

# Multiplier Chart for Various Materials

Above chart shows tonnage for punching holes in mild steel (50,000 psi).  
For punching materials of different shear strength, use multiplier in chart below.

Material Description	Tons Per Sq. In.	Yield or Shear Strength Per Sq. In.	Multiplier
Aluminum — Soft Sheet	7-1/2	15,000 psi	.30
Aluminum — Half Hard	9-1/2	19,000 psi	.38
Aluminum — Hard	12	25,000 psi	.50
Brass — Soft Sheet	15	30,000 psi	.60
Brass — Half Hard	17-1/2	35,000 psi	.70
Copper — Rolled	14	28,000 psi	.56
Steel — Mild	25	50,000 psi	1.00
Steel — ASTM - A36	30	60,000 psi	1.20
Steel — 50 Carbon	35	70,000 psi	1.40
Steel — Cold Drawn	30	60,000 psi	1.20
Steel — Stainless (18 - 8)	35	70,000 psi	1.40