



## Brake press set up aids



Tons required per linear foot to bend mild steel plate having 60,000 P.S.I. tensile strength

The tonnage indicated in **black boxes** are for die openings 8 times thickness of metal

Thickness of metal

Width of die opening

| Gauge | Inches | 1/8" | 5/16" | 3/8" | 7/16" | 1/2" | 21/32" | 3/4" | 7/8" | 1"   | 1 1/8" | 1 1/4" | 1 1/2" | 2"    | 2 1/8" | 3"    | 3 1/8" | 4"   | 5"   | 6"   | 7" | 8" | 10" | 12" |  |
|-------|--------|------|-------|------|-------|------|--------|------|------|------|--------|--------|--------|-------|--------|-------|--------|------|------|------|----|----|-----|-----|--|
| 20    | 0.036  | 3.1  | 2.3   | 1.7  | 1.4   | 1.1  |        |      |      |      |        |        |        |       |        |       |        |      |      |      |    |    |     |     |  |
| 18    | 0.048  | 5.3  | 4.0   | 3.0  | 2.5   | 2.2  | 1.7    | 1.3  |      |      |        |        |        |       |        |       |        |      |      |      |    |    |     |     |  |
| 16    | 0.060  | 9.6  | 7.1   | 5.6  | 4.5   | 3.8  | 2.8    | 2.2  | 1.8  | 1.5  |        |        |        |       |        |       |        |      |      |      |    |    |     |     |  |
| 14    | 0.075  |      | 11.9  | 9.2  | 7.6   | 6.3  | 4.7    | 3.5  | 3.0  | 2.5  | 2.1    | 1.8    |        |       |        |       |        |      |      |      |    |    |     |     |  |
| 12    | 0.105  |      |       | 16.7 | 13.1  | 9.7  | 8.0    | 6.5  | 5.6  | 4.6  | 4.1    | 3.2    |        |       |        |       |        |      |      |      |    |    |     |     |  |
| 11    | 0.120  |      |       |      | 19.2  | 14.2 | 11.1   | 9.0  | 7.5  | 6.3  | 5.5    | 4.4    | 2.9    |       |        |       |        |      |      |      |    |    |     |     |  |
| 10    | 0.135  |      |       |      |       | 18.6 | 14.5   | 11.9 | 9.9  | 8.5  | 7.3    | 5.8    | 4.0    |       |        |       |        |      |      |      |    |    |     |     |  |
| 3/16  | 0.188  |      |       |      |       |      | 27.4   | 23.1 | 19.3 | 16.4 | 14.3   | 11.2   | 7.5    | 5.7   | 4.4    |       |        |      |      |      |    |    |     |     |  |
| 1/4   | 0.250  |      |       |      |       |      |        | 39.4 | 33.3 | 29.5 | 22.7   | 15.4   | 11.4   | 9.0   | 7.4    | 6.1   |        |      |      |      |    |    |     |     |  |
| 5/16  | 0.313  |      |       |      |       |      |        |      | 50.4 | 39.8 | 27.0   | 19.7   | 15.3   | 12.7  | 10.5   | 7.7   |        |      |      |      |    |    |     |     |  |
| 3/8   | 0.375  |      |       |      |       |      |        |      |      | 61.6 | 42.3   | 30.9   | 24.0   | 19.6  | 16.3   | 12.3  | 9.5    |      |      |      |    |    |     |     |  |
| 7/16  | 0.438  |      |       |      |       |      |        |      |      |      | 61.7   | 45.8   | 35.4   | 28.6  | 24.4   | 17.3  | 14.8   | 11.2 |      |      |    |    |     |     |  |
| 1/2   | 0.500  |      |       |      |       |      |        |      |      |      | 85.2   | 63.6   | 48.8   | 39.7  | 33.3   | 24.6  | 19.4   | 15.9 | 13.1 |      |    |    |     |     |  |
| 5/8   | 0.625  |      |       |      |       |      |        |      |      |      | 110.0  | 86.2   | 70.0   | 58.3  | 43.1   | 33.3  | 27.4   | 23.3 | 16.9 |      |    |    |     |     |  |
| 3/4   | 0.750  |      |       |      |       |      |        |      |      |      |        | 138.0  | 110.0  | 93.0  | 68.7   | 53.5  | 43.6   | 36.5 | 27.1 | 21.0 |    |    |     |     |  |
| 7/8   | 0.875  |      |       |      |       |      |        |      |      |      |        |        | 165.0  | 137.0 | 104.0  | 80.7  | 64.6   | 52.9 | 39.7 | 31.6 |    |    |     |     |  |
| 1     | 1.000  |      |       |      |       |      |        |      |      |      |        |        |        | 197.0 | 143.0  | 113.0 | 91.2   | 76.2 | 56.3 | 44.2 |    |    |     |     |  |

With an 8 to 1 die ratio the inside radius of a right angle bend is approximately equal to the thickness of the material.

