

TOOLING SELECTION GUIDE

$$\text{"D" of Bend} = \frac{\text{centerline radius}}{\text{tube outside diameter}}$$

$$(2.0 \text{ C.L.R.} \div 1.0" \text{ O.D.} = 2 \times \text{D})$$

Wall Factor = $\frac{\text{tube outside diameter}}{\text{wall of tube}}$ (2.0" O.D. \div .032 = 62.5 W. F.)

"D" of bend	1 x D		1.50 x D		2 x D		2.50 x D		3 x D		3.5 x D	
	90°	180°	90°	180°	90°	180°	90°	180°	90°	180°	90°	180°
10 Ferrous Non-Ferrous	P P	P P	P P	P P	P P	P P						
* 20 Ferrous Non-Ferrous	RP-1 RP-1	RP-1 RP-2	RP-1 RP-2	RP-1 RP-2	RP-1 RP-2	RP-1 RP-2	P RP-1	P RP-1	P P	P P		
30 Ferrous Non-Ferrous	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	RP-1 RP-2	RP-1 RP-2	P RP-1	P RP-1	P P	P P
40 Ferrous Non-Ferrous	RP-3 CP-4	RP-3 CP-4	RP-3 CP-4	RP-3 CP-4	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	RP-1 RP-3	RP-1 RP-3	P RP-2	P RP-2
50 Ferrous Non-Ferrous	CP-4 CP-4	CP-4 CP-4	CP-3 CP-4	CP-3 CP-4	RP-3 CP-4	RP-3 CP-4	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	RP-2 RP-3	P RP-2	P RP-2
60 Ferrous Non-Ferrous	CP-4 CP-5	CP-4 CP-5	CP-4 CP-4	CP-4 CP-4	CP-4 CP-4	CP-4 CP-4	RP-3 CP-4	RP-3 CP-4	RP-3 RP-3	RP-3 RP-3	RP-1 RP-1	RP-1 RP-1
70 Ferrous Non-Ferrous	CP-5 UCP-6	CP-6 UCP-6	CP-5 UCP-6	CP-6 UCP-6	CP-4 CP-4	CP-5 CP-4	CP-4 CP-4	CP-4 CP-4	RP-3 CP-4	RP-4 CP-4	RP-1 RP-2	RP-1 RP-2
80 Ferrous Non-Ferrous	CP-5 UCP-6	CP-5 UCP-8	CP-5 UCP-6	CP-6 UCP-8	CP-4 UCP-5	CP-4 UCP-6	CP-4 CP-4	CP-4 CP-5	RP-3 CP-4	RP-3 CP-4	RP-1 RP-3	RP-1 RP-3
90 Ferrous Non-Ferrous	UCP-6 UCP-8	UCP-8 UCP-10	UCP-5 UCP-8	UCP-5 UCP-10	CP-4 UCP-6	CP-4 UCP-6	CP-4 UCP-6	CP-4 UCP-6	CP-4 CP-4	CP-4 CP-4	RP-3 RP-3	RP-3 RP-3
100 Ferrous Non-Ferrous	UCP-6 UCP-8	UCP-8 UCP-8	UCP-6 UCP-8	UCP-6 UCP-8	UCP-5 UCP-8	UCP-5 UCP-8	UCP-5 UCP-6	UCP-5 UCP-6	UCP-5 UCP-5	UCP-5 UCP-5	CP-4 CP-5	CP-4 CP-5
125 Ferrous Non-Ferrous			UCP-6 UCP-6	UCP-6 UCP-6	UCP-6 UCP-6	UCP-6 UCP-6	UCP-5 UCP-6	UCP-5 UCP-6	UCP-5 UCP-6	UCP-5 UCP-6	CP-4 CP-4	CP-4 CP-4
150 Ferrous Non-Ferrous	CAUTION:				UCP-8 UCP-8	UCP-8 UCP-8	UCP-6 UCP-8	UCP-6 UCP-8	UCP-6 UCP-6	UCP-6 UCP-6	CP-5 UCP-6	CP-5 UCP-6
175 Ferrous Non-Ferrous	BETTER CALL:						UCP-6 UCP-6	UCP-6 UCP-6	UCP-6 UCP-8	UCP-6 UCP-8	CP-6 UCP-8	CP-6 UCP-8
200 Ferrous Non-Ferrous	TOOLS FOR BENDING, INC.								UCP-6 UCP-6	UCP-6 UCP-6	CP-6 CP-6	CP-6 CP-6

KEY P-Plug or Empty-Bending
 RP-Regular Pitch
 CP-Close Pitch
 UCP-Ultra Close Pitch
 No. indicates suggested number of balls

NOTE: 1. The Empty-Bending system (without a mandrel or wiper die) is recommended for applications above the dotted line.
 2. A wiper die is recommended for applications below the dotted line.
 3. "H" style, brute, chain link mandrel in regular pitch, close pitch, and ultra-close pitch.
 4. All mandrels are available with lube holes and grooves and finished in chrome, Kro-Lon AMPCO bronze.