

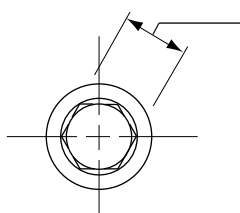
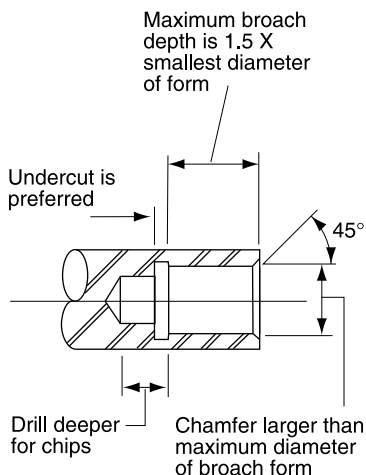
Internal Broaches – Approximate Thrust Lbs. for Broaching

Form	Material						
	Aluminum (6061) 60 Brinell	F.C. Brass (360) 78 Brinell	Screw Stk. (12L14) 163 Brinell	Alloy (8620) 187 Brinell	F.C. S.S. (303SS) 160 Brinell	Super Alloy 200 Brinell	Pre-Heat Treated 277 Brinell
1/8" Square	90	95	120	150	177	200	228
1/2" Square	1430	1670	1910	2385	2623	3100	3534
1" Square	5700	6650	7600	9500	11,400	12,350	14,250
1/8" Hex	41	48	54	68	81	88	148
1/2" Hex	636	742	848	1060	1272	1378	1571
1" Hex	2530	2950	3371	4215	5060	5480	6251
Serrations							
3/8" 14 Teeth	166	133	220	190	331	360	415
Serrations							
1" 36 Teeth	1178	1319	1571	1885	2356	2552	2945

External Broaches – Approximate Thrust Lbs. for Broaching

Form	Material						
	Aluminum (6061) 60 Brinell	F.C. Brass (360) 78 Brinell	Screw Stk. (12L14) 163 Brinell	Alloy (8620) 187 Brinell	F.C. S.S. (303SS) 160 Brinell	Super Alloy 200 Brinell	Pre-Heat Treated 277 Brinell
1/8 Square	114	133	152	190	228	247	285
1/2 Square	1696	979	2262	2827	3393	3676	4241
1" Square	6786	7917	9048	11,310	13,571	14,703	16,964
1/8 Hex	52	61	69	87	104	113	190
1/2 Hex	785	917	1047	1310	1570	1702	1964
1" Hex	3142	3666	4188	5236	6284	6807	7765
Serrations							
3/8 14 Teeth	199	232	265	332	397	431	497
Serrations							
1" 36 Teeth	1414	1650	1885	2356	2827	3063	3535

INTERNAL EXAMPLE:



Pre-drilled hole to be equal to or larger than smallest diameter of broach form

NOTE: For improved tool life, use a larger pre-drilled hole.

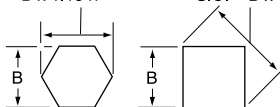
Example:

Hex: $B \times 1.035$
= Pre-drilled hole

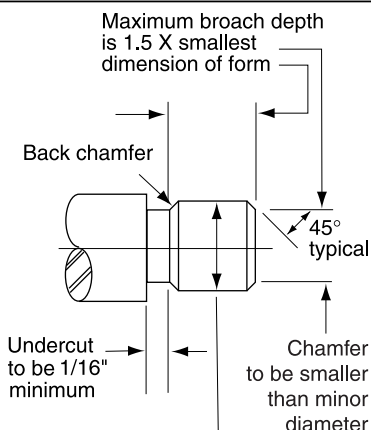
Square: $B \times 1.10$
= Pre-drilled hole

S.C. = $B \times 1.1547$

S.C. = $B \times 1.4142$



EXTERNAL EXAMPLE:



NOTE: For improved tool life, turn diameter smaller.

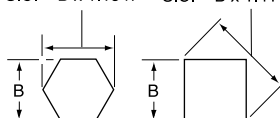
Example:

Hex:
 $\frac{B \times 1.1547 = \text{S.C.}}{1.035}$ = Pre-turned diameter

Square:
 $\frac{B \times 1.4142 = \text{S.C.}}{1.10}$ = Pre-turned diameter

S.C. = $B \times 1.1547$

S.C. = $B \times 1.4142$



For 100% clean form, turn diameter $\pm .0015$ of major diameter.