	9.8	12.3	14.8	19.7
9/16	1.6	2.1	2.7	3.3	4.7	5.3	6.0	8.3	11.0	13.8	16.6	22.1
5/8	1.8	2.4	2.9	3.7	5.2	5.9	6.6	9.2	12.3	15.4	18.5	24.6
11/16	1.9	2.6	3.2	4.1	5.7	6.5	7.3	10.2	13.5	16.9	20.3	27.1
3/4	2.1	2.8	3.5	4.4	6.2	7.1	8.0	11.1	14.8	18.4	22.1	29.5
13/16	2.3	3.1	3.8	4.8	6.7	7.7	8.6	12.0	16.0	20.0	24.0	32.0
7/8	2.5	3.3	4.1	5.2	7.2	8.3	9.3	12.9	17.2	21.5	25.8	34.4
15/16	2.7	3.5	4.4	5.5	7.7	8.8	10.0	13.8	18.5	23.0	27.7	36.9
1	2.8	3.8	4.7	5.9	8.3	9.4	10.6	14.8	19.7	24.6	29.5	39.4
1-1/2	4.2	5.6	7.0	8.8	12.3	14.1	15.8	22.1	29.5	36.8	44.2	58.9
2	5.6	7.5	9.4	11.7	16.4	18.8	21.1	29.5	39.3	49.1	58.9	78.5
2-1/2	7.1	9.4	11.7	14.7	20.5	23.6	26.4	36.8	49.1	61.4	73.6	98.2
3	8.5	11.3	14.1	17.6	24.6	28.2	31.7	44.2	58.9	73.6	88.4	118
3-1/2	9.9	13.1	16.4	20.5	28.8	32.7	37.0	51.5	68.7	85.9	103	137
4	11.3	15.0	18.8	23.5	32.8	37.6	42.2	58.9	78.5	98.2	118	157
4-1/2	12.7	16.9	21.2	26.4	37.0	42.4	47.5	66.3	88.4	110	133	177
5	14.1	18.7	23.5	29.3	41.1	47.1	52.8	73.6	98.2	123	147	196

To obtain tonnage required for punching round holes in mild steel multiply as follows:
 $3.1416 \times \text{Diameter of Hole} \times \text{Material Thickness} \times 25 = \text{Punching Tonnage Required for One Hole}$