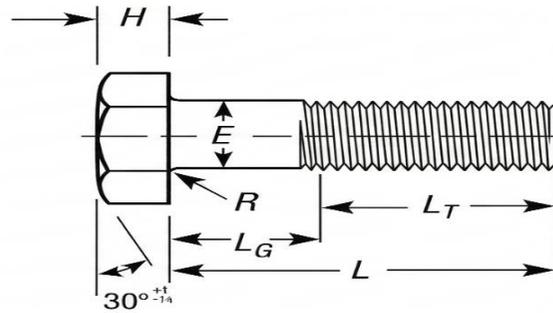
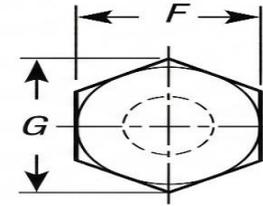


**Bolt with  
Reduced Diameter  
Body**



**Cut Thread**



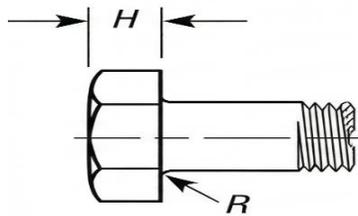
**Hex Head**

## Dimensions of Hex Bolts

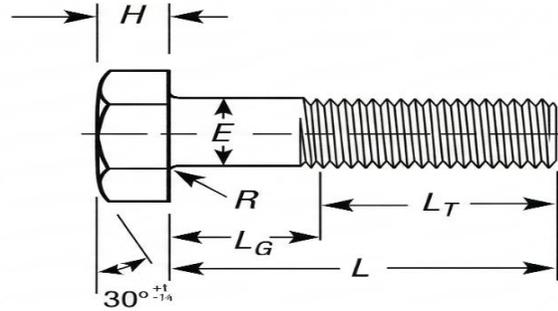
ANSI B 18.2.1-2012

| Nominal Size or<br>Basic Product<br>Diameter |        | E                          |       | F                  |       |       | G                       |       | H      |       |       | R                |      | L <sub>T</sub>                            |            |
|--|--------|----------------------------|-------|--------------------|-------|-------|-------------------------|-------|--------|-------|-------|------------------|------|---|------------|
|  |        | Full-size Body<br>Diameter |       | Width Across Flats |       |       | Width Across<br>Corners |       | Height |       |       | Radius of Fillet |      | Nominal Thread Length<br>for Bolt Lengths |            |
|  |        | Max.                       | Min.  | Basic              | Max.  | Min.  | Max.                    | Min.  | Basic  | Max.  | Min.  | Max.             | Min. | 6 in. and<br>Shorter                      | Over 6 in. |
| 1/4  | 0.2500 | 0.260                      | 0.237 | 7/16               | 0.438 | 0.425 | 0.505                   | 0.484 | 11/64  | 0.188 | 0.150 | 0.03             | 0.01 | 0.750                                     | 1.000      |
| 5/16   | 0.3125 | 0.324                      | 0.298 | 1/2                | 0.500 | 0.484 | 0.577                   | 0.552 | 7/32   | 0.235 | 0.195 | 0.03             | 0.01 | 0.875                                     | 1.125      |
| 3/8  | 0.3750 | 0.388                      | 0.360 | 9/16               | 0.562 | 0.544 | 0.650                   | 0.620 | 1/4    | 0.268 | 0.226 | 0.03             | 0.01 | 1.000                                     | 1.250      |
| 7/16   | 0.4375 | 0.452                      | 0.421 | 5/8                | 0.625 | 0.603 | 0.722                   | 0.687 | 19/64  | 0.316 | 0.272 | 0.03             | 0.01 | 1.125                                     | 1.375      |
| 1/2  | 0.5000 | 0.515                      | 0.482 | 3/4                | 0.750 | 0.725 | 0.866                   | 0.826 | 11/32  | 0.364 | 0.302 | 0.03             | 0.01 | 1.250                                     | 1.500      |
| 5/8  | 0.6250 | 0.642                      | 0.605 | 15/16              | 0.938 | 0.906 | 1.083                   | 1.033 | 27/64  | 0.444 | 0.378 | 0.06             | 0.02 | 1.500                                     | 1.750      |
| 3/4  | 0.7500 | 0.768                      | 0.729 | 1-1/8              | 1.125 | 1.088 | 1.299                   | 1.240 | 1/2    | 0.524 | 0.455 | 0.06             | 0.02 | 1.750                                     | 2.000      |
| 7/8  | 0.8750 | 0.895                      | 0.852 | 1-5/16             | 1.312 | 1.269 | 1.516                   | 1.447 | 37/64  | 0.604 | 0.531 | 0.06             | 0.02 | 2.000                                     | 2.250      |
| 1  | 1.0000 | 1.022                      | 0.976 | 1-1/2              | 1.500 | 1.450 | 1.732                   | 1.653 | 43/64  | 0.700 | 0.591 | 0.09             | 0.03 | 2.250                                     | 2.500      |
| 1-1/8  | 1.1250 | 1.149                      | 1.098 | 1-11/16            | 1.688 | 1.631 | 1.949                   | 1.859 | 3/4    | 0.780 | 0.658 | 0.09             | 0.03 | 2.500                                     | 2.750      |
| 1-1/4  | 1.2500 | 1.277                      | 1.223 | 1-7/8              | 1.875 | 1.812 | 2.165                   | 2.066 | 27/32  | 0.876 | 0.749 | 0.09             | 0.03 | 2.750                                     | 3.000      |
| 1-3/8  | 1.3750 | 1.404                      | 1.345 | 2-1/16             | 2.062 | 1.994 | 2.382                   | 2.273 | 29/32  | 0.940 | 0.810 | 0.09             | 0.03 | 3.000                                     | 3.250      |
| 1-1/2  | 1.5000 | 1.531                      | 1.470 | 2-1/4              | 2.250 | 2.175 | 2.598                   | 2.480 | 1      | 1.036 | 0.902 | 0.09             | 0.03 | 3.250                                     | 3.500      |
| 1-5/8  | 1.6250 | 1.658                      | 1.591 | 2-7/16             | 2.438 | 2.356 | 2.815                   | 2.616 | 1-3/32 | 1.116 | 0.978 | 0.09             | 0.03 | 3.500                                     | 3.750      |

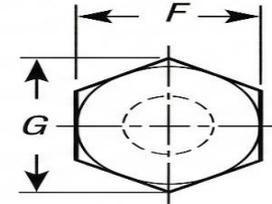
NOTE: ALL DIMENSIONS ARE IN INCHES.



Bolt with Reduced Diameter Body



Cut Thread



Hex Head

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### Dimensions of Hex Bolts

ANSI B 18.2.1-2012

| Nominal Size or Basic Product Diameter |        | E                       |       | F                  |       |       | G                    |       | H       |       |       | R                |      | L <sub>T</sub>                         |            |
|--|--------|-------------------------|-------|--------------------|-------|-------|----------------------|-------|---------|-------|-------|------------------|------|--|------------|
|  |        | Full-size Body Diameter |       | Width Across Flats |       |       | Width Across Corners |       | Height  |       |       | Radius of Fillet |      | Nominal Thread Length for Bolt Lengths |            |
|  |        | Max.                    | Min.  | Basic              | Max.  | Min.  | Max.                 | Min.  | Basic   | Max.  | Min.  | Max.             | Min. | 6 in. and Shorter                      | Over 6 in. |
| 1-34                                   | 1.7500 | 1.785                   | 1.716 | 2-5/8              | 2.625 | 2.538 | 3.031                | 2.893 | 1-5/32  | 1.196 | 1.054 | 0.12             | 0.04 | 3.750                                  | 4.000      |
| 1-7/8                                  | 1.8750 | 1.912                   | 1.839 | 2-13/16            | 2.812 | 2.719 | 3.248                | 3.099 | 1-1/4   | 1.276 | 1.130 | 0.12             | 0.04 | 4.000                                  | 4.250      |
| 2                                      | 2.0000 | 2.039                   | 1.964 | 3                  | 3.000 | 2.900 | 3.464                | 3.306 | 1-11/32 | 1.388 | 1.175 | 0.12             | 0.04 | 4.250                                  | 4.500      |
| 2-1/4                                  | 2.2500 | 2.305                   | 2.214 | 3-3/8              | 3.375 | 3.262 | 3.897                | 3.719 | 1-1/2   | 1.548 | 1.327 | 0.19             | 0.06 | 4.750                                  | 5.000      |
| 2-1/2                                  | 2.5000 | 2.559                   | 2.461 | 3-3/4              | 3.750 | 3.625 | 4.330                | 4.133 | 1-21/32 | 1.708 | 1.479 | 0.19             | 0.06 | 5.250                                  | 5.500      |
| 2-3/4                                  | 2.7500 | 2.827                   | 2.711 | 4-1/8              | 4.125 | 3.988 | 4.763                | 4.546 | 1-13/16 | 1.869 | 1.632 | 0.19             | 0.06 | 5.750                                  | 6.000      |
| 3                                      | 3.0000 | 3.081                   | 2.961 | 4-1/2              | 4.500 | 4.350 | 5.196                | 4.959 | 2       | 2.060 | 1.815 | 0.19             | 0.06 | 6.250                                  | 6.500      |
| 3-1/4                                  | 3.2500 | 3.335                   | 3.210 | 4-7/8              | 4.875 | 4.712 | 5.629                | 5.372 | 2-3/16  | 2.251 | 1.936 | 0.19             | 0.06 | 6.750                                  | 7.000      |
| 3-1/2                                  | 3.5000 | 3.589                   | 3.461 | 5-1/4              | 5.250 | 5.075 | 6.062                | 5.786 | 2-5/16  | 2.380 | 2.057 | 0.19             | 0.06 | 7.250                                  | 7.500      |
| 3-3/4                                  | 3.7500 | 3.858                   | 3.726 | 5-5/8              | 5.625 | 5.437 | 6.495                | 6.198 | 2-1/2   | 2.572 | 2.241 | 0.19             | 0.06 | 7.750                                  | 8.000      |
| 4                                      | 4.0000 | 4.111                   | 3.975 | 6                  | 6.000 | 5.800 | 6.928                | 6.612 | 2-11/16 | 2.764 | 2.424 | 0.19             | 0.06 | 8.250                                  | 8.500      |

NOTE: ALL DIMENSIONS ARE IN INCHES.