TORRINGTON
FORMING MACHINERY INC.

ENGINEERING SELECTION CHART

TYPE	AIR OPERATED					HYDRAULIC OPERATED						
MODEL	206	220	222	260	264	320	322	360	364	7	7S	7S - DS
Stroke/Cycle	1	1	2	2	1 to 4	1	2	2	4	1	1	2
Tube OD (in)	1/8 - 3/4	1/4 - 2	1/4 - 2	1/8 - 3/4	1/8 - 3/4	1/4 - 2 1/2	1/4 - 2 1/2	1/8 - 1	1/8 - 1	1/4 - 3 1/2	1/4 - 3 1/2	1/4 - 3 1/2
Forming stroke (in)	2	4	4	1 1/2	1 1/2	4	6	4	4	6	15	15
Forming force (ton)	2	3.2	3.2	5	5	9.5	9.5	6.3	6,3	21	21	21
based on (psi)[1]	80	80	80	80	80	1000	1800	1080	1000	1000	1000	1000
Clamp stroke (in)	3/4	1 1/2	1 1/2	7/8	7/8	1 7/8	1 7/8	1	1	2	2	2
Clamp force (ton)	3.2	4.5	4.5	5	5	12.5	12.5	10	10	28.5	28.5	28.5
O/A Size LxW (in)	34 x 24	39 x 26	42 x 24	34 x 26	34 x 26	40 x 86	47 x 86	34 x 60	34 x 24	55 x 60	85 x 66	85 x 66
Shipping weight (lb)	800	1300	2000	1700	1700	300	350	2200	2200	5500	6000	6500
Production rate (pt/h)[2]	1200	1200	1200	1500	1500	1100	780	1100	1100	600	600	600
Work center (in)	17	43	39	38	38	39	39	38	38	42	42	42

[1] For air operated machines 125 psi maximum and for hydraulically operated machines 1500 psi maximum

[2] Production rate is estimated on machine cycle time and dexterity of the operator to load and unload a part. Machine cycle varies with length of work stroke and number of strokes

COMMON F VALUES	
REDUCTION	0.7
EXPANSION	0.7
SINGLE FLARE	0.7
DOUBLE FLARE	1.5
BEADING	1.5
FLANGING	1.0
COINING	3.0

COMMON T VALUES	
SOFT MATERIALS (copper, aluminium, etc.)	30,000 psi
MILD STEEL	60,000 psi
SPECIALS STEELS	90,000 psi

FORMING FORCE EQUATION P = C.A. x T x F
C.A. = CROSS SECTIONAL AREA OF THE TUBE
T = TENSILE STRENGTH OF TUBE MATERIAL
F = FORMING FACTOR