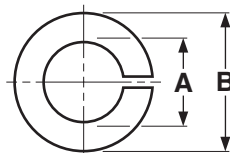
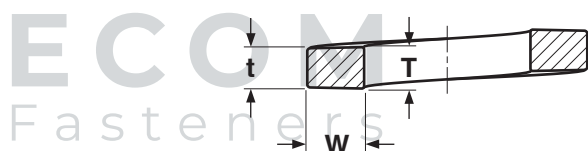


# HIGH-COLLAR HELICAL SPRING



| HIGH-COLLAR HELICAL SPRING LOCK WASHERS |        |                 |       |                  |                |                  | ASME B18.21.1-2016 |
|---|--------|-----------------|-------|------------------|----------------|------------------|--------------------|
| Nominal Washer Size                     |        | A               |       | B                | W              | $\frac{T+t}{2}$  |                    |
|   |        | Inside Diameter |       | Outside Diameter | Washer Section |                  |                    |
|   |        | Max             | Min   | Max              | Width<br>Min   | Thickness<br>Min |                    |
| #2 •                                    | 0.086  | 0.094           | 0.088 | 0.149            | 0.02           | 0.02             |                    |
| #4                                      | 0.112  | 0.120           | 0.114 | 0.173            | 0.022          | 0.022            |                    |
| #6                                      | 0.138  | 0.148           | 0.141 | 0.216            | 0.030          | 0.030            |                    |
| #8                                      | 0.164  | 0.174           | 0.167 | 0.267            | 0.042          | 0.047            |                    |
| #10                                     | 0.190  | 0.200           | 0.193 | 0.294            | 0.042          | 0.047            |                    |
| 1/4                                     | 0.250  | 0.260           | 0.252 | 0.363            | 0.047          | 0.078            |                    |
| 5/16                                    | 0.312  | 0.322           | 0.314 | 0.457            | 0.062          | 0.093            |                    |
| 3/8                                     | 0.375  | 0.385           | 0.377 | 0.550            | 0.076          | 0.125            |                    |
| 7/16                                    | 0.4375 | 0.450           | 0.440 | 0.644            | 0.090          | 0.140            |                    |
| 1/2                                     | 0.500  | 0.512           | 0.502 | 0.733            | 0.103          | 0.172            |                    |
| 9/16                                    | 0.5625 | 0.574           | 0.564 | 0.819            | 0.116          | 0.187            |                    |
| 5/8                                     | 0.625  | 0.641           | 0.628 | 0.917            | 0.125          | 0.203            |                    |
| 3/4                                     | 0.750  | 0.766           | 0.753 | 1.105            | 0.154          | 0.218            |                    |
| 7/8                                     | 0.875  | 0.894           | 0.878 | 1.291            | 0.182          | 0.234            |                    |
| 1                                       | 1.000  | 1.024           | 1.003 | 1.478            | 0.208          | 0.250            |                    |
| 1 1/8                                   | 1.125  | 1.153           | 1.129 | 1.663            | 0.236          | 0.313            |                    |
| 1 1/4                                   | 1.250  | 1.280           | 1.254 | 1.790            | 0.236          | 0.313            |                    |
| 1 1/2                                   | 1.500  | 1.534           | 1.504 | 2.159            | 0.292          | 0.375            |                    |

•#2 nominal diameter is independent of ASME B18.21.1

|                                |  |
|--------------------------------|--|
| <b>Description</b>             | A Hi-Collar washer is thicker and has a smaller outside diameter than a regular split lock washer.   |
| <b>Applications/Advantages</b> | Designed for use with smaller head screws, particularly sockets. Performs comparably to a regular split lock washer as a greater thickness compensates for smaller outside diameter.   |
| <b>Material</b>                | <b>Carbon Steel:</b> SAE J403 1055 - 1065<br><b>Stainless:</b> SAE J405 302-305 (#2 diameter made from 130 Stainless)  |
| <b>Hardness</b>                | <b>Carbon Steel:</b> Rockwell C38 - 46<br><b>Stainless:</b> Rockwell C35 - 43 (thru 5/8" diameter); Rockwell C32 - 43 (diameters over 5/8")  |
| <b>Twist Test</b>              | With the washer in a vice with the split ends free and straight above the vice jaws, a 90° segment of the free end is gripped with a wrench and bent. <b>Steel washers</b> are to withstand being twisted through a 90° angle without signs of fracture; <b>Stainless washers</b> are to withstand being twisted through a 45° angle without fracturing. |
| <b>Plating</b>                 | See Appendix-A for information about the plating of Hi-Collar split lock washers.  |