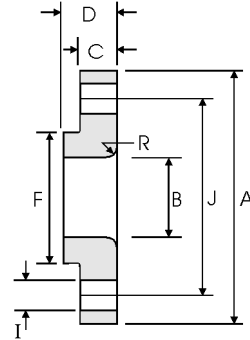




# Lap Joint Flanges - ANSI B16.5



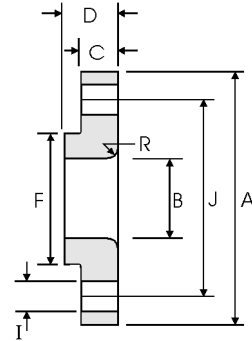
## Class 150 lb

| Nominal Pipe Size | Pipe  | Flange Data      |                 |                      |                | Lap            | Hub            | Drilling Data   |                    |                             | Weight  |
|-------------------|---|------------------|-----------------|----------------------|----------------|----------------|----------------|-----------------|--------------------|-----------------------------|---|
|                   |  | <b>A</b>         | <b>B</b>        | <b>C</b>             | <b>D</b>       | <b>R</b>       | <b>F</b>       | <b>H</b>        | <b>I</b>           | <b>J</b>                    |  |
|                   | Outside Diameter  | Overall Diameter | Inside Diameter | Flange Thickness min | Overall Length | Lap Radius     | Hub Diameter   | Number of Holes | Bolt Hole Diameter | Diameter of Circle of Holes | kg/ piece   |
|                   | in mm   | in mm            | in mm           | in mm                | in mm          | in mm          | in mm          | in mm           | in mm              | in mm                       |   |
| 1/2               | 0.840<br>21.30  | 3.500<br>88.90   | 0.900<br>22.90  | 0.440<br>11.20       | 0.620<br>15.70 | 0.120<br>3.000 | 1.190<br>30.20 | 4               | 0.620<br>15.70     | 2.380<br>60.45              | 0.38  |
| 3/4               | 1.050<br>26.70  | 3.880<br>98.60   | 1.110<br>28.20  | 0.500<br>12.70       | 0.620<br>15.70 | 0.120<br>3.000 | 1.500<br>38.10 | 4               | 0.620<br>15.70     | 2.750<br>69.85              | 0.55  |
| 1                 | 1.315<br>33.40  | 4.250<br>108.0   | 1.380<br>35.10  | 0.560<br>14.20       | 0.690<br>17.50 | 0.120<br>3.000 | 1.940<br>49.30 | 4               | 0.620<br>15.70     | 3.120<br>79.25              | 0.76  |
| 1 1/4             | 1.660<br>42.20  | 4.620<br>117.3   | 1.720<br>43.70  | 0.620<br>15.70       | 0.810<br>20.60 | 0.190<br>4.800 | 2.310<br>58.70 | 4               | 0.620<br>15.70     | 3.500<br>88.90              | 1.01  |
| 1 1/2             | 1.900<br>48.30  | 5.000<br>127.0   | 1.970<br>50.00  | 0.690<br>17.50       | 0.880<br>22.40 | 0.250<br>6.400 | 2.560<br>65.00 | 4               | 0.620<br>15.70     | 3.880<br>98.60              | 1.30  |
| 2                 | 2.375<br>60.30  | 6.000<br>152.4   | 2.460<br>62.50  | 0.750<br>19.10       | 1.000<br>25.40 | 0.310<br>7.900 | 3.060<br>77.70 | 4               | 0.750<br>19.10     | 4.750<br>120.7              | 2.03  |
| 2 1/2             | 2.875<br>73.00  | 7.000<br>177.8   | 2.970<br>75.40  | 0.880<br>22.40       | 1.120<br>28.40 | 0.310<br>7.900 | 3.560<br>90.40 | 4               | 0.750<br>19.10     | 5.500<br>139.7              | 3.25  |
| 3                 | 3.500<br>88.90  | 7.500<br>190.5   | 3.600<br>91.40  | 0.940<br>23.90       | 1.190<br>30.20 | 0.380<br>9.700 | 4.250<br>108.0 | 4               | 0.750<br>19.10     | 6.000<br>152.4              | 3.81  |
| 3 1/2             | 4.000<br>101.6  | 8.500<br>215.9   | 4.100<br>104.1  | 0.940<br>23.90       | 1.250<br>31.75 | 0.380<br>9.700 | 4.810<br>122.2 | 8               | 0.750<br>19.10     | 7.000<br>177.8              | 4.76  |
| 4                 | 4.500<br>114.3  | 9.000<br>228.6   | 4.600<br>116.8  | 0.940<br>23.90       | 1.310<br>33.30 | 0.440<br>11.20 | 5.310<br>134.9 | 8               | 0.750<br>19.10     | 7.500<br>190.5              | 5.25  |
| 5                 | 5.563<br>141.3  | 10.00<br>254.0   | 5.690<br>114.5  | 0.940<br>23.90       | 1.440<br>36.60 | 0.440<br>11.20 | 6.440<br>163.6 | 8               | 0.880<br>22.40     | 8.500<br>215.9              | 6.02  |
| 6                 | 6.625<br>168.3  | 11.00<br>279.4   | 6.750<br>171.5  | 1.000<br>25.40       | 1.560<br>39.60 | 0.500<br>12.70 | 7.560<br>192.0 | 8               | 0.880<br>22.40     | 9.500<br>241.3              | 7.40  |
| 8                 | 8.625<br>219.1  | 13.50<br>342.9   | 8.750<br>222.3  | 1.120<br>28.40       | 1.750<br>44.50 | 0.500<br>12.70 | 9.690<br>246.1 | 8               | 0.880<br>22.40     | 11.75<br>298.5              | 12.1  |
| 10                | 10.75<br>273.0  | 16.00<br>406.4   | 10.92<br>277.4  | 1.190<br>30.20       | 1.940<br>49.30 | 0.500<br>12.70 | 12.00<br>304.8 | 12              | 1.000<br>25.40     | 14.25<br>362.0              | 16.4  |
| 12                | 12.75<br>323.8  | 19.00<br>482.6   | 12.92<br>328.2  | 1.250<br>31.75       | 2.190<br>55.60 | 0.500<br>12.70 | 14.38<br>365.3 | 12              | 1.000<br>25.40     | 17.00<br>431.8              | 26.1  |
| 14                | 14.00<br>355.6  | 21.00<br>533.4   | 14.18<br>360.2  | 1.380<br>35.10       | 3.120<br>79.25 | 0.500<br>12.70 | 15.75<br>400.1 | 12              | 1.120<br>28.40     | 18.75<br>476.3              | 34.5  |
| 16                | 16.00<br>406.4  | 23.50<br>596.9   | 16.19<br>411.2  | 1.440<br>36.60       | 3.440<br>87.40 | 0.500<br>12.70 | 18.00<br>457.2 | 16              | 1.120<br>28.40     | 21.25<br>539.8              | 44.6  |
| 18                | 18.00<br>457.2  | 25.00<br>635.0   | 18.20<br>462.3  | 1.560<br>39.60       | 3.810<br>96.80 | 0.500<br>12.70 | 19.88<br>505.0 | 16              | 1.250<br>31.75     | 22.75<br>577.9              | 48.7  |
| 20                | 20.00<br>508.0  | 27.50<br>698.5   | 20.25<br>514.4  | 1.690<br>42.90       | 4.060<br>103.1 | 0.500<br>12.70 | 22.00<br>558.8 | 20              | 1.250<br>31.75     | 25.00<br>635.0              | 61.6  |
| 24                | 24.00<br>609.6  | 32.00<br>812.8   | 24.25<br>616.0  | 1.880<br>47.80       | 4.380<br>111.3 | 0.500<br>12.70 | 26.12<br>663.4 | 20              | 1.380<br>35.10     | 29.50<br>749.3              | 86.6  |



