

## BOLT SIZES FOR ANSI 150 TO 1500 CLASS FLANGES

### Dimensions (inches) ANSI/ASME 150 - 600 lb

| Flange Size | 150 lb (1/16 Raised Face) |                 |                        |                             | 300 lb (1/16" Raised Face) |                 |                        |                             | 400 lb (1/4" Raised Face)               |                 |                        |                             | 600 lb (19/4" Raised Face) |                 |                        |                             |
|-------------|---------------------------|-----------------|------------------------|-----------------------------|----------------------------|-----------------|------------------------|-----------------------------|---|-----------------|------------------------|-----------------------------|----------------------------|-----------------|------------------------|-----------------------------|
|             | Nominal Pipe Size (in)    | Number of Bolts | Diameter of Bolts (in) | Length of Headed Bolts (in) | Length of Stud Bolts (in)  | Number of Bolts | Diameter of Bolts (in) | Length of Headed Bolts (in) | Length of Stud Bolts (in)               | Number of Bolts | Diameter of Bolts (in) | Length of Headed Bolts (in) | Length of Stud Bolts (in)  | Number of Bolts | Diameter of Bolts (in) | Length of Headed Bolts (in) |
| 1/2         | 4                         | 1/2             | 1-3/4                  | 2-1/4                       | 4                          | 1/2             | 2                      | 2-1/2                       | For these sizes 600 lb Flanges are used | 4               | 1/2                    | 2-1/2                       | 3                          |                 |                        |                             |
| 3/4         | 4                         | 1/2             | 2                      | 2-1/4                       | 4                          | 5/8             | 2-1/2                  | 2-3/4                       |   | 4               | 5/8                    | 2-3/4                       | 3-1/4                      |                 |                        |                             |
| 1           | 4                         | 1/2             | 2                      | 2-1/2                       | 4                          | 5/8             | 2-1/2                  | 3                           |   | 4               | 5/8                    | 3                           | 3-1/2                      |                 |                        |                             |
| 1-1/4       | 4                         | 1/2             | 2-1/4                  | 2-1/2                       | 4                          | 5/8             | 2-3/4                  | 3                           |   | 4               | 5/8                    | 3-1/4                       | 3-3/4                      |                 |                        |                             |
| 1-1/2       | 4                         | 1/2             | 2-1/4                  | 2-3/4                       | 4                          | 3/4             | 3                      | 3-1/2                       |   | 4               | 3/4                    | 3-1/2                       | 4                          |                 |                        |                             |
| 2           | 4                         | 5/8             | 2-3/4                  | 3                           | 8                          | 5/8             | 3                      | 3-1/4                       |   | 8               | 5/8                    | 3-1/2                       | 4                          |                 |                        |                             |
| 2-1/2       | 4                         | 5/8             | 3                      | 3-1/4                       | 8                          | 3/4             | 3-1/4                  | 3-3/4                       |   | 8               | 3/4                    | 4                           | 4-1/2                      |                 |                        |                             |
| 3           | 4                         | 5/8             | 3                      | 3-1/2                       | 8                          | 3/4             | 3-1/2                  | 4                           |   | 8               | 3/4                    | 4-1/4                       | 4-3/4                      |                 |                        |                             |
| 3-1/2       | 8                         | 5/8             | 3                      | 3-1/2                       | 8                          | 3/4             | 3-3/4                  | 4-1/4                       |   | 8               | 7/8                    | 4-3/4                       | 5-1/4                      |                 |                        |                             |
