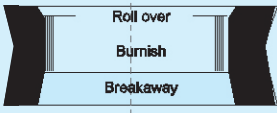
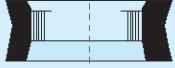





Guide to Punch & Die Clearances

Hole Type & Variation Dependent on Clearance	Tight Clearance	Normal Clearance	Optimum Clearance	Maximum Clearance (Extended tool life)
				
			Use with ejector punches	
Aluminium, Hard	1-2%	4-8%	12-15%	16-20%
Aluminium, Soft	1-2%	10-12%	18-20%	25-28%
Brass, 1/2 Hard	1-3%	4-6%	12-16%	16-20%
Brass, Annealed	3-5%	6-10%	12-16%	18-22%
Bronze, 1/2 Hard	1-3%	7-10%	20-24%	25-27%
Copper, 1/2 Hard	2-4%	6-10%	12-16%	18-22%
Copper, Annealed	1-2%	4-8%	10-14%	16-18%
Magnesium	1-2%	3-6%	7-9%	10-14%
Stainless, Annealed	2-4%	6-10%	18-22%	25-27%
Steel, High Carbon	5-10%	22-25%	26-32%	33-36%
Steel, Low Carbon	2-4%	10-14%	16-20%	16-23%

All above clearances are total % allowance of material thickness.

Formula for Calculating Blanking Pressure

Blanking Pressure in tons : $P = LTS/1000$ kgs.

L = Length of Cut
T = Thickness of material
S = Shear Strength of material

Stripping Pressure

Stripping Pressure will not normally exceed 10% of Blanking pressure under normal conditions.

	Material Group	High Carbon Steel Hard Bronze Spring Steel	Stainless Steel Medium Carbon Steel	Low Carbon Steel Hard Aluminium Hard Brass	Soft Brass Aluminium Copper
Shear Strength	lb/in ² kg/cm ²	100,000 - 200,000 7000 - 14000	60,000 - 100,000 4200 - 7000	40,000 - 60,000 2800 - 4200	30,000 - 40,000 2100 - 2800

These are guide lines only. BEP accept no liability.