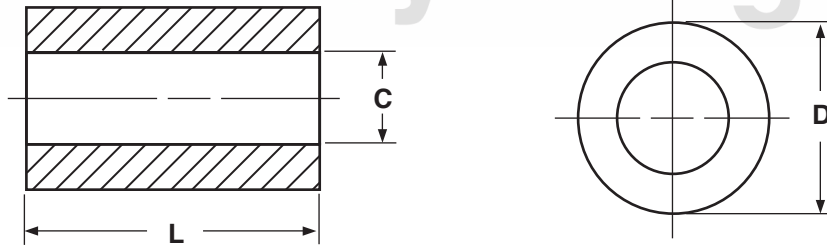


# ROUND SPACERS

# Fasteners By Design Inc.



| ROUND SPACERS                     |                |                    |      |                              |                |      |      |
|-----------------------------------|----------------|--------------------|------|------------------------------|----------------|------|------|
| D                                 | C              |                    |      | D                            | C              |      |      |
| Nominal Diameter<br>(± 1/64)      | Clearance Hole |                    |      | Nominal Diameter<br>(± 1/64) | Clearance Hole |      |      |
|                                   | Hole Number    | Max                | Min  |                              | Hole Number    | Max  | Min  |
| 3/16                              | #2             | .100               | .090 | 3/8                          | #12            | .228 | .218 |
| 3/16                              | #4             | .124               | .114 | 3/8                          | 1/4"           | .262 | .252 |
| 1/4                               | #2             | .100               | .090 | 1/2                          | #6             | .150 | .140 |
| 1/4                               | #4             | .124               | .114 | 1/2                          | #8             | .176 | .166 |
| 1/4                               | #6             | .150               | .140 | 1/2                          | #10            | .202 | .192 |
| 1/4                               | #8             | .176               | .166 | 1/2                          | #12            | .224 | .214 |
| 5/16                              | #4             | .124               | .114 | 1/2                          | 1/4"           | .262 | .252 |
| 5/16                              | #6             | .150               | .140 | 5/8                          | #6             | .150 | .140 |
| 5/16                              | #8             | .176               | .166 | 5/8                          | #8             | .176 | .166 |
| 5/16                              | #10            | .202               | .192 | 5/8                          | #10            | .202 | .192 |
| 3/8                               | #6             | .150               | .140 | 5/8                          | 1/4"           | .262 | .252 |
| 3/8                               | #8             | .176               | .166 | 5/8                          | #5/16          | .325 | .315 |
| 3/8                               | #10            | .202               | .192 | 5/8                          | #3/8           | .390 | .380 |
| Tolerance on Length (up to 4 in.) |                | Nylon parts: ±.015 |      | All other materials: ±.005   |                |      |      |

|                                     |  |
|-------------------------------------|--|
| <b>Description</b>                  | A cylindrical, unthreaded, mechanical device used to hold two components at a given distance from each other.  |
| <b>Applications/<br/>Advantages</b> | Round spacers are the most common shape, used primarily in minimum clearance space requirements. Aluminum is popular for its light weight/strength compromise. It is non-magnetic, performs well in severe temperatures, and has insulating properties. Nylon is a good insulator and has a surface smoothness which will not fray the insulation of wires that rub against it. Brass is used in making high-quality spacers. It is conductive, resists corrosion, and is non-magnetic. It is costlier and heavier than aluminum and is usually plated zinc or nickel. Stainless has the advantages of brass but has superior resistance to corrosion and chemical fumes. Steel is used in applications requiring greater strength, but it is heavier than aluminum and does not resist corrosion like aluminum, brass or stainless. |
| <b>Material</b>                     | <p><b>Aluminum:</b> 2011 Aluminum (<i>Copper: 5.0-6.0%; Silicon: 0.4% maximum; Iron: 0.7% maximum; Zinc: 0.3% maximum; Bismuth: 0.2-0.6%; Lead: 0.2-0.6%</i>)</p> <p><b>Nylon:</b> Nylon 6/6 Brass: C36000 Brass (<i>Copper: 60.00-63.00%; Lead: 2.50-3.70%; Iron: .35% maximum</i>)</p> <p><b>Stainless:</b> 303 stainless, passivated to ASTM A 380</p> <p><b>Steel:</b> 12L14 Steel-Leaded Grade A (<i>Carbon: .15% maximum; Manganese: .85-1.15%; Phosphorus: .04-.09%; Sulphur: .26-.35%</i>)</p>   |