Figure 5.10
**Types of Bolts for Wood Construction**

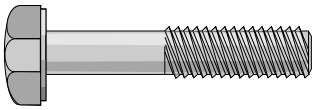
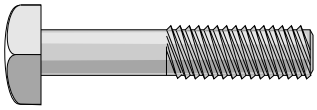
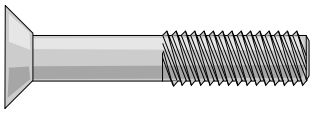
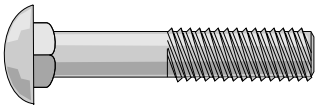
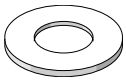
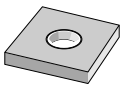
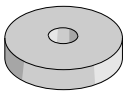
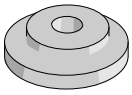
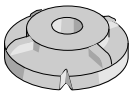
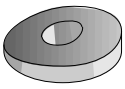
| Bolt Type | Usual Range of Diameters mm | in. | Uses | |
|---|---|---|---|---|
| Finished Hexagon Bolt | 6.4 to 38 | 1/4 to 1-1/2 | For countersinking flush or below the surface |  |
| Square Headed Machine Bolt | 6.4 to 51 | 1/4 to 2 | Same as finished hexagon bolt but gradually being replaced by them |  |
| Machine Bolt with Countersunk Head | 12.7 to 32 | 1/2 to 1-1/4 | Used where flush surface is required (may have to be used with countersunk washer |  |
| Carriage Bolt | 4.8 to 19 | 0.19 (No.10) to 3/4 | Used where head may be inaccessible during tightening |  |

Figure 5.11
**Washers for Bolts and Lag Screws**

| Washer Type | Uses | |
|---|---|---|
| Standard cut washer | Used for screws and bolts where the loading is lateral. Should not be used with split rings or shear plates. |  |
| Square plate washer | Used for bolts and with split rings and shear plates. Suitable for tensile loads. |  |
| Round plate washer | Used for bolts and with split rings and shear plates. Suitable for tensile loads. |  |
| Ogee (cast iron) washer | Used for bolts and with split rings and shear plates. Suitable for tensile loads. |  |
| Malleable iron washer | Used for bolts and with split rings and shear plates. Suitable for tensile loads. |  |
| Bevel washer | Used where the bolt to member alignment is not perpendicular. |  |