### Notes

- Weights are based on manufacturer's data and are approximate.

## Lap Joint Flanges - ANSI B16.5



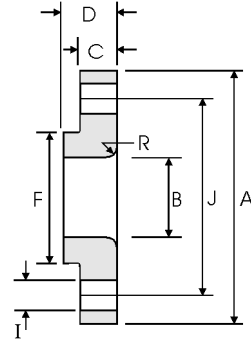
### Class 300 lb

| Nominal Pipe Size | Pipe  | Flange Data      |                 |                      |                | Lap        | Hub          | Drilling Data   |                    |                             | Weight  |
|-------------------|---|------------------|-----------------|----------------------|----------------|------------|--------------|-----------------|--------------------|-----------------------------|---|
|                   |  | <b>A</b>         | <b>B</b>        | <b>C</b>             | <b>D</b>       | <b>R</b>   | <b>F</b>     | <b>H</b>        | <b>I</b>           | <b>J</b>                    |  |
|                   | Outside Diameter  | Overall Diameter | Inside Diameter | Flange Thickness min | Overall Length | Lap Radius | Hub Diameter | Number of Holes | Bolt Hole Diameter | Diameter of Circle of Holes | kg/ piece   |
| in mm             | in mm   | in mm            | in mm           | in mm                | in mm          | in mm      | in mm        |                 | in mm              |                             |   |
| 1/2               | 0.840   | 3.750            | 0.900           | 0.560                | 0.880          | 0.120      | 1.500        | 4               | 0.620              | 2.620                       | 0.62  |
|                   | 21.30   | 95.20            | 22.90           | 14.20                | 22.30          | 3.000      | 38.10        |                 | 15.70              | 66.55                       |   |
| 3/4               | 1.050   | 4.620            | 1.110           | 0.620                | 1.000          | 0.120      | 1.880        | 4               | 0.750              | 3.250                       | 1.10  |
|                   | 26.70   | 117.3            | 28.20           | 15.70                | 25.40          | 3.000      | 47.70        |                 | 19.00              | 82.50                       |   |
| 1                 | 1.315   | 4.880            | 1.380           | 0.690                | 1.060          | 0.120      | 2.120        | 4               | 0.750              | 3.500                       | 1.33  |
|                   | 33.40   | 123.9            | 35.10           | 17.50                | 26.90          | 3.000      | 53.80        |                 | 19.0               | 88.90                       |   |
| 1 1/4             | 1.660   | 5.250            | 1.720           | 0.750                | 1.060          | 0.190      | 2.500        | 4               | 0.750              | 3.880                       | 1.65  |
|                   | 42.20   | 133.3            | 43.70           | 19.00                | 26.90          | 4.800      | 63.50        |                 | 19.00              | 98.50                       |   |
| 1 1/2             | 1.900   | 6.120            | 1.970           | 0.810                | 1.190          | 0.250      | 2.750        | 4               | 0.880              | 4.500                       | 2.44  |
|                   | 48.30   | 155.4            | 50.00           | 20.60                | 30.20          | 6.400      | 69.85        |                 | 22.30              | 114.3                       |   |
| 2                 | 2.375   | 6.500            | 2.460           | 0.880                | 1.310          | 0.310      | 3.310        | 8               | 0.750              | 5.000                       | 2.83  |
|                   | 60.30   | 165.1            | 62.50           | 22.30                | 33.20          | 7.900      | 84.00        |                 | 19.10              | 127.0                       |   |
| 2 1/2             | 2.875   | 7.500            | 2.970           | 1.000                | 1.500          | 0.310      | 3.940        | 8               | 0.880              | 5.880                       | 4.25  |
|                   | 73.00   | 190.5            | 75.40           | 25.40                | 38.10          | 7.900      | 100.0        |                 | 22.30              | 149.3                       |   |
| 3                 | 3.500   | 8.250            | 3.600           | 1.120                | 1.690          | 0.380      | 4.620        | 8               | 0.880              | 6.620                       | 5.78  |
|                   | 88.90   | 209.5            | 91.40           | 28.40                | 42.90          | 9.700      | 117.3        |                 | 22.30              | 168.1                       |   |
| 3 1/2             | 4.000   | 9.000            | 4.100           | 1.190                | 1.750          | 0.380      | 5.250        | 8               | 0.880              | 7.250                       | 7.27  |