| 4           | 8                         | 5/8             | 3                      | 3-1/2                       | 8                          | 3/4             | 3-3/4                  | 4-1/4                       |   | 8               | 7/8                    | 5                           | 5-1/2                      |                 |                        |                             |
| 5           | 8                         | 3/4             | 3-1/4                  | 3-3/4                       | 8                          | 3/4             | 4                      | 4-1/2                       | 8                                       | 7/8             | 5                      | 5-1/2                       |                            |                 |                        |                             |
| 6           | 8                         | 3/4             | 3-1/4                  | 3-3/4                       | 12                         | 3/4             | 4-1/4                  | 4-3/4                       | 12                                      | 7/8             | 5-1/4                  | 5-3/4                       |                            |                 |                        |                             |
| 8           | 8                         | 3/4             | 3-1/2                  | 4                           | 12                         | 7/8             | 4-3/4                  | 5-1/4                       | 12                                      | 1               | 6                      | 6-1/2                       |                            |                 |                        |                             |
| 10          | 12                        | 7/8             | 3-3/4                  | 4-1/2                       | 16                         | 1               | 5-1/4                  | 6                           | 16                                      | 1-1/8           | 6-3/4                  | 7-1/4                       |                            |                 |                        |                             |
| 12          | 12                        | 7/8             | 4                      | 4-1/2                       | 16                         | 1-1/8           | 5-3/4                  | 6-1/2                       | 16                                      | 1-1/4           | 7-1/4                  | 7-3/4                       |                            |                 |                        |                             |
| 14          | 12                        | 1               | 4-1/4                  | 5                           | 20                         | 1-1/8           | 6                      | 6-3/4                       | 20                                      | 1-1/4           | 7-1/2                  | 8                           |                            |                 |                        |                             |
| 16          | 16                        | 1               | 4-1/2                  | 5-1/4                       | 20                         | 1-1/4           | 6-1/2                  | 7-1/4                       | 20                                      | 1-3/8           | 8                      | 8-1/2                       |                            |                 |                        |                             |
| 18          | 16                        | 1-1/8           | 4-3/4                  | 5-3/4                       | 24                         | 1-1/4           | 6-3/4                  | 7-1/2                       | 24                                      | 1-3/8           | 8-1/4                  | 8-3/4                       |                            |                 |                        |                             |
| 20          | 20                        | 1-1/8           | 5-1/4                  | 6                           | 24                         | 1-1/4           | 7                      | 8                           | 24                                      | 1-1/2           | 9                      | 9-1/2                       |                            |                 |                        |                             |
| 24          | 20                        | 1-1/8           | 5-3/4                  | 6-3/4                       | 24                         | 1-1/2           | 7-3/4                  | 9                           | 24                                      | 1-3/4           | 10                     | 10-1/2                      |                            |                 |                        |                             |

