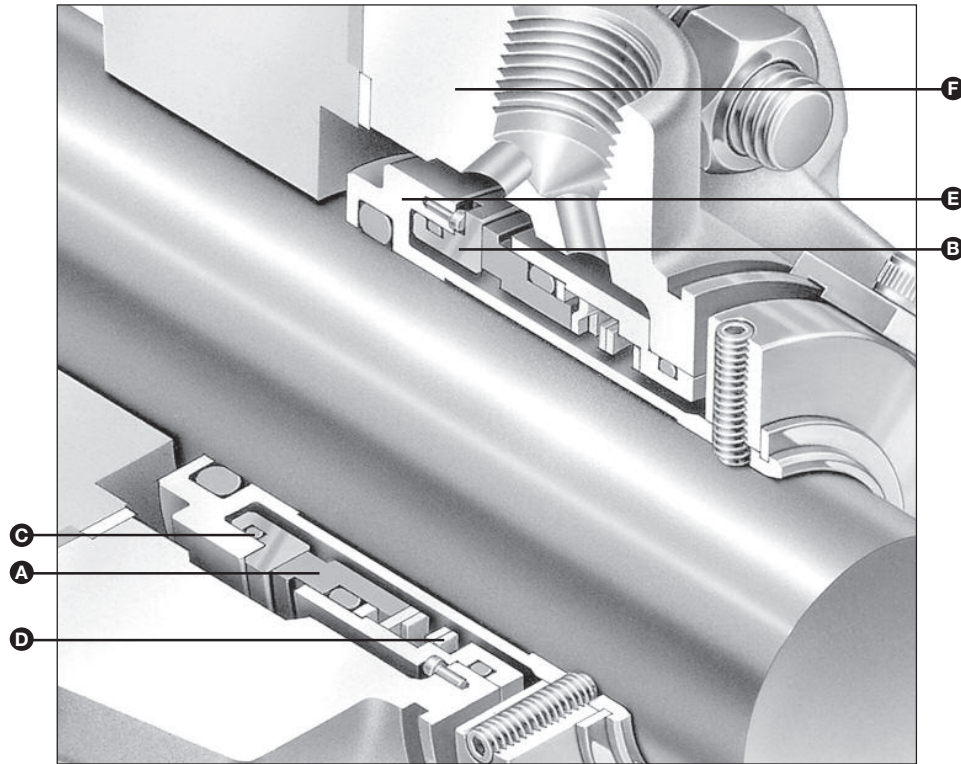


- A – Face/Primary ring
- B – Seat/Mating ring
- C – Secondary O-ring
- D – Non-clogging wave spring
- E – Sleeve
- F – Gland



Product Description

The 5600 Series is a modular cartridge seal family that includes interchangeable elastomer bellows, metal bellows, and elastomer O-ring pusher seal designs.

- Type 5610 single seal arrangements incorporate an elastomer O-ring as the secondary sealing member
- A common seal head/mating ring set, utilized throughout all versions, is reversible to allow rotating seat/mating ring or rotating seal head operation, and is interchangeable with metal bellows seal heads
- Seal has quench options of carbon ring throttle bush (5610Q) and lip seal (5610L)

Design Features

- Reversible seal head
- Fits ANSI B73.1M, ISO 3069 and DIN 24960 seal chambers
- Optimized primary ring design for greater reliability
- Non-clogging wave spring outside the product

Performance Capabilities

- Temperature: -30° to 205°C/-20° to 400°F
- Pressure: Up to 21 barg/300 psig (up to 75mm/3.00")
Up to 13 barg/200 psig (75mm/3.000" and over)
- Speed: Up to 25 m/s/5000 fpm
- End play/axial float allowance: 0.13mm/0.005"
- End play/axial float allowance: 0.13mm/0.005"
- Runout/out of squareness: 0.05mm/0.002"

Available with John Crane Diamond® Technology

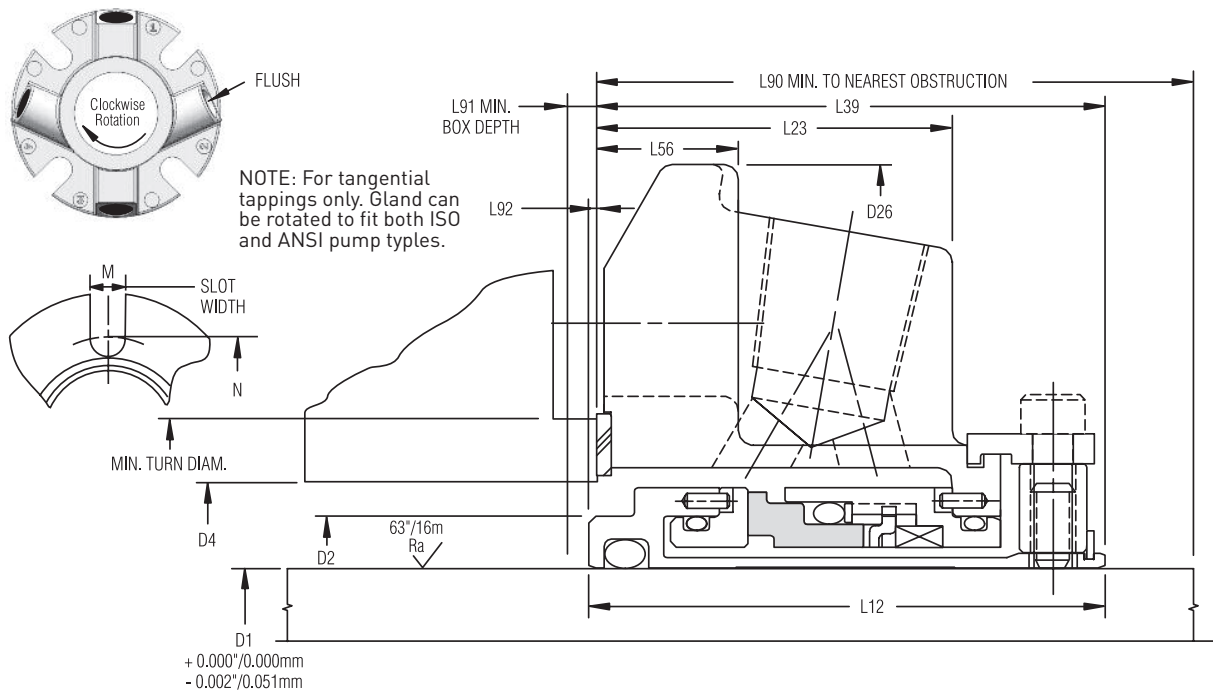
- Brings the features and benefits of pure diamond to mechanical seals
- Withstands abrasive, chemically-aggressive, poor-lubricating and intermittent dry-running applications
- Reduces energy consumption and cooling requirements



TYPE 5610/5610L/5610Q

SINGLE O-RING SEALS

Type 5610 Typical Arrangement



Type 5610 Dimensional Data (Inches)

| Size D1 | D2 | D4 | | D26 | L12 | L23 | L39 | L56 | L90 | L91 | L92 | M | N |
|---------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| | | Min. | Max. | | | | | | | | | | |
| 1.000 | 1.375 | 1.445 | 1.889 | 4.000 | 1.989 | 1.353 | 1.954 | 0.531 | 2.000 | 0.160 | 0.035 | 0.525 | 2.805 |
| 1.125 | 1.500 | * | 2.015 | 4.125 | 2.062 | 1.446 | 2.062 | 0.531 | 2.125 | 0.125 | * | 0.525 | 2.933 |
| 1.250 | 1.625 | * | 2.294 | 4.250 | 2.062 | 1.446 | 2.062 | 0.531 | 2.125 | 0.125 | * | 0.525 | 3.213 |
| 1.375 | 1.750 | * | 2.421 | 4.375 | 2.062 | 1.446 | 2.062 | 0.531 | 2.125 | 0.125 | * | 0.525 | 3.338 |
| 1.500 | 1.937 | 2.007 | 2.680 | 4.875 | 2.156 | 1.487 | 2.125 | 0.593 | 2.187 | 0.156 | 0.031 | 0.525 | 3.599 |
| 1.625 | 2.062 | 2.132 | 2.812 | 5.000 | 2.156 | 1.487 | 2.125 | 0.593 | 2.187 | 0.156 | 0.031 | 0.562 | 3.766 |
| 1.750 | 2.170 | 2.240 | 2.918 | 5.250 | 2.156 | 1.487 | 2.125 | 0.593 | 2.187 | 0.156 | 0.031 | 0.562 | 3.875 |
| 1.875 | 2.312 | 2.382 | 2.918 | 5.250 | 2.156 | 1.487 | 2.125 | 0.593 | 2.187 | 0.156 | 0.031 | 0.562 | 3.875 |
| 2.000 | 2.437 | 2.507 | 3.015 | 5.500 | 2.375 | 1.601 | 2.312 | 1.063 | 2.375 | 0.187 | 0.062 | 0.562 | 4.000 |
| 2.125 | 2.562 | 2.632 | 3.360 | 5.859 | 2.375 | 1.601 | 2.312 | 0.593 | 2.375 | 0.187 | 0.062 | 0.687 | 4.469 |
| 2.250 | 2.687 | 2.757 | 3.485 | 6.500 | 2.375 | 1.601 | 2.312 | 0.593 | 2.375 | 0.187 | 0.062 | 0.687 | 4.566 |
| 2.375 | 2.812 | 2.882 | 3.610 | 6.500 | 2.484 | 1.717 | 2.466 | 0.625 | 2.528 | 0.143 | 0.018 | 0.687 | 4.719 |
| 2.500 | 3.062 | * | 3.891 | 6.750 | 2.484 | 1.717 | 2.562 | 0.625 | 2.625 | 0.125 | * | 0.687 | 5.000 |
| 2.625 | 3.312 | * | 4.062 | 6.750 | 2.500 | 1.625 | 2.500 | 0.625 | 2.562 | 0.125 | * | 0.687 | 5.170 |
| 2.750 | 3.312 | * | 4.062 | 6.750 | 2.500 | 1.625 | 2.500 | 0.625 | 2.562 | 0.125 | * | 0.687 | 5.170 |
| 2.875 | 3.375 | * | 4.186 | 7.000 | 2.500 | 1.725 | 2.500 | 0.625 | 2.562 | 0.125 | * | 0.687 | 5.312 |
| 3.000 | 3.625 | * | 4.469 | 7.750 | 2.500 | 1.787 | 2.562 | 0.685 | 2.625 | 0.125 | * | 0.812 | 5.720 |
| 3.125 | 3.750 | 3.853 | 4.600 | 7.875 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 5.845 |
| 3.250 | 3.750 | 3.853 | 4.600 | 7.437 | 2.562 | 1.593 | 2.510 | ** | 2.635 | 0.177 | 0.052 | 0.812 | 5.845 |
| 3.375 | 4.000 | 4.125 | 4.850 | 8.125 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 6.095 |
| 3.500 | 4.125 | 4.250 | 4.975 | 8.250 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 6.220 |
| 3.625 | 4.218 | 4.343 | 5.100 | 8.375 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.687 | 6.250 |
| 3.750 | 4.343 | 4.468 | 5.199 | 8.750 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.687 | 6.770 |
| 3.875 | 4.468 | 4.593 | 5.375 | 8.750 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 6.636 |
| 4.000 | 4.593 | 4.718 | 5.500 | 9.000 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 6.761 |
| 4.125 | 4.718 | 4.843 | 5.625 | 9.000 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 6.886 |
| 4.250 | 4.843 | 4.968 | 5.750 | 9.250 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 7.011 |
| 4.500 | 5.093 | 5.218 | 6.000 | 9.500 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 7.261 |
| 4.750 | 5.343 | 5.468 | 6.313 | 10.375 | 2.562 | 1.593 | 2.562 | ** | 2.687 | 0.125 | * | 0.812 | 7.574 |
| 5.000 | 5.843 | 5.968 | 7.260 | 12.000 | 2.953 | 1.749 | 3.043 | ** | 3.168 | 0.125 | * | 0.812 | 10.000 |
| 5.250 | 6.093 | 6.218 | 7.510 | 12.250 | 2.953 | 1.749 | 3.043 | ** | 3.168 | 0.125 | * | 0.812 | 10.250 |
| 5.500 | 6.343 | 6.468 | 8.000 | 12.687 | 2.953 | 1.749 | 3.043 | ** | 3.168 | 0.125 | * | 0.937 | 10.500 |

*Not applicable. Completely outside mounted. **L56 not applicable. Refer to L23 for sizes over 3".



TYPE 5610/5610L/5610Q

SINGLE O-RING SEALS

Technical Specification

Type 5610 Large Bore Dimensional Data (Inches)

| Size D1 | D2 | D4 | | D26 | L12 | L23 | L39 | L56 | L90 | L91 | L92 | M | N | Min. Turn Dia. |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
| | | Min. | Max. | | | | | | | | | | | |
| 1.375 | 1.750 | 2.875 | 3.023 | 5.375 | 2.063 | 1.446 | 2.062 | 0.625 | 2.125 | 0.250 | 0.125 | 0.562 | 4.062 | 3.268 |
| 1.750 | 2.170 | 3.500 | 3.925 | 6.500 | 2.156 | 1.487 | 2.125 | 0.656 | 2.187 | 0.250 | 0.125 | 0.687 | 5.093 | 3.885 |
| 1.875 | 2.312 | 3.625 | 3.734 | 6.500 | 2.156 | 1.316 | 1.954 | 0.485 | 2.017 | 0.327 | 0.202 | 0.687 | 5.093 | ** |
| 2.125 | 2.562 | 3.875 | 4.250 | 7.156 | 2.375 | 1.570 | 2.282 | 0.749 | 2.407 | 0.219 | 0.094 | 0.687 | 5.687 | 4.264 |
| 2.500 | 3.062 | 4.750 | 5.078 | 8.000 | 2.484 | 1.697 | 2.407 | 0.749 | 2.625 | 0.204 | 0.079 | 0.687 | 6.062 | 5.139 |
| 2.625 | 3.312 | 4.625 | 4.740 | 8.000 | 2.500 | 1.617 | 2.329 | 0.578 | 2.454 | 0.296 | 0.171 | 0.687 | 6.062 | *** |
| 2.750 | 3.312 | 4.750 | 4.875 | 8.000 | 2.500 | 1.697 | 2.407 | 0.656 | 2.532 | 0.218 | 0.093 | 0.687 | 6.062 | 5.139 |

**Seal cartridge is OD registered on the turn diam. of 4.125".

***Seal cartridge is OD registered on the turn diam. of 5.125".

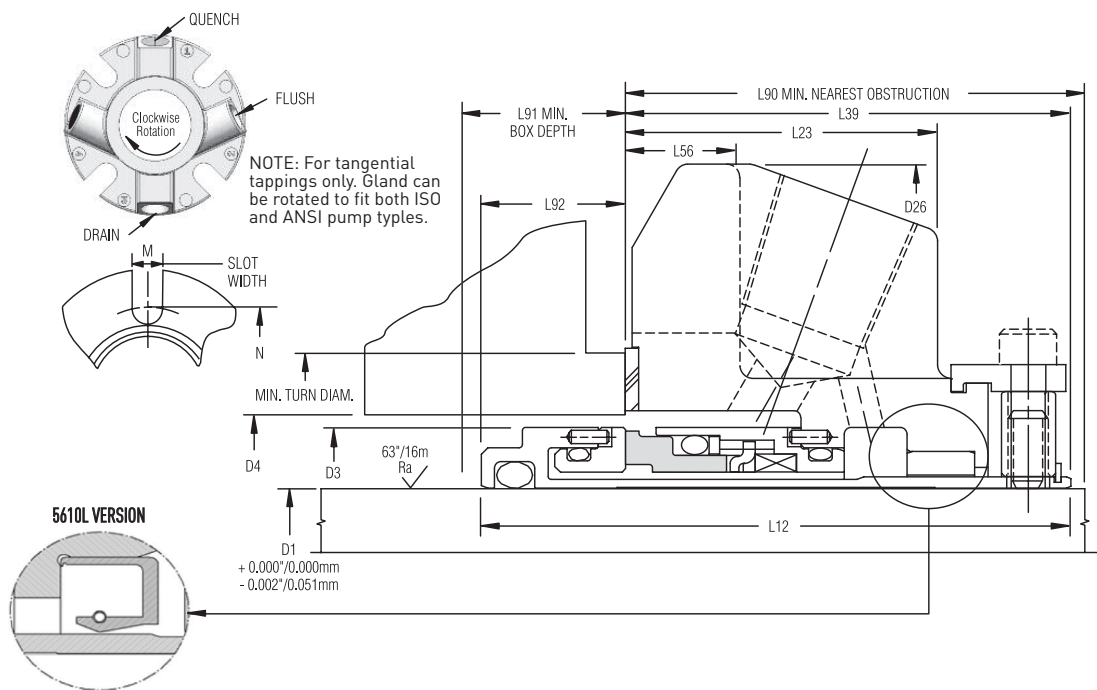
Type 5610 Dimensional Data (mm)

| Size D1 | Size Code | D2 | D4 | | D26 | L12 | L23 | L39 | L56 | L90 | L91 | L92 | M | N |
|---------|-----------|-------|-------|-------|-------|------|------|------|------|------|-----|-----|------|-------|
| | | | Min. | Max. | | | | | | | | | | |
| 24 | 0240 | 34.9 | 36.7 | 48.0 | 101.6 | 50.5 | 34.4 | 49.6 | 13.5 | 50.8 | 4.0 | 0.9 | 13.3 | 71.2 |
| 25 | 0250 | 34.9 | 36.7 | 48.0 | 101.6 | 50.5 | 34.4 | 49.6 | 13.5 | 50.8 | 4.0 | 0.9 | 13.3 | 71.2 |
| 28 | 0280 | 38.1 | * | 51.2 | 104.8 | 52.4 | 36.7 | 52.4 | 13.5 | 54.0 | 3.2 | * | 13.3 | 74.5 |
| 30 | 0300 | 40.0 | * | 56.5 | 108.0 | 52.4 | 36.7 | 52.4 | 13.5 | 54.0 | 3.2 | * | 13.3 | 79.9 |
| 32 | 0320 | 41.3 | * | 58.3 | 108.0 | 52.4 | 36.7 | 52.4 | 13.5 | 54.0 | 3.2 | * | 13.3 | 81.6 |
| 33 | 0330 | 44.5 | * | 61.5 | 111.1 | 52.4 | 36.7 | 52.4 | 13.5 | 54.0 | 3.2 | * | 13.3 | 84.8 |
| 35 | 0350 | 44.5 | * | 61.5 | 111.1 | 52.4 | 36.7 | 52.4 | 13.5 | 54.0 | 3.2 | * | 13.3 | 84.8 |
| 38 | 0380 | 49.2 | 51.0 | 68.1 | 123.8 | 54.8 | 37.8 | 54.0 | 15.1 | 55.5 | 4.0 | 0.8 | 13.3 | 91.4 |
| 40 | 0400 | 52.4 | 54.2 | 71.4 | 127.0 | 54.8 | 37.8 | 54.0 | 15.1 | 55.5 | 4.0 | 0.8 | 14.3 | 95.7 |
| 43 | 0430 | 55.1 | 56.9 | 74.1 | 133.4 | 54.8 | 37.8 | 54.0 | 15.1 | 55.5 | 4.0 | 0.8 | 14.3 | 98.4 |
| 45 | 0450 | 55.1 | 56.9 | 74.1 | 133.4 | 54.8 | 37.8 | 54.0 | 15.1 | 55.5 | 4.0 | 0.8 | 14.3 | 98.4 |
| 48 | 0480 | 58.7 | 60.5 | 74.1 | 133.4 | 54.8 | 37.8 | 54.0 | 15.1 | 55.5 | 4.0 | 0.8 | 14.3 | 98.4 |
| 50 | 0500 | 61.9 | 63.7 | 76.6 | 139.7 | 60.3 | 40.7 | 58.7 | 27.0 | 60.3 | 4.7 | 1.6 | 14.3 | 101.6 |
| 53 | 0530 | 65.1 | 66.9 | 85.3 | 148.8 | 60.3 | 40.7 | 58.7 | 15.1 | 60.3 | 4.7 | 1.6 | 17.4 | 113.5 |
| 55 | 0550 | 66.7 | 75.0 | 85.3 | 148.8 | 60.3 | 40.7 | 58.7 | 15.1 | 60.3 | 4.7 | 1.6 | 17.4 | 113.5 |
| 58 | 0580 | 68.2 | 70.0 | 88.5 | 165.1 | 60.3 | 40.7 | 58.7 | 15.1 | 60.3 | 4.7 | 1.6 | 17.4 | 116.0 |
| 60 | 0600 | 71.4 | 73.2 | 91.7 | 165.1 | 63.1 | 43.6 | 62.6 | 15.9 | 64.2 | 3.6 | 1.6 | 17.4 | 119.9 |
| 63 | 0630 | 77.8 | * | 98.8 | 171.5 | 63.1 | 43.6 | 65.1 | 15.9 | 66.7 | 3.2 | 0.5 | 17.4 | 127.0 |
| 65 | 0650 | 77.8 | * | 98.8 | 171.5 | 63.1 | 43.6 | 65.1 | 15.9 | 66.7 | 3.2 | * | 17.4 | 127.0 |
| 68 | 0680 | 84.1 | * | 103.2 | 171.5 | 63.5 | 41.3 | 63.5 | 15.9 | 65.1 | 3.2 | * | 17.4 | 131.3 |
| 70 | 0700 | 84.1 | * | 103.2 | 171.5 | 63.5 | 41.3 | 63.5 | 15.9 | 65.1 | 3.2 | * | 17.4 | 131.3 |
| 75 | 0750 | 92.1 | * | 113.5 | 196.9 | 63.5 | 45.4 | 65.1 | 17.4 | 66.7 | 3.2 | * | 20.6 | 145.3 |
| 80 | 0800 | 95.3 | 97.9 | 116.8 | 188.9 | 65.1 | 40.5 | 63.8 | ** | 66.9 | 4.5 | 1.3 | 20.6 | 148.4 |
| 85 | 0850 | 101.6 | 104.8 | 123.2 | 206.4 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 20.6 | 154.8 |
| 90 | 0900 | 107.1 | 110.3 | 129.5 | 212.7 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 17.4 | 158.8 |
| 95 | 0950 | 110.3 | 113.5 | 132.1 | 222.3 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 17.4 | 172.0 |
| 100 | 1000 | 116.7 | 119.8 | 139.7 | 228.6 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 20.6 | 171.7 |
| 105 | 1050 | 119.8 | 123.0 | 142.9 | 228.6 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 20.6 | 174.9 |
| 110 | 1100 | 129.4 | 132.5 | 152.4 | 241.3 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 20.6 | 184.4 |
| 115 | 1150 | 129.4 | 132.5 | 152.4 | 241.3 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 20.6 | 184.4 |
| 120 | 1200 | 135.7 | 138.9 | 160.4 | 263.5 | 65.1 | 40.5 | 65.1 | ** | 68.3 | 3.2 | * | 20.6 | 192.4 |
| 125 | 1250 | 148.4 | 151.6 | 184.4 | 304.8 | 75.0 | 44.4 | 77.3 | ** | 80.5 | 3.2 | * | 20.6 | 254.0 |
| 130 | 1300 | 154.8 | 157.9 | 190.8 | 311.2 | 75.0 | 44.4 | 77.3 | ** | 80.5 | 3.2 | * | 20.6 | 260.4 |
| 135 | 1350 | 161.1 | 164.3 | 203.2 | 322.3 | 75.0 | 44.4 | 77.3 | ** | 80.5 | 3.2 | * | 23.8 | 266.7 |
| 140 | 1400 | 161.1 | 164.3 | 203.2 | 322.3 | 75.0 | 44.4 | 77.3 | ** | 80.5 | 3.2 | * | 23.8 | 266.7 |

*Not applicable. Completely outside mounted.

**L56 not applicable. Refer to L23 for sizes over 75mm.

Type 5610L/5610Q Typical Arrangement



Type 5610L/5610Q Dimensional Data (