

Ironworker punching data reprinted from "Operator's Manual Model 314" by Scotchman Industries

Tons required per hole to punch mild steel having 60,000 PSI tensile strength

HOLE DIAMETER		1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1
Metal Gauge	Thickness Inches	PRESSURE IN TONS														
28	0.015	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3
26	0.018	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.4
24	0.024	0.2	0.4	0.5	0.6	0.5	0.8	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.8	1.9
22	0.030	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.6	1.8	1.9	2.1	2.2	2.4
20	0.036	0.4	0.5	0.7	0.9	1.1	1.2	1.4	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.8
18	0.048	0.5	0.7	0.9	1.2	1.4	1.6	1.9	2.1	2.4	2.6	2.8	3.1	3.3	3.5	3.8
16	0.060	0.6	0.9	1.2	1.5	1.8	2.1	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.4	4.7
14	0.075	0.7	1.1	1.5	1.8	2.2	2.6	2.9	3.3	3.7	4.0	4.4	4.8	5.1	5.5	5.9
12	0.105	1.0	1.5	2.1	2.6	3.1	3.6	4.1	4.6	5.1	5.7	6.2	6.7	7.2	7.7	8.2
11	0.120	1.2	1.8	2.4	2.9	3.5	4.1	4.7	5.1	5.9	6.2	7.1	7.6	8.3	8.8	9.4
10	0.135	1.3	2.0	2.6	3.3	4.0	4.6	5.3	5.9	6.6	7.3	7.9	8.6	9.2	9.9	10.6
5/32"	0.157	-	2.3	3.1	3.8	4.6	5.4	6.1	6.9	7.7	8.4	9.2	10.0	10.7	11.5	12.3
3/16"	0.188	-	2.8	3.7	4.6	5.5	6.4	7.4	8.3	9.2	10.1	11.0	12.0	12.9	13.8	14.8
1/4"	0.250	-	-	4.9	6.1	7.4	8.6	9.8	11.1	12.3	13.5	14.7	16.0	17.2	18.4	19.7
3/8"	0.375	-	-	-	-	11.1	12.8	14.8	16.5	18.5	20.2	22.1	23.8	25.8	27.5	29.5
1/2"	0.500	-	-	-	-	-	-	19.7	22.0	24.6	26.9	29.5	31.8	34.4	36.8	39.4
5/8"	0.625	-	-	-	-	-	-	-	-	30.8	33.7	36.9	39.9	43.0	46.0	49.2
3/4"	0.750	-	-	-	-	-	-	-	-	-	-	44.3	47.7	51.7	55.2	59.0
1"	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.0

"RULES OF THUMB" for punching

1. Do not punch material thicker than the diameter of the punch.
2. Punch full complete holes, do not punch partial holes, or past edge of material.
3. Keep hole edge one material thickness from workpiece edge.
4. Do not work with dull or damaged tooling.
5. Stay within rated punching capacities (see above chart)