|                   | 101.6   | 228.6            | 104.1           | 30.20                | 44.40          | 9.700      | 133.3        |                 | 22.30              | 184.1                       |   |
| 4                 | 4.500   | 10.00            | 4.600           | 1.250                | 1.880          | 0.440      | 5.750        | 8               | 0.880              | 7.880                       | 9.55  |
|                   | 114.3   | 254.0            | 116.8           | 31.70                | 47.70          | 11.20      | 146.0        |                 | 22.30              | 200.1                       |   |
| 5                 | 5.563   | 11.00            | 5.690           | 1.380                | 2.000          | 0.440      | 7.000        | 8               | 0.880              | 9.250                       | 12.2  |
|                   | 141.3   | 279.4            | 114.5           | 35.00                | 50.80          | 11.20      | 177.8        |                 | 22.30              | 234.9                       |   |
| 6                 | 6.625   | 12.50            | 6.750           | 1.440                | 2.060          | 0.500      | 8.120        | 12              | 0.880              | 10.62                       | 15.5  |
|                   | 168.3   | 317.5            | 171.5           | 36.50                | 52.30          | 12.70      | 206.2        |                 | 22.30              | 269.7                       |   |
| 8                 | 8.625   | 15.00            | 8.750           | 1.620                | 2.440          | 0.500      | 10.25        | 12              | 1.000              | 13.00                       | 24.1  |
|                   | 219.1   | 381.0            | 222.3           | 41.10                | 61.90          | 12.70      | 260.3        |                 | 25.40              | 330.2                       |   |
| 10                | 10.75   | 17.50            | 10.92           | 1.880                | 3.750          | 0.500      | 12.62        | 16              | 1.120              | 15.25                       | 34.4  |
|                   | 273.0   | 444.5            | 277.4           | 47.70                | 95.20          | 12.70      | 320.5        |                 | 28.40              | 387.3                       |   |
| 12                | 12.75   | 20.50            | 12.92           | 2.000                | 4.000          | 0.500      | 14.75        | 16              | 1.250              | 17.75                       | 50.4  |
|                   | 323.8   | 520.7            | 328.2           | 50.80                | 101.6          | 12.70      | 374.6        |                 | 31.70              | 450.8                       |   |
| 14                | 14.00   | 23.00            | 14.18           | 2.120                | 4.380          | 0.500      | 16.75        | 20              | 1.250              | 20.25                       | 70.9  |
|                   | 355.6   | 584.2            | 360.2           | 53.80                | 111.2          | 12.70      | 425.4        |                 | 31.70              | 514.3                       |   |
| 16                | 16.00   | 25.50            | 16.19           | 2.250                | 4.750          | 0.500      | 19.00        | 20              | 1.380              | 22.50                       | 89.5  |
|                   | 406.4   | 647.7            | 411.2           | 57.15                | 120.6          | 12.70      | 482.6        |                 | 35.00              | 571.5                       |   |
| 18                | 18.00   | 28.00            | 18.20           | 2.380                | 5.120          | 0.500      | 21.00        | 24              | 1.380              | 24.75                       | 111   |
|                   | 457.2   | 711.2            | 462.3           | 60.45                | 130.0          | 12.70      | 533.4        |                 | 35.00              | 628.6                       |   |
| 20                | 20.00   | 30.50            | 20.25           | 2.500                | 5.500          | 0.500      | 23.12        | 24              | 1.380              | 27.00                       | 137   |
|                   | 508.0   | 774.7            | 514.4           | 63.50                | 139.7          | 12.70      | 587.2        |                 | 35.0               | 685.8                       |   |
| 24                | 24.00   | 36.00            | 24.25           | 2.750                | 6.000          | 0.500      | 27.62        | 24              | 1.620              | 32.00                       | 204   |
|                   | 609.6   | 914.4            | 616.0           | 69.8                 | 152.4          | 12.70      | 701.5        |                 | 41.10              | 812.8                       |   |