### Dimensions (inches) ANSI/ASME 900 - 2500 lb

| Flange Size | 900 lb (1/4 Raised Face)                 |                 |                        |                             | 1500 lb (1/4" Raised Face) |                 |                        |                             | 2500 lb (1/4" Raised Face) |                 |                        |                             |
|-------------|--|-----------------|------------------------|-----------------------------|----------------------------|-----------------|------------------------|-----------------------------|----------------------------|-----------------|------------------------|-----------------------------|
|             | Nominal Pipe Size (in)                   | Number of Bolts | Diameter of Bolts (in) | Length of Headed Bolts (in) | Length of Stud Bolts (in)  | Number of Bolts | Diameter of Bolts (in) | Length of Headed Bolts (in) | Length of Stud Bolts (in)  | Number of Bolts | Diameter of Bolts (in) | Length of Headed Bolts (in) |
| 1/2         | For these sizes 1500 lb Flanges are used | 4               | 3/4                    | 3-1/2                       | 4                          | 4               | 3/4                    | 4-1/4                       | 4-3/4                      |                 |                        |                             |
| 3/4         |  | 4               | 3/4                    | 3-3/4                       | 4-1/4                      | 4               | 3/4                    | 4-1/4                       | 4-3/4                      |                 |                        |                             |
| 1           |  | 4               | 7/8                    | 4-1/4                       | 4-3/4                      | 4               | 7/8                    | 4-3/4                       | 5-1/4                      |                 |                        |                             |
| 1-1/4       |  | 4               | 7/8                    | 4-1/4                       | 4-3/4                      | 4               | 1                      | 5-1/4                       | 5-3/4                      |                 |                        |                             |
| 1-1/2       |  | 4               | 1                      | 4-3/4                       | 5-1/4                      | 4               | 1-1/8                  | 6                           | 6-1/2                      |                 |                        |                             |
| 2           |  | 8               | 7/8                    | 5                           | 5-1/2                      | 8               | 1                      | 6-1/4                       | 6-3/4                      |                 |                        |                             |
| 2-1/2       |  | 8               | 1                      | 5-1/2                       | 6                          | 8               | 1-1/8                  | 7                           | 7-1/2                      |                 |                        |                             |
| 3           | 8  | 7/8             | 5                      | 5-1/2                       | 8                          | 1-1/8           | 6-14/16                | 6-1/4                       | 8                          | 1-1/4           | 8                      | 8-1/2                       |
| 3-1/2       | -  | -               | -                      | -                           | -                          | -               | -                      | -                           | -                          | -               | -                      | -                           |
| 4           | 8  | 1-1/8           | 6                      | 6-1/2                       | 8                          | 1-1/4           | 7                      | 7-1/2                       | 8                          | 1-1/2           | 9-1/4                  | 9-3/4                       |
| 5           | 8  | 1-1/4           | 6-3/4                  | 7-1/4                       | 8                          | 1-1/2           | 9                      | 9-1/2                       | 8                          | 1-3/4           | 11                     | 11-1/2                      |
| 6           | 12                                       | 1-1/8           | 7                      | 7-1/2                       | 12                         | 1-3/8           | 9-1/2                  | 10                          | 8                          | 2               | 13                     | 13-1/2                      |
| 8           | 12                                       | 1-3/8           | 8                      | 8-1/2                       | 12                         | 1-5/8           | 10-3/4                 | 11-1/4                      | 12                         | 2               | 14-1/2                 | 15                          |
| 10          | 16                                       | 1-3/8           | 8-1/2                  | 9                           | 12                         | 1-7/8           | 12-3/4                 | 13-1/4                      | 12                         | 2-1/2           | 18-1/2                 | 19                          |
| 12          | 20                                       | 1-3/8           | 9-1/4                  | 9-3/4                       | 16                         | 2               | 14-1/4                 | 14-3/4                      | 12                         | 2-1/2           | 20-1/2                 | 21                          |
| 14          | 20                                       | 1-1/2           | 10                     | 10-1/2                      | 16                         | 2-1/4           | 15-1/2                 | 16                          |                            |                 |                        |                             |
| 16          | 20                                       | 1-5/8           | 10-1/2                 | 11                          | 16                         | 2-1/2           | 17                     | 17-1/2                      |                            |                 |                        |                             |
| 18          | 20                                       | 1-7/8           | 12-1/4                 | 12-3/4                      | 16                         | 2-3/4           | 18-3/4                 | 19-1/4                      |                            |                 |                        |                             |
| 20          | 20                                       | 2               | 13                     | 13-1/2                      | 16                         | 3               | 20-1/2                 | 21                          |                            |                 |                        |                             |
| 24          | 20                                       | 2-1/2           | 16-1/2                 | 17                          | 16                         | 3-1/2           | 23-1/2                 | 24                          |                            |                 |                        |                             |

Specifications to A193, B7, L7, B16 & B8M A194, 2H, G4 & G8M Stainless Steel SS316 and SS304 Grade 5 & Grade 8-8, A325 High Tensile & M.S.

Types: - Stud-Bolts, Hex Nut, HHMB.

