



**Heavy Duty
External Circlip
DIN 1460**

Standard Material:
Carbon Spring Steel

Stainless Steel
available on request

Circlip Dimensions

| Part no | Shaft | (T) | Tolerance | (D) | Tolerance | (C) | (B) | (L) | (H) | Fr KN |
|---------|-------|------|-------------|------|-------------|-------|-----|-----|-----|-------|
| 1460012 | 12 | 1.50 | +0.00 -0.06 | 11.0 | +0.10 -0.36 | 19.0 | 1.8 | 3.3 | 1.7 | 11.3 |
| 1460013 | 13 | 1.50 | +0.00 -0.06 | 11.9 | +0.10 -0.36 | 20.2 | 2.0 | 3.4 | 1.7 | 5.8 |
| 1460014 | 14 | 1.50 | +0.00 -0.06 | 12.9 | +0.10 -0.36 | 21.4 | 2.1 | 3.5 | 1.7 | 6.4 |
| 1460015 | 15 | 1.50 | +0.00 -0.06 | 13.8 | +0.10 -0.36 | 22.6 | 2.4 | 3.6 | 2.0 | 15.5 |
| 1460016 | 16 | 1.50 | +0.00 -0.06 | 14.7 | +0.10 -0.36 | 23.8 | 2.5 | 3.7 | 2.0 | 16.6 |
| 1460017 | 17 | 1.50 | +0.00 -0.06 | 15.7 | +0.10 -0.36 | 25.0 | 2.6 | 3.8 | 1.7 | 18.0 |
| 1460018 | 18 | 1.50 | +0.00 -0.06 | 16.5 | +0.10 -0.36 | 26.2 | 2.7 | 3.9 | 2.0 | 26.6 |
| 1460019 | 19 | 1.50 | +0.00 -0.06 | 17.5 | +0.13 -0.42 | 27.2 | 2.7 | 3.9 | 2.0 | 26.6 |
| 1460020 | 20 | 1.75 | +0.00 -0.06 | 18.5 | +0.13 -0.42 | 28.4 | 3.0 | 4.0 | 2.0 | 36.3 |
| 1460022 | 22 | 1.75 | +0.00 -0.06 | 20.5 | +0.13 -0.42 | 30.8 | 3.1 | 4.2 | 2.0 | 36.0 |
| 1460023 | 23 | 1.75 | +0.00 -0.06 | 21.5 | +0.13 -0.42 | 32.0 | 3.2 | 4.3 | 2.0 | 35.7 |
| 1460024 | 24 | 1.75 | +0.00 -0.06 | 22.2 | +0.21 -0.42 | 33.2 | 3.2 | 4.4 | 2.0 | 34.2 |
| 1460025 | 25 | 2.00 | +0.00 -0.07 | 23.2 | +0.21 -0.42 | 34.2 | 3.4 | 4.4 | 2.0 | 45.0 |
| 1460026 | 26 | 2.00 | +0.00 -0.07 | 24.2 | +0.21 -0.42 | 35.5 | 3.3 | 4.5 | 2.0 | 44.0 |
| 1460027 | 27 | 2.00 | +0.00 -0.07 | 24.9 | +0.21 -0.42 | 36.7 | 3.4 | 4.6 | 2.0 | 45.5 |
| 1460028 | 28 | 2.00 | +0.00 -0.07 | 25.9 | +0.21 -0.42 | 37.9 | 3.5 | 4.7 | 2.0 | 57.0 |
| 1460029 | 29 | 2.00 | +0.00 -0.07 | 26.9 | +0.21 -0.42 | 39.1 | 3.8 | 4.8 | 2.0 | 56.5 |
| 1460030 | 30 | 2.00 | +0.00 -0.07 | 27.9 | +0.21 -0.42 | 40.5 | 4.1 | 5.0 | 2.0 | 57.0 |
| 1460032 | 32 | 2.00 | +0.00 -0.07 | 29.6 | +0.25 -0.50 | 43.0 | 4.1 | 5.2 | 2.5 | 57.0 |
| 1460033 | 33 | 2.00 | +0.00 -0.07 | 30.5 | +0.25 -0.50 | 44.0 | 4.0 | 5.2 | 2.5 | 56.0 |
| 1460034 | 34 | 2.50 | +0.00 -0.07 | 31.5 | +0.25 -0.50 | 45.4 | 4.2 | 5.4 | 2.5 | 87.0 |
| 1460035 | 35 | 2.50 | +0.00 -0.07 | 32.2 | +0.25 -0.50 | 46.8 | 4.2 | 5.6 | 2.5 | 86.0 |
| 1460036 | 36 | 2.50 | +0.00 -0.07 | 33.2 | +0.25 -0.50 | 47.8 | 4.2 | 5.6 | 2.5 | 101.5 |
| 1460038 | 38 | 2.50 | +0.00 -0.07 | 35.2 | +0.25 -0.50 | 50.2 | 4.3 | 5.8 | 2.5 | 101.0 |
| 1460040 | 40 | 2.50 | +0.00 -0.07 | 36.5 | +0.39 -0.90 | 52.6 | 4.4 | 6.0 | 2.5 | 104.0 |
| 1460042 | 42 | 2.50 | +0.00 -0.07 | 38.5 | +0.39 -0.90 | 55.7 | 4.5 | 6.5 | 2.5 | 102.0 |
| 1460045 | 45 | 2.50 | +0.00 -0.07 | 41.5 | +0.39 -0.90 | 59.1 | 4.7 | 6.7 | 2.5 | 100.0 |
| 1460048 | 48 | 2.50 | +0.00 -0.07 | 44.5 | +0.39 -0.90 | 62.5 | 5.0 | 6.9 | 2.5 | 101.0 |
| 1460050 | 50 | 3.00 | +0.00 -0.08 | 45.8 | +0.39 -0.90 | 64.5 | 5.1 | 6.9 | 2.5 | 165.0 |
| 1460052 | 52 | 3.00 | +0.00 -0.08 | 47.8 | +0.39 -0.90 | 66.7 | 5.2 | 7.0 | 2.5 | 165.0 |
| 1460055 | 55 | 3.00 | +0.00 -0.08 | 50.8 | +0.46 -1.10 | 70.2 | 5.4 | 7.2 | 2.5 | 161.0 |
| 1460056 | 56 | 3.00 | +0.00 -0.08 | 51.8 | +0.46 -1.10 | 71.6 | 5.5 | 7.3 | 2.5 | 53.0 |
| 1460058 | 58 | 3.00 | +0.00 -0.08 | 53.8 | +0.46 -1.10 | 73.6 | 5.6 | 7.3 | 2.5 | 160.0 |
| 1460060 | 60 | 3.00 | +0.00 -0.08 | 55.8 | +0.46 -1.10 | 75.6 | 5.8 | 7.4 | 2.5 | 156.0 |
| 1460062 | 62 | 3.00 | +0.00 -0.08 | 57.8 | +0.46 -1.10 | 77.8 | 6.0 | 7.5 | 2.5 | 69.3 |
| 1460063 | 63 | 3.00 | +0.00 -0.08 | 58.8 | +0.46 -1.10 | 79.0 | 6.2 | 7.6 | 2.5 | 70.2 |
| 1460035 | 65 | 4.00 | +0.00 -0.08 | 60.8 | +0.46 -1.10 | 81.4 | 6.3 | 7.8 | 3.0 | 346.0 |
| 1460068 | 68 | 2.50 | +0.00 -0.08 | 63.5 | +0.46 -1.10 | 84.4 | 6.5 | 8.0 | 3.0 | 135.9 |
| 1460070 | 70 | 4.00 | +0.00 -0.08 | 65.5 | +0.46 -1.10 | 87.0 | 6.6 | 8.1 | 3.0 | 343.0 |
| 1460072 | 72 | 4.00 | +0.00 -0.08 | 67.5 | +0.46 -1.10 | 89.2 | 6.8 | 8.2 | 3.0 | 131.8 |
| 1460075 | 75 | 4.00 | +0.00 -0.08 | 70.5 | +0.46 -1.10 | 92.7 | 7.0 | 8.4 | 3.0 | 333.0 |
| 1460078 | 78 | 4.00 | +0.00 -0.08 | 73.5 | +0.46 -1.10 | 96.1 | 7.3 | 8.6 | 3.0 | 131.3 |
| 1460080 | 80 | 4.00 | +0.00 -0.10 | 74.5 | +0.46 -1.10 | 98.1 | 7.4 | 8.6 | 3.0 | 328.0 |
| 1460082 | 82 | 4.00 | +0.00 -0.10 | 76.5 | +0.46 -1.10 | 100.3 | 7.6 | 8.7 | 3.0 | |
| 1460085 | 85 | 4.00 | +0.00 -0.10 | 79.5 | +0.46 -1.10 | 103.3 | 7.8 | 8.7 | 3.5 | 383.0 |
| 1460087 | 87 | 3.25 | +0.00 -0.10 | 81.5 | +0.54 -1.30 | 105.5 | 7.9 | 8.8 | 3.5 | |
| 1460090 | 90 | 4.00 | +0.00 -0.10 | 84.5 | +0.54 -1.30 | 108.5 | 8.2 | 8.8 | 3.5 | 386.0 |
| 1460092 | 92 | 4.00 | +0.00 -0.10 | 86.5 | +0.54 -1.30 | 111.0 | 8.4 | 9.0 | 3.5 | |
| 1460095 | 95 | 4.00 | +0.00 -0.10 | 89.5 | +0.54 -1.30 | 114.8 | 8.6 | 9.4 | 3.5 | 378.0 |
| 1460098 | 98 | 4.00 | +0.00 -0.10 | 92.5 | +0.54 -1.30 | 118.0 | 9.0 | 9.5 | 3.5 | |
| 1460100 | 100 | 4.00 | +0.00 -0.10 | 94.5 | +0.54 -1.30 | 120.2 | 9.0 | 9.6 | 3.5 | 368.0 |

Groove Dimensions

| (G) | Tolerance | (W) | (N) | Fn KN |
|------|-------------|------|-----|-------|
| 11.5 | +0.00 -0.11 | 1.6 | 0.7 | 1.5 |
| 12.4 | +0.00 -0.11 | 1.6 | 0.9 | |
| 13.4 | +0.00 -0.11 | 1.6 | 0.9 | |
| 14.3 | +0.00 -0.11 | 1.6 | 0.7 | 3.2 |
| 15.2 | +0.00 -0.11 | 1.6 | 1.2 | 3.3 |
| 16.2 | +0.00 -0.11 | 1.6 | 1.5 | 4.3 |
| 17.0 | +0.00 -0.11 | 1.6 | 1.8 | 5.5 |
| 18.0 | +0.00 -0.11 | 1.6 | 1.8 | 5.8 |
| 19.0 | +0.00 -0.15 | 1.85 | 1.6 | 5.6 |
| 21.0 | +0.00 -0.15 | 1.85 | 1.5 | 5.6 |
| 22.0 | +0.00 0.15 | 1.85 | 1.8 | 7.0 |
| 22.9 | +0.00 -0.21 | 1.85 | 1.9 | 8.0 |
| 23.9 | +0.00 -0.21 | 2.15 | 1.9 | 8.3 |
| 24.9 | +0.00 -0.21 | 2.15 | 2.4 | 10.7 |
| 25.6 | +0.00 -0.21 | 2.15 | 2.3 | 10.3 |
| 26.6 | +0.00 -0.21 | 2.15 | 2.1 | 10.0 |
| 27.6 | +0.00 -0.21 | 2.15 | 2.1 | 10.4 |
| 28.6 | +0.00 -0.21 | 2.15 | 2.1 | 10.7 |
| 30.3 | +0.00 -0.21 | 2.15 | 2.5 | 12.9 |
| 31.3 | +0.00 -0.25 | 2.15 | 2.5 | 14.3 |
| 32.3 | +0.00 -0.25 | 2.65 | 2.8 | 16.4 |
| 33.0 | +0.00 -0.25 | 2.65 | 3.0 | 17.8 |
| 34.0 | +0.00 -0.25 | 2.65 | 3.3 | 20.1 |
| 36.0 | +0.00 -0.25 | 2.65 | 3.3 | 21.2 |
| 37.5 | +0.00 -0.25 | 2.65 | 3.8 | 25.3 |
| 39.5 | +0.00 -0.25 | 2.65 | 3.8 | 26.7 |
| 42.5 | +0.00 -0.25 | 2.65 | 3.8 | 28.6 |
| 45.5 | +0.00 -0.25 | 2.65 | 3.8 | 30.7 |
| 47.0 | +0.00 -0.25 | 3.15 | 4.5 | 38.2 |
| 49.0 | +0.00 -0.25 | 3.15 | 4.5 | 39.7 |
| 52.0 | +0.00 -0.30 | 3.15 | 4.5 | 42.0 |
| 53.0 | +0.00 -0.30 | 3.15 | 4.5 | 42.8 |
| 55.0 | +0.00 -0.30 | 3.15 | 4.5 | 44.3 |
| 57.0 | +0.00 -0.30 | 3.15 | 4.5 | 46.0 |
| 59.0 | +0.00 -0.30 | 3.15 | 4.5 | 47.5 |
| 60.0 | +0.00 -0.30 | 3.15 | 4.5 | 48.3 |
| 62.0 | +0.00 -0.30 | 4.15 | 4.5 | 49.8 |
| 65.0 | +0.00 -0.30 | 4.15 | 4.5 | 52.2 |
| 67.0 | +0.00 -0.30 | 4.15 | 4.5 | 53.8 |
| 69.0 | +0.00 -0.30 | 4.15 | 4.5 | 55.3 |
| 72.0 | +0.00 -0.30 | 4.15 | 4.5 | 57.6 |
| 75.0 | +0.00 -0.30 | 4.15 | 5.3 | 60.0 |
| 76.5 | +0.00 -0.30 | 4.15 | 5.3 | 71.6 |
| 78.5 | +0.00 -0.30 | 4.15 | 5.3 | 73.5 |
| 81.5 | +0.00 -0.35 | 4.15 | 5.3 | 76.3 |
| 83.5 | +0.00 -0.35 | 4.15 | 5.3 | 78.2 |
| 86.5 | +0.00 -0.35 | 4.15 | 5.3 | 80.8 |
| 88.5 | +0.00 -0.35 | 4.15 | 5.3 | 82.7 |
| 91.5 | +0.00 -0.35 | 4.15 | 5.3 | 85.5 |
| 94.5 | +0.00 -0.35 | 4.15 | 5.3 | 88.2 |
| 96.5 | +0.00 -0.35 | 4.15 | 5.3 | 90.0 |