For other metals as compared to 60,000 P.S.I. tensile strength on chart.

soft brass . . . . . 50% of pressure listed

soft aluminum . . . 50% of pressure listed

stainless steel . . . . . 50% more than listed

chrome molybdenum . . . 100% more than listed

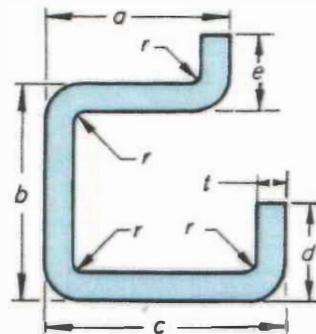
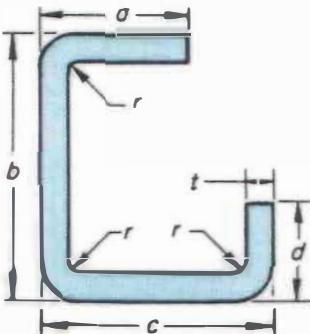
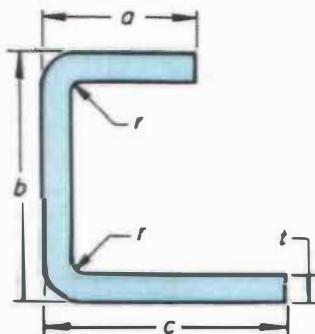
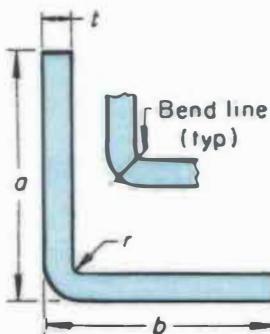
779-7791

1-800-665-8089

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### Bend Allowances for 90° Bends in Low-Carbon Steel and Aluminum

| Metal thickness<br>(t), in. | 1/32 in. |       | Bend allowance, in., for bends with inside radius (r) of: |       |       |       |       |       |       |       | 1/4 in.<br>(steel) |       | 1/2 in.<br>(steel) |       |    |
|-----------------------------|----------|-------|---|-------|-------|-------|-------|-------|-------|-------|--------------------|-------|--------------------|-------|----|
|                             | Steel    | Al    | 1/16 in.  | Steel | Al    | Steel | Al    | Steel | Al    | Steel | Al                 | Steel | Al                 | Steel | Al |
| 0.032                       | 0.059    | 0.057 | 0.066   | 0.068 | 0.079 | 0.082 | 0.093 | 0.095 | 0.146 | 0.254 |                    |       |                    |       |    |
| 0.050                       | 0.087    | 0.078 | 0.101   | 0.091 | 0.114 | 0.105 | 0.129 | 0.118 | 0.168 | 0.276 |                    |       |                    |       |    |
| 0.062                       | 0.105    | 0.095 | 0.118   | 0.108 | 0.132 | 0.120 | 0.145 | 0.133 | 0.183 | 0.290 |                    |       |                    |       |    |
| 0.078                       | 0.128    | 0.116 | 0.142   | 0.131 | 0.155 | 0.144 | 0.169 | 0.157 | 0.202 | 0.310 |                    |       |                    |       |    |
| 0.090                       | 0.146    | 0.130 | 0.160   | 0.144 | 0.173 | 0.157 | 0.187 | 0.170 | 0.217 | 0.324 |                    |       |                    |       |    |
| 0.125                       | 0.198    | 0.175 | 0.211   | 0.189 | 0.224 | 0.203 | 0.243 | 0.216 | 0.260 | 0.367 |                    |       |                    |       |    |
| 0.188                       | 0.289    | 0.256 | 0.302   | 0.217 | 0.316 | 0.283 | 0.329 | 0.297 | 0.383 | 0.443 |                    |       |                    |       |    |
| 0.250                       | 0.382    | 0.338 | 0.395   | 0.351 | 0.409 | 0.365 | 0.424 | 0.378 | 0.476 | 0.519 |                    |       |                    |       |    |
| 0.313                       | 0.474    | —     | 0.488   | —     | 0.501 | —     | 0.515 | —     | 0.569 | 0.676 |                    |       |                    |       |    |
| 0.375                       | 0.566    | —     | 0.580   | —     | 0.593 | —     | 0.607 | —     | 0.661 | 0.768 |                    |       |                    |       |    |
| 0.437                       | 0.658    | —     | 0.672   | —     | 0.685 | —     | 0.699 | —     | 0.752 | 0.860 |                    |       |                    |       |    |
| 0.500                       | 0.750    | —     | 0.764   | —     | 0.777 | —     | 0.791 | —     | 0.845 | 0.952 |                    |       |                    |       |    |



NOTE: w = developed width of blank, t = metal thickness, r = inside radius of bend.