# API6A 2000 ~ 15000 PSI (6B/6BX) FLANGES

Chart showing stud sizes & ring gasket size

| API SPECS FOR RING-JOINT FLANGES      | NEW API NOMINAL SIZE | FLANGE   |             |                   |                |                        |                   |               | API RING NO | STUDS WITH NUTS |                |                       |                    |
|---------------------------------------|----------------------|----------|-------------|-------------------|----------------|------------------------|-------------------|---------------|-------------|-----------------|----------------|-----------------------|--------------------|
|                                       |                      | A OD     | B THICKNESS | C TOTAL THICKNESS | D DIAM. OF HUB | E DIAM. OF BOLT CIRCLE | F PCD RING GROOVE | APPROX WT LBS |             | NO              | SIZE           | APPROX WT LBS PER SET | "OLD" NOMINAL SIZE |
| 2000 PSI WP                           | 2 1/16"              | 6 1/2"   | 1 5/16"     | 1 3/4"            | 3 5/16"        | 5"                     | 3 1/4"            | 9 lb          | R23/RX23    | 8               | 5/8 x 4 1/2    | 5                     | 2"                 |
|                                       | 2 1/8"               | 7 1/2"   | 1 7/16"     | 1 15/16"          | 3 15/16"       | 5 7/8"                 | 4"                | 13 lb         | R26/RX26    | 8               | 3/4 x 5        | 8                     | 2 1/2"             |
|                                       | 3 1/8"               | 8 1/4"   | 1 9/16"     | 2 1/8"            | 4 5/8"         | 6 5/8"                 | 4 7/8"            | 16 lb         | R31/RX31    | 8               | 3/4 x 5 1/4    | 8                     | 3"                 |
|                                       | 4 1/16"              | 10 3/4"  | 1 13/16"    | 2 7/16"           | 6"             | 8 1/2"                 | 5 7/8"            | 37 lb         | R37/RX37    | 8               | 7/8 x 6        | 12                    | 4"                 |
|                                       | 7 1/16"              | 14"      | 2 3/16"     | 2 15/16"          | 8 3/4"         | 11 1/2"                | 8 5/8"            | 80 lb         | R45/RX45    | 12              | 1 x 7          | 29                    | 6"                 |
|                                       | 9"                   | 16 1/2"  | 2 1/2"      | 3 3/16"           | 10 3/4"        | 13 3/4"                | 10 5/8"           | 115 lb        | R49/RX49    | 12              | 1 1/8 x 8      | 38                    | 8"                 |
|                                       | 11"                  | 20"      | 2 13/16"    | 3 1/16"           | 13 1/2"        | 17"                    | 12 3/4"           | 177 lb        | R53/RX53    | 16              | 1 1/8 x 8 3/4  | 73                    | 10"                |
| 3000 PSI WP                           | 2 1/16"              | 8 1/2"   | 1 13/16"    | 2 9/16"           | 4 1/8"         | 6 1/2"                 | 3 3/4"            | 25 lb         | R24/RX24    | 8               | 7/8 x 6        | 12                    | 2"                 |
|                                       | 2 1/8"               | 9 5/8"   | 1 15/16"    | 2 13/16"          | 4 7/8"         | 7 1/2"                 | 4 1/4"            | 36 lb         | R27/RX27    | 8               | 1 x 6 1/2      | 17                    | 2 1/2"             |
|                                       | 3 1/16"              | 9 1/2"   | 1 13/16"    | 2 7/16"           | 5"             | 7 1/2"                 | 4 7/8"            | 31 lb         | R31/RX31    | 8               | 7/8 x 6        | 12                    | 3"                 |
|                                       | 4 1/16"              | 11 1/2"  | 2 1/16"     | 3 1/16"           | 6 1/4"         | 9 1/4"                 | 5 7/8"            | 53 lb         | R37/RX37    | 8               | 1 1/8 x 7      | 24                    | 4"                 |
|                                       | 7 1/16"              | 15"      | 2 1/2"      | 3 15/16"          | 9 1/4"         | 12 1/2"                | 8 5/8"            | 106 lb        | R45/RX45    | 12              | 1 1/8 x 8      | 40                    | 6"                 |