Notes

- Weights are based on manufacturer's data and are approximate.

# Lap Joint Flanges - ANSI B16.5



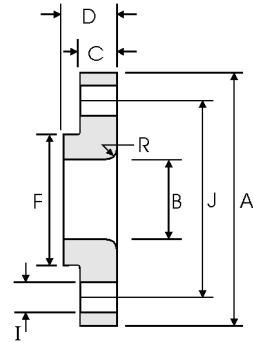
## Class 400 lb

| Pipe              |   | Flange Data      |                 |                      |                | Lap        | Hub          | Drilling Data   |                    |                             | Weight  |
|-------------------|---|------------------|-----------------|----------------------|----------------|------------|--------------|-----------------|--------------------|-----------------------------|---|
| Nominal Pipe Size |  | A                | B               | C                    | D              | R          | F            | H               | I                  | J                           |  |
|                   | Outside Diameter  | Overall Diameter | Inside Diameter | Flange Thickness min | Overall Length | Lap Radius | Hub Diameter | Number of Holes | Bolt Hole Diameter | Diameter of Circle of Holes | kg/ piece   |
|                   | in mm   | in mm            | in mm           | in mm                | in mm          | in mm      | in mm        |                 | in mm              | in mm                       |   |
| 1/2               | 0.840   | 3.750            | 0.900           | 0.560                | 0.880          | 0.120      | 1.500        | 4               | 0.620              | 2.620                       | 0.72  |
|                   | 21.30   | 95.30            | 22.90           | 14.20                | 22.40          | 3.000      | 38.10        |                 | 15.70              | 66.55                       |   |
| 3/4               | 1.050   | 4.620            | 1.110           | 0.620                | 1.000          | 0.120      | 1.880        | 4               | 0.750              | 3.250                       | 1.25  |
|                   | 26.70   | 117.3            | 28.20           | 15.70                | 25.40          | 3.000      | 47.80        |                 | 19.10              | 82.60                       |   |
| 1                 | 1.315   | 4.880            | 1.380           | 0.690                | 1.060          | 0.120      | 2.120        | 4               | 0.750              | 3.500                       | 1.50  |
|                   | 33.40   | 124.0            | 35.10           | 17.50                | 26.90          | 3.000      | 53.80        |                 | 19.10              | 88.90                       |   |
| 1 1/4             | 1.660   | 5.250            | 1.720           | 0.810                | 1.120          | 0.190      | 2.500        | 4               | 0.750              | 3.880                       | 2.00  |
|                   | 42.20   | 133.4            | 43.70           | 20.60                | 28.40          | 4.800      | 63.50        |                 | 19.10              | 98.60                       |   |
| 1 1/2             | 1.900   | 6.120            | 1.970           | 0.880                | 1.250          | 0.250      | 2.750        | 4               | 0.880              | 4.500                       | 2.92  |
|                   | 48.30   | 155.4            | 50.00           | 22.40                | 31.75          | 6.400      | 69.85        |                 | 22.40              | 114.3                       |   |
| 2                 | 2.375   | 6.500            | 2.460           | 1.000                | 1.440          | 0.310      | 3.310        | 8               | 0.750              | 5.000                       | 3.55  |
|                   | 60.30   | 165.1            | 62.50           | 25.40                | 36.60          | 7.900      | 84.10        |                 | 19.10              | 127.0                       |   |
| 2 1/2             | 2.875   | 7.500            | 2.970           | 1.120                | 1.620          | 0.310      | 3.940        | 8               | 0.880              | 5.880                       | 5.23  |
|                   | 73.00   | 190.5            | 75.40           | 28.40                | 41.10          | 7.900      | 100.1        |                 | 22.40              | 149.4                       |   |
| 3                 | 3.500   | 8.250            | 3.600           | 1.125                | 1.810          | 0.380      | 4.620        | 8               | 0.880              | 6.620                       | 6.95  |
|                   | 88.90   | 209.6            | 91.40           | 31.75                | 46.00          | 9.700      | 117.3        |                 | 22.40              | 168.1                       |   |
| 3 1/2             | 4.000   | 9.000            | 4.100           | 1.380                | 1.940          | 0.380      | 5.250        | 8               | 1.000              | 7.250                       | 8.78  |
|                   | 101.6   | 228.6            | 104.1           | 35.10                | 49.30          | 9.700      | 133.4        |                 | 25.40              | 184.2                       |   |
| 4                 | 4.500   | 10.00            | 4.600           | 1.380                | 2.000          | 0.440      | 5.750        | 8               | 1.000              | 7.880                       | 10.9  |
|                   | 114.3   | 254.0            | 116.8           | 35.10                | 50.80          | 11.20      | 146.1        |                 | 25.40              | 200.2                       |   |
| 5                 | 5.563   | 11.00            | 5.690           | 1.500                | 2.120          | 0.440      | 7.000        | 8               | 1.000              | 9.250                       | 13.7  |
|                   | 141.3   | 279.4            | 114.5           | 38.10                | 53.80          | 11.20      | 177.8        |                 | 25.40              | 235.0                       |   |
| 6                 | 6.625   | 12.50            | 6.750           | 1.620                | 2.250          | 0.500      | 8.120        | 12              | 1.000              | 10.62                       | 18.0  |
|                   | 168.3   | 317.5            | 171.5           | 41.10                | 57.15          | 12.70      | 206.2        |                 | 25.40              | 269.7                       |   |
| 8                 | 8.625   | 15.00            | 8.750           | 1.880                | 2.690          | 0.500      | 10.25        | 12              | 1.120              | 13.00                       | 28.3  |
|                   | 219.1   | 381.0            | 222.3           | 47.80                | 68.30          | 12.70      | 260.4        |                 | 28.40              | 330.2                       |   |
| 10                | 10.75   | 17.50            | 10.92           | 2.120                | 4.000          | 0.500      | 12.62        | 16              | 1.250              | 15.25                       | 38.8  |
|                   | 273.0   | 444.5            | 277.4           | 53.80                | 101.6          | 12.70      | 320.5        |                 | 31.75              | 387.4                       |   |
| 12                | 12.75   | 20.50            | 12.92           | 2.250                | 4.250          | 0.500      | 14.75        | 16              | 1.380              | 17.75                       | 56.6  |
|                   | 323.8   | 520.7            | 328.2           | 57.15                | 108.0          | 12.70      | 374.7        |                 | 35.10              | 450.9                       |   |
| 14                | 14.00   | 23.00            | 14.18           | 2.380                | 4.620          | 0.500      | 16.75        | 20              | 1.380              | 20.25                       | 78.6  |
|                   | 355.6   | 584.2            | 360.2           | 60.45                | 117.3          | 12.70      | 425.5        |                 | 35.10              | 514.4                       |   |
| 16                | 16.00   | 25.50            | 16.19           | 2.500                | 5.000          | 0.500      | 19.00        | 20              | 1.500              | 22.50                       | 100   |
|                   | 406.4   | 647.7            | 411.2           | 63.50                | 127.0          | 12.70      | 482.6        |                 | 38.10              | 571.5                       |   |
| 18                | 18.00   | 28.00            | 18.20           | 2.620                | 5.380          | 0.500      | 21.00        | 24              | 1.500              | 24.75                       | 122   |
|                   | 457.2   | 711.2            | 462.3           | 66.55                | 136.7          | 12.70      | 533.4        |                 | 38.10              | 628.7                       |   |
| 20                | 20.00   | 30.50            | 20.25           | 2.750                | 5.750          | 0.500      | 23.12        | 24              | 1.620              | 27.00                       | 145   |
|                   | 508.0   | 774.7            | 514.4           | 69.85                | 146.1          | 12.70      | 587.2        |                 | 41.10              | 685.8                       |   |
| 24                | 24.00   | 36.00            | 24.25           | 3.000                | 6.250          | 0.500      | 27.62        | 24              | 1.880              | 32.00                       | 217   |
|                   | 609.6   | 914.4            | 616.0           | 76.20                | 158.8          | 12.70      | 701.5        |                 | 47.80              | 812.8                       |   |



Notes

- Weights are based on manufacturer's data and are approximate.

## Lap Joint Flanges - ANSI B16.5



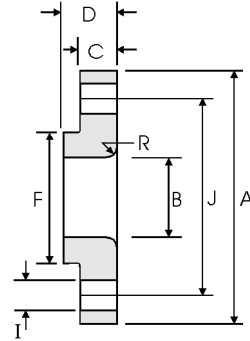
### Class 600 lb

| Nominal Pipe Size | Pipe  | Flange Data      |                 |                      |                | Lap        | Hub          | Drilling Data   |                    |                             | Weight  |
|-------------------|---|------------------|-----------------|----------------------|----------------|------------|--------------|-----------------|--------------------|-----------------------------|---|
|                   |  | A                | B               | C                    | D              | R          | F            | H               | I                  | J                           |  |
|                   | Outside Diameter  | Overall Diameter | Inside Diameter | Flange Thickness min | Overall Length | Lap Radius | Hub Diameter | Number of Holes | Bolt Hole Diameter | Diameter of Circle of Holes | kg/ piece   |
|                   | in mm   | in mm            | in mm           | in mm                | in mm          | in mm      | in mm        |                 | in mm              | in mm                       |   |
| 1/2               | 0.840   | 3.750            | 0.900           | 0.560                | 0.880          | 0.120      | 1.500        | 4               | 0.620              | 2.620                       | 0.72  |
|                   | 21.30   | 95.30            | 22.90           | 14.20                | 22.40          | 3.000      | 38.10        |                 | 15.70              | 66.55                       |   |
| 3/4               | 1.050   | 4.620            | 1.110           | 0.620                | 1.000          | 0.120      | 1.880        | 4               | 0.750              | 3.250                       | 1.25  |
|                   | 26.70   | 117.3            | 28.20           | 15.70                | 25.40          | 3.000      | 47.80        |                 | 19.10              | 82.60                       |   |
| 1                 | 1.315   | 4.880            | 1.380           | 0.690                | 1.060          | 0.120      | 2.120        | 4               | 0.750              | 3.500                       | 1.50  |
|                   | 33.40   | 124.0            | 35.10           | 17.50                | 26.90          | 3.000      | 53.80        |                 | 19.10              | 88.90                       |   |
| 1 1/4             | 1.660   | 5.250            | 1.720           | 0.810                | 1.120          | 0.190      | 2.500        | 4               | 0.750              | 3.880                       | 2.00  |
|                   | 42.20   | 133.4            | 43.70           | 20.60                | 28.40          | 4.800      | 63.50        |                 | 19.10              | 98.60                       |   |
| 1 1/2             | 1.900   | 6.120            | 1.970           | 0.880                | 1.250          | 0.250      | 2.750        | 4               | 0.880              | 4.500                       | 2.92  |
|                   | 48.30   | 155.4            | 50.00           | 22.40                | 31.75          | 6.400      | 69.85        |                 | 22.40              | 114.3                       |   |
| 2                 | 2.375   | 6.500            | 2.460           | 1.000                | 1.440          | 0.310      | 3.310        | 8               | 0.750              | 5.000                       | 3.55  |
|                   | 60.30   | 165.1            | 62.50           | 25.40                | 36.60          | 7.900      | 84.10        |                 | 19.10              | 127.0                       |   |
| 2 1/2             | 2.875   | 7.500            | 2.970           | 1.120                | 1.620          | 0.310      | 3.940        | 8               | 0.880              | 5.880                       | 5.23  |
|                   | 73.00   | 190.5            | 75.40           | 28.40                | 41.10          | 7.900      | 100.1        |                 | 22.40              | 149.4                       |   |
| 3                 | 3.500   | 8.250            | 3.600           | 1.125                | 1.810          | 0.380      | 4.620        | 8               | 0.880              | 6.620                       | 6.95  |
|                   | 88.90   | 209.6            | 91.40           | 31.75                | 46.00          | 9.700      | 117.3        |                 | 22.40              | 168.1                       |   |
| 3 1/2             | 4.000   | 9.000            | 4.100           | 1.380                | 1.940          | 0.380      | 5.250        | 8               | 1.000              | 7.250                       | 8.78  |
|                   | 101.6   | 228.6            | 104.1           | 35.10                | 49.30          | 9.700      | 133.4        |                 | 25.40              | 184.2                       |   |
| 4                 | 4.500   | 10.75            | 4.600           | 1.500                | 2.120          | 0.440      | 6.000        | 8               | 1.000              | 8.500                       | 14.4  |
|                   | 114.3   | 273.1            | 116.8           | 38.10                | 53.80          | 11.20      | 152.4        |                 | 25.40              | 215.9                       |   |
| 5                 | 5.563   | 13.00            | 5.690           | 1.750                | 2.380          | 0.440      | 7.440        | 8               | 1.120              | 10.50                       | 24.3  |
|                   | 141.3   | 330.2            | 114.5           | 44.50                | 60.45          | 11.20      | 189.0        |                 | 28.40              | 266.7                       |   |
| 6                 | 6.625   | 14.00            | 6.750           | 1.880                | 2.620          | 0.500      | 8.750        | 12              | 1.120              | 11.50                       | 28.5  |
|                   | 168.3   | 355.6            | 171.5           | 47.80                | 66.55          | 12.70      | 222.3        |                 | 28.40              | 292.1                       |   |
| 8                 | 8.625   | 16.50            | 8.750           | 2.190                | 3.000          | 0.500      | 10.75        | 12              | 1.250              | 13.75                       | 43.1  |
|                   | 219.1   | 419.1            | 222.3           | 55.60                | 76.20          | 12.70      | 273.1        |                 | 31.75              | 349.3                       |   |
| 10                | 10.75   | 20.00            | 10.92           | 2.500                | 4.380          | 0.500      | 13.50        | 16              | 1.380              | 17.00                       | 70.5  |
|                   | 273.0   | 508.0            | 277.4           | 63.50                | 111.3          | 12.70      | 342.9        |                 | 35.10              | 431.8                       |   |
| 12                | 12.75   | 22.00            | 12.92           | 2.620                | 4.620          | 0.500      | 15.75        | 20              | 1.380              | 19.25                       | 86.1  |
|                   | 323.8   | 558.8            | 328.2           | 66.55                | 117.3          | 12.70      | 400.1        |                 | 35.10              | 489.0                       |   |
| 14                | 14.00   | 23.75            | 14.18           | 2.750                | 5.000          | 0.500      | 17.00        | 20              | 1.500              | 20.75                       | 100   |
|                   | 355.6   | 603.3            | 360.2           | 69.85                | 127.0          | 12.70      | 431.8        |                 | 38.10              | 527.1                       |   |
| 16                | 16.00   | 27.00            | 16.19           | 3.000                | 5.500          | 0.500      | 19.50        | 20              | 1.620              | 23.75                       | 145   |
|                   | 406.4   | 685.8            | 411.2           | 76.20                | 139.7          | 12.70      | 495.3        |                 | 41.10              | 603.3                       |   |
| 18                | 18.00   | 29.25            | 18.20           | 3.250                | 6.000          | 0.500      | 21.50        | 20              | 1.750              | 25.75                       | 177   |
|                   | 457.2   | 743.0            | 462.3           | 82.60                | 152.4          | 12.70      | 546.1        |                 | 44.50              | 654.1                       |   |
| 20                | 20.00   | 32.00            | 20.25           | 3.500                | 6.500          | 0.500      | 24.00        | 24              | 1.750              | 28.50                       | 225   |
|                   | 508.0   | 812.8            | 514.4           | 88.90                | 165.1          | 12.70      | 609.6        |                 | 44.50              | 723.9                       |   |
| 24                | 24.00   | 37.00            | 24.25           | 4.000                | 7.250          | 0.500      | 28.25        | 24              | 2.000              | 33.00                       | 318   |
|                   | 609.6   | 939.8            | 616.0           | 101.6                | 184.2          | 12.70      | 717.6        |                 | 50.80              | 838.2                       |   |



Notes

- Weights are based on manufacturer's data and are approximate.

## Lap Joint Flanges - ANSI B16.5



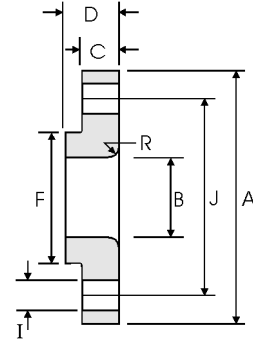
### Class 900 lb

| Nominal Pipe Size | Pipe  | Flange Data      |                 |                      |                | Lap        | Hub          | Drilling Data   |                    |                             | Weight  |
|-------------------|---|------------------|-----------------|----------------------|----------------|------------|--------------|-----------------|--------------------|-----------------------------|---|
|                   |  | A                | B               | C                    | D              | R          | F            | H               | I                  | J                           |  |
|                   | Outside Diameter  | Overall Diameter | Inside Diameter | Flange Thickness min | Overall Length | Lap Radius | Hub Diameter | Number of Holes | Bolt Hole Diameter | Diameter of Circle of Holes | kg/ piece   |
| in mm             | in mm   | in mm            | in mm           | in mm                | in mm          | in mm      |              |                 |                    |                             |   |
| 1/2               | 0.840   | 4.750            | 0.900           | 0.880                | 1.250          | 0.120      | 1.500        | 4               | 0.880              | 3.250                       | 1.71  |
|                   | 21.30   | 120.6            | 22.90           | 22.30                | 31.70          | 3.000      | 38.10        |                 |                    |                             |   |
| 3/4               | 1.050   | 5.120            | 1.110           | 1.000                | 1.380          | 0.120      | 1.750        | 4               | 0.880              | 3.500                       | 2.30  |
|                   | 26.70   | 130.0            | 28.20           | 25.40                | 35.00          | 3.000      | 44.40        |                 |                    |                             |   |
| 1                 | 1.315   | 5.880            | 1.380           | 1.120                | 1.620          | 0.120      | 2.060        | 4               | 1.000              | 4.000                       | 3.40  |
|                   | 33.40   | 149.3            | 35.10           | 28.40                | 41.10          | 3.000      | 52.30        |                 |                    |                             |   |
| 1 1/4             | 1.660   | 6.250            | 1.720           | 1.120                | 1.620          | 0.190      | 2.500        | 4               | 1.000              | 4.380                       | 3.85  |
|                   | 42.20   | 158.7            | 43.70           | 28.40                | 41.10          | 4.800      | 63.50        |                 |                    |                             |   |
| 1 1/2             | 1.900   | 7.000            | 1.970           | 1.250                | 1.750          | 0.250      | 2.750        | 4               | 1.120              | 4.880                       | 5.28  |
|                   | 48.30   | 177.8            | 50.00           | 31.70                | 44.40          | 6.400      | 69.85        |                 |                    |                             |   |
| 2                 | 2.375   | 8.500            | 2.460           | 1.500                | 2.250          | 0.310      | 4.120        | 8               | 1.000              | 6.500                       | 9.78  |
|                   | 60.30   | 215.9            | 62.50           | 38.10                | 57.15          | 7.900      | 104.6        |                 |                    |                             |   |
| 2 1/2             | 2.875   | 9.620            | 2.970           | 1.620                | 2.500          | 0.310      | 4.880        | 8               | 1.120              | 7.500                       | 13.6  |
|                   | 73.00   | 244.3            | 75.40           | 41.10                | 63.50          | 7.900      | 123.9        |                 |                    |                             |   |
| 3                 | 3.500   | 9.500            | 3.600           | 1.500                | 2.120          | 0.380      | 5.000        | 8               | 1.000              | 7.500                       | 11.3  |
|                   | 88.90   | 241.3            | 91.40           | 38.10                | 53.80          | 9.700      | 127.0        |                 |                    |                             |   |
| 4                 | 4.500   | 11.50            | 4.600           | 1.750                | 2.750          | 0.440      | 6.250        | 8               | 1.250              | 9.250                       | 19.2  |
|                   | 114.3   | 292.1            | 116.8           | 44.40                | 69.85          | 11.20      | 158.7        |                 |                    |                             |   |
| 5                 | 5.563   | 13.75            | 5.690           | 2.000                | 3.120          | 0.440      | 7.500        | 8               | 1.380              | 11.00                       | 31.20   |
|                   | 141.3   | 349.2            | 114.5           | 50.80                | 79.25          | 11.20      | 190.5        |                 |                    |                             |   |
| 6                 | 6.625   | 15.00            | 6.750           | 2.190                | 3.380          | 0.500      | 9.250        | 12              | 1.250              | 12.50                       | 40.50   |
|                   | 168.3   | 381.0            | 171.5           | 55.60                | 85.80          | 12.70      | 234.9        |                 |                    |                             |   |
| 8                 | 8.625   | 18.50            | 8.750           | 2.500                | 4.500          | 0.500      | 11.75        | 12              | 1.500              | 15.50                       | 71.5  |
|                   | 219.1   | 469.9            | 222.3           | 63.50                | 114.3          | 12.70      | 298.4        |                 |                    |                             |   |
| 10                | 10.75   | 21.50            | 10.92           | 2.750                | 5.000          | 0.500      | 14.50        | 16              | 1.500              | 18.50                       | 104   |
|                   | 273.0   | 546.1            | 277.4           | 69.85                | 127.0          | 12.70      | 368.3        |                 |                    |                             |   |
| 12                | 12.75   | 24.00            | 12.92           | 3.120                | 5.620          | 0.500      | 16.50        | 20              | 1.500              | 21.00                       | 139   |
|                   | 323.8   | 609.6            | 328.2           | 79.25                | 142.7          | 12.70      | 419.1        |                 |                    |                             |   |
| 14                | 14.00   | 25.25            | 14.18           | 3.380                | 6.120          | 0.500      | 17.75        | 20              | 1.620              | 22.00                       | 161   |
|                   | 355.6   | 641.3            | 360.2           | 85.80                | 155.4          | 12.70      | 450.8        |                 |                    |                             |   |
| 16                | 16.00   | 27.75            | 16.19           | 3.500                | 6.500          | 0.500      | 20.00        | 20              | 1.750              | 24.25                       | 194   |
|                   | 406.4   | 704.8            | 411.2           | 88.90                | 165.1          | 12.70      | 508.0        |                 |                    |                             |   |
| 18                | 18.00   | 31.00            | 18.20           | 4.000                | 7.500          | 0.500      | 22.25        | 20              | 2.000              | 27.00                       | 267   |
|                   | 457.2   | 787.4            | 462.3           | 101.6                | 190.5          | 12.70      | 565.1        |                 |                    |                             |   |
| 20                | 20.00   | 33.75            | 20.25           | 4.250                | 8.250          | 0.500      | 24.50        | 20              | 2.120              | 29.50                       | 334   |
|                   | 508.0   | 857.2            | 514.4           | 107.9                | 209.5          | 12.70      | 622.3        |                 |                    |                             |   |
| 24                | 24.00   | 41.00            | 24.25           | 50.50                | 10.50          | 0.500      | 29.50        | 20              | 2.620              | 35.50                       | 618   |
|                   | 609.6   | 1041.4           | 616.0           | 139.7                | 266.7          | 12.70      | 749.3        |                 |                    |                             |   |



Notes

- Weights are based on manufacturer's data and are approximate.

## Lap Joint Flanges - ANSI B16.5



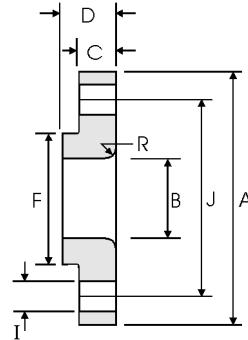
### Class 1500 lb

| Nominal Pipe Size | Pipe  | Flange Data      |                 |                      |                |                | Lap            | Hub             | Drilling Data      |                             |   | Weight |
|-------------------|---|------------------|-----------------|----------------------|----------------|----------------|----------------|-----------------|--------------------|-----------------------------|---|--------|
|                   |  | <b>A</b>         | <b>B</b>        | <b>C</b>             | <b>D</b>       | <b>R</b>       | <b>F</b>       | <b>H</b>        | <b>I</b>           | <b>J</b>                    |  |        |
|                   | Outside Diameter  | Overall Diameter | Inside Diameter | Flange Thickness min | Overall Length | Lap Radius     | Hub Diameter   | Number of Holes | Bolt Hole Diameter | Diameter of Circle of Holes | kg/ piece   |        |
|                   | in mm   | in mm            | in mm           | in mm                | in mm          | in mm          | in mm          |                 | in mm              | in mm                       |   |        |
| 1/2               | 0.840<br>21.30  | 4.750<br>120.6   | 0.900<br>22.90  | 0.880<br>22.30       | 1.250<br>31.70 | 0.120<br>3.000 | 1.500<br>38.10 | 4               | 0.880<br>22.30     | 3.250<br>82.50              | 1.71  |        |
| 3/4               | 1.050<br>26.70  | 5.120<br>130.0   | 1.110<br>28.20  | 1.000<br>25.40       | 1.380<br>35.00 | 0.120<br>3.000 | 1.750<br>44.40 | 4               | 0.880<br>22.30     | 3.500<br>88.90              | 2.30  |        |
| 1                 | 1.315<br>33.40  | 5.880<br>149.3   | 1.380<br>35.10  | 1.120<br>28.40       | 1.620<br>41.10 | 0.120<br>3.000 | 2.060<br>52.30 | 4               | 1.000<br>25.40     | 4.000<br>101.6              | 3.40  |        |
| 1 1/4             | 1.660<br>42.20  | 6.250<br>158.7   | 1.720<br>43.70  | 1.120<br>28.40       | 1.620<br>41.10 | 0.190<br>4.800 | 2.500<br>63.50 | 4               | 1.000<br>25.40     | 4.380<br>111.2              | 3.85  |        |
| 1 1/2             | 1.900<br>48.30  | 7.000<br>177.8   | 1.970<br>50.00  | 1.250<br>31.70       | 1.750<br>44.40 | 0.250<br>6.400 | 2.750<br>69.85 | 4               | 1.120<br>28.40     | 4.880<br>123.9              | 5.28  |        |
| 2                 | 2.375<br>60.30  | 8.500<br>215.9   | 2.460<br>62.50  | 1.500<br>38.10       | 2.250<br>57.15 | 0.310<br>7.900 | 4.120<br>104.6 | 8               | 1.000<br>25.40     | 6.500<br>165.1              | 9.78  |        |
| 2 1/2             | 2.875<br>73.00  | 9.620<br>244.3   | 2.970<br>75.40  | 1.620<br>41.10       | 2.500<br>63.50 | 0.310<br>7.900 | 4.880<br>123.9 | 8               | 1.120<br>28.40     | 7.500<br>190.5              | 13.6  |        |
| 3                 | 3.500<br>88.90  | 10.50<br>266.7   | 3.600<br>91.40  | 1.880<br>47.70       | 2.880<br>73.15 | 0.380<br>9.700 | 5.250<br>133.3 | 8               | 1.250<br>31.70     | 8.000<br>203.2              | 17.8  |        |
| 4                 | 4.500<br>114.3  | 12.25<br>311.1   | 4.600<br>116.8  | 2.120<br>53.80       | 3.560<br>90.40 | 0.440<br>11.20 | 6.380<br>162.0 | 8               | 1.380<br>35.00     | 9.500<br>241.3              | 27.5  |        |
| 5                 | 5.563<br>141.3  | 14.75<br>374.6   | 5.690<br>144.5  | 2.880<br>73.15       | 4.120<br>104.6 | 0.440<br>11.20 | 7.750<br>196.8 | 8               | 1.620<br>41.10     | 11.50<br>292.1              | 51.5  |        |
| 6                 | 6.625<br>168.3  | 15.50<br>399.7   | 6.750<br>171.5  | 3.250<br>82.50       | 4.690<br>119.1 | 0.500<br>12.70 | 9.000<br>228.6 | 12              | 1.500<br>38.10     | 12.50<br>317.5              | 62.0  |        |
| 8                 | 8.625<br>219.1  | 19.00<br>482.6   | 8.750<br>222.3  | 3.620<br>91.90       | 5.620<br>142.7 | 0.500<br>12.70 | 11.50<br>292.1 | 12              | 1.750<br>44.40     | 15.50<br>393.7              | 105   |        |
| 10                | 10.75<br>273.0  | 23.00<br>584.2   | 10.92<br>277.4  | 4.250<br>107.9       | 7.000<br>177.8 | 0.500<br>12.70 | 14.50<br>368.3 | 12              | 2.000<br>50.80     | 19.00<br>482.6              | 179   |        |
| 12                | 12.75<br>323.8  | 26.50<br>673.1   | 12.92<br>328.2  | 4.880<br>123.9       | 8.620<br>218.9 | 0.500<br>12.70 | 17.75<br>450.8 | 16              | 2.120<br>53.80     | 22.50<br>571.5              | 269   |        |
| 14                | 14.00<br>355.6  | 29.50<br>749.3   | 14.18<br>360.2  | 5.250<br>133.3       | 9.500<br>241.3 | 0.500<br>12.70 | 19.50<br>495.3 | 16              | 2.380<br>60.45     | 25.00<br>635.0              | 365   |        |
| 16                | 16.00<br>406.4  | 32.50<br>825.5   | 16.19<br>411.2  | 5.750<br>146.0       | 10.25<br>260.3 | 0.500<br>12.70 | 21.75<br>552.4 | 16              | 2.620<br>66.55     | 27.75<br>704.8              | 459   |        |
| 18                | 18.00<br>457.2  | 36.00<br>914.4   | 18.20<br>462.3  | 6.380<br>162.0       | 10.88<br>276.3 | 0.500<br>12.70 | 23.50<br>596.9 | 16              | 2.880<br>73.15     | 30.50<br>774.7              | 598   |        |
| 20                | 20.00<br>508.0  | 38.75<br>984.2   | 20.25<br>514.4  | 7.000<br>177.8       | 11.50<br>292.1 | 0.500<br>12.70 | 25.25<br>641.3 | 16              | 3.120<br>79.25     | 32.75<br>831.8              | 712   |        |
| 24                | 24.00<br>609.6  | 46.00<br>1168.4  | 24.25<br>616.0  | 8.000<br>203.2       | 13.00<br>330.2 | 0.500<br>12.70 | 30.00<br>762.0 | 16              | 3.620<br>91.90     | 39.00<br>990.6              | 1090  |        |



#### Notes

- Weights are based on manufacturer's data and are approximate.

## Lap Joint Flanges - ANSI B16.5



### Class 2500 lb

| Nominal Pipe Size | Pipe  | Flange Data      |                 |                      |                | Lap        | Hub          | Drilling Data   |                    |                             | Weight  |
|-------------------|---|------------------|-----------------|----------------------|----------------|------------|--------------|-----------------|--------------------|-----------------------------|---|
|                   |  | <b>A</b>         | <b>B</b>        | <b>C</b>             | <b>D</b>       | <b>R</b>   | <b>F</b>     | <b>H</b>        | <b>I</b>           | <b>J</b>                    |  |
|                   | Outside Diameter  | Overall Diameter | Inside Diameter | Flange Thickness min | Overall Length | Lap Radius | Hub Diameter | Number of Holes | Bolt Hole Diameter | Diameter of Circle of Holes | kg/ piece   |
| in mm             | in mm   | in mm            | in mm           | in mm                | in mm          | in mm      | in mm        |                 | in mm              |                             |   |
| 1/2               | 0.840   | 5.255            | 0.900           | 1.190                | 1.560          | 0.120      | 1.690        | 4               | 0.880              | 3.500                       | 2.92  |
|                   | 21.30   | 133.4            | 22.90           | 30.20                | 39.60          | 3.000      | 42.90        |                 | 22.40              | 88.90                       |   |
| 3/4               | 1.050   | 5.500            | 1.110           | 1.250                | 1.690          | 0.120      | 2.000        | 4               | 0.880              | 3.750                       | 3.40  |
|                   | 26.70   | 139.7            | 28.20           | 31.75                | 42.90          | 3.000      | 50.80        |                 | 22.40              | 95.30                       |   |
| 1                 | 1.315   | 6.250            | 1.380           | 1.380                | 1.880          | 0.120      | 2.250        | 4               | 1.000              | 4.250                       | 4.77  |
|                   | 33.40   | 158.8            | 35.10           | 35.10                | 47.80          | 3.000      | 57.15        |                 | 25.40              | 108.0                       |   |
| 1 1/4             | 1.660   | 7.250            | 1.720           | 1.500                | 2.060          | 0.190      | 2.880        | 4               | 1.120              | 5.120                       | 7.08  |
|                   | 42.20   | 184.2            | 43.70           | 38.10                | 52.30          | 4.800      | 73.15        |                 | 28.40              | 130.0                       |   |
| 1 1/2             | 1.900   | 8.000            | 1.970           | 1.750                | 2.380          | 0.250      | 3.120        | 4               | 1.250              | 5.750                       | 9.93  |
|                   | 48.30   | 203.2            | 50.00           | 44.50                | 60.45          | 6.400      | 79.25        |                 | 31.75              | 146.1                       |   |
| 2                 | 2.375   | 9.250            | 2.460           | 2.000                | 2.750          | 0.310      | 3.750        | 8               | 1.120              | 6.750                       | 14.7  |
|                   | 60.30   | 235.0            | 62.50           | 50.80                | 69.85          | 7.900      | 95.30        |                 | 28.40              | 171.5                       |   |
| 2 1/2             | 2.875   | 10.50            | 2.970           | 2.250                | 3.120          | 0.310      | 4.500        | 8               | 1.250              | 7.750                       | 21.3  |
|                   | 73.00   | 266.7            | 75.40           | 57.15                | 79.25          | 7.900      | 114.3        |                 | 31.75              | 196.9                       |   |
| 3                 | 3.500   | 12.00            | 3.600           | 2.620                | 3.620          | 0.380      | 5.250        | 8               | 1.380              | 9.000                       | 32.3  |
|                   | 88.90   | 304.8            | 91.40           | 66.55                | 91.90          | 9.700      | 133.4        |                 | 35.10              | 228.6                       |   |
| 4                 | 4.500   | 14.00            | 4.600           | 3.000                | 4.250          | 0.440      | 6.500        | 8               | 1.620              | 10.75                       | 52.5  |
|                   | 114.3   | 355.6            | 116.8           | 76.20                | 108.0          | 11.20      | 165.1        |                 | 41.10              | 273.1                       |   |
| 5                 | 5.563   | 16.50            | 5.690           | 3.620                | 5.120          | 0.440      | 8.000        | 8               | 1.880              | 12.75                       | 82.6  |
|                   | 141.3   | 419.1            | 114.5           | 91.90                | 130.0          | 11.20      | 203.2        |                 | 47.80              | 323.9                       |   |
| 6                 | 6.625   | 19.00            | 6.750           | 4.250                | 6.000          | 0.500      | 9.250        | 8               | 2.120              | 14.50                       | 127   |
|                   | 168.3   | 482.6            | 171.5           | 108.0                | 152.4          | 12.70      | 235.0        |                 | 53.80              | 368.3                       |   |
| 8                 | 8.625   | 21.75            | 8.750           | 5.000                | 7.000          | 0.500      | 12.00        | 12              | 2.120              | 17.25                       | 186   |
|                   | 219.1   | 552.5            | 222.3           | 127.0                | 177.8          | 12.70      | 304.8        |                 | 53.80              | 438.2                       |   |
| 10                | 10.75   | 26.50            | 10.92           | 6.500                | 9.000          | 0.500      | 14.75        | 12              | 2.620              | 21.25                       | 352   |
|                   | 273.0   | 673.1            | 277.4           | 165.1                | 228.6          | 12.70      | 374.7        |                 | 66.55              | 539.8                       |   |
| 12                | 12.75   | 30.00            | 12.92           | 7.250                | 10.00          | 0.500      | 17.38        | 12              | 2.880              | 24.38                       | 501   |
|                   | 323.8   | 762.0            | 328.2           | 184.2                | 254.0          | 12.70      | 441.5        |                 | 73.15              | 619.3                       |   |

#### Notes

- Weights are based on manufacturer's data and are approximate.