|                                       | 9"                   | 18 1/2"  | 2 13/16"    | 4 3/16"           | 11 3/4"        | 15 1/2"                | 10 5/8"           | 172 lb        | R49/RX49    | 12              | 1 1/8 x 9      | 69                    | 8"                 |
|                                       | 11"                  | 21 1/2"  | 3 1/16"     | 4 9/16"           | 14 1/2"        | 18 1/2"                | 12 3/4"           | 245 lb        | R53/RX53    | 16              | 1 3/8 x 9 1/2  | 95                    | 10"                |
| 5000 PSI WP                           | 2 1/16"              | 8 1/2"   | 1 13/16"    | 2 9/16"           | 4 1/8"         | 6 1/2"                 | 3 3/4"            | 25 lb         | R24/RX24    | 8               | 7/8 x 6        | 12                    | 2"                 |
|                                       | 2 1/8"               | 9 5/8"   | 1 15/16"    | 2 13/16"          | 4 7/8"         | 7 1/2"                 | 4 1/4"            | 36 lb         | R27/RX27    | 8               | 1 x 6 1/2      | 17                    | 2 1/2"             |
|                                       | 3 1/16"              | 10 1/2"  | 2 3/16"     | 3 3/16"           | 5 1/4"         | 8"                     | 5 3/8"            | 48 lb         | R35/RX35    | 8               | 1 1/8 x 7 1/4  | 24                    | 3"                 |
|                                       | 4 1/16"              | 12 1/4"  | 2 7/16"     | 3 7/8"            | 6 3/8"         | 9 1/2"                 | 6 5/8"            | 73 lb         | R39/RX39    | 8               | 1 1/4 x 8      | 35                    | 4"                 |
|                                       | 7 1/16"              | 15 1/2"  | 3 5/16"     | 5 1/8"            | 9"             | 12 1/2"                | 8 5/8"            | 164 lb        | R46/RX46    | 12              | 1 3/8 x 10 3/4 | 75                    | 6"                 |
|                                       | 9"                   | 19"      | 4 1/16"     | 6 1/16"           | 11 1/2"        | 15 1/2"                | 10 5/8"           | 258 lb        | R50/RX50    | 12              | 1 3/8 x 12     | 124                   | 8"                 |
|                                       | 11"                  | 23"      | 4 1/16"     | 6 1/16"           | 14 1/2"        | 19"                    | 12 3/4"           | 436 lb        | R54/RX54    | 12              | 1 7/8 x 13 3/4 | 187                   | 10"                |
| 10000 PSI WP (SERIES 2900) (Obsolete) | 2"                   | 7 3/4"   | 2 3/8"      | 4 3/4"            | 3 1/8"         | 5 3/4"                 | 3 1/8"            | 28 lb         | R85/RX85    | 8               | 7/8 x 7        | 10                    | 2"                 |
|                                       | 2 1/2"               | 8 7/8"   | 2 3/4"      | 5 1/16"           | 3 3/4"         | 6 5/8"                 | 3 9/16"           | 45 lb         | R86/RX86    | 8               | 1 x 8          | 14                    | 2 1/2"             |
|                                       | 3"                   | 10"      | 3 1/16"     | 5 1/4"            | 4 3/8"         | 7 1/2"                 | 3 15/16"          | 57 lb         | R87/RX87    | 8               | 1 1/8 x 9      | 20                    | 3"                 |
|                                       | 3 1/2"               | 11 1/2"  | 3 3/8"      | 5 1/2"            | 5"             | 8 1/2"                 | 4 1/2"            | 100 lb        | R89/RX89    | 8               | 1 1/4 x 9 3/4  | 28                    | 3 1/2"             |
|                                       | 4"                   | 12 1/2"  | 3 5/8"      | 6 1/4"            | 5 9/16"        | 9 1/2"                 | 4 7/8"            | 104 lb        | R88/RX88    | 8               | 1 3/8 x 10 1/2 | 36                    | 4"                 |
| 1000 PSI WP (6BX)                     | 10"                  | 20 3/4"  | 5 1/4"      | 11"               | 11 3/4"        | 16 3/4"                | 10 1/4"           | 600 lb        | R91/R91     | 12              | 2 x 16 1/2     | 177                   | 10"                |
|                                       | 1 13/16"             | 7 3/8"   | 1 25/32"    | -                 | 3 1/2"         | 5 3/4"                 | + 3.062"          | -             | BX-151      | 8               | 3/4 x 5        | 8                     | 1 13/16"           |
|                                       | 2 1/16"              | 7 7/8"   | 1 7/64"     | -                 | 3 15/16"       | 6 1/4"                 | + 3.395"          | -             | BX-152      | 8               | 3/4 x 5 1/4    | 8                     | 2 1/16"            |
|                                       | 2 3/16"              | 9 1/2"   | 2 1/64"     | -                 | 4 3/4"         | 7 1/4"                 | + 4.046"          | -             | BX-153      | 8               | 7/8 x 6        | 11                    | 2 9/16"            |
|                                       | 3 1/16"              | 10 3/8"  | 2 19/64"    | -                 | 5 18/32"       | 8 1/2"                 | + 4.685"          | -             | BX-154      | 8               | 1 x 6 3/4      | 17                    | 3 1/8"             |
|                                       | 4 1/16"              | 12 7/16" | 2 48/64"    | -                 | 7 3/16"        | 10 3/16"               | + 5.930"          | -             | BX-155      | 8               | 1 1/8 x 8      | 26                    | 4 1/16"            |
|                                       | 7 1/16"              | 18 7/8"  | 4 1/16"     | -                 | 11 7/8"        | 15 7/8"                | + 9.521"          | -             | BX-156      | 12              | 1 1/2 x 11 1/4 | 95                    | 7 1/16"            |
| 9"                                    | 21 3/4"              | 4 7/8"   | -           | 14 3/4"           | 18 3/4"        | + 11.774"              | -                 | BX-157        | 16          | 1 1/2 x 13      | 112            | 9"                    |                    |
| 15000 PSI WP (6BX)                    | 11"                  | 25 3/4"  | 5 9/16"     | -                 | 17 3/4"        | 22 1/4"                | + 14.064"         | -             | BX-158      | 16              | 1 3/4 x 15     | 160                   | 11"                |
|                                       | 1 13/16"             | 8 3/16"  | 1 25/32"    | -                 | 3 27/32"       | 6 5/16"                | + 3.062"          | -             | BX-151      | 8               | 7/8 x 5 1/2    | 9                     | 1 13/16"           |
|                                       | 1 1/16"              | 8 3/4"   | 2"          | -                 | 4 3/8"         | 6 7/8"                 | + 3.395"          | -             | BX-152      | 8               | 7/8 x 6        | 11                    | 2 1/16"            |
|                                       | 2 3/16"              | 10"      | 2 1/4"      | -                 | 5 1/16"        | 7 7/8"                 | + 4.046"          | -             | BX-153      | 8               | 1 x 6 3/4      | 16                    | 2 9/16"            |
|                                       | 3 1/16"              | 11 5/16" | 2 17/32"    | -                 | 6 1/16"        | 9 1/16"                | + 4.685"          | -             | BX-154      | 8               | 1 1/8 x 7 1/2  | 24                    | 3 1/16"            |
|                                       | 4 1/16"              | 14 3/16" | 3 3/32"     | -                 | 7 11/16"       | 11 1/16"               | + 5.930"          | -             | BX-155      | 8               | 1 3/8 x 9 1/4  | 29                    | 4 1/16"            |
|                                       | 7 1/16"              | 19 7/8"  | 4 11/16"    | -                 | 12 13/16"      | 16 7/8"                | + 9.521"          | -             | BX-156      | 16              | 1 1/2 x 12 3/4 | 112                   | 7 1/16"            |
| 9"                                    | 25 1/2"              | 5 3/4"   | -           | 17"               | 21 3/4"        | + 11.774"              | -                 | BX-157        | 16          | 1 7/8 x 15 3/4  | 129            | 9"                    |                    |
| 11"                                   | 32"                  | 7 3/8"   | -           | 23"               | 28"            | + 14.064"              | -                 | BX-158        | 20          | 2 x 19 1/4      | 228            | 11"                   |                    |

For ring groove dimensions see Page 25 to 29 of our Oilfield Catalogue, [click here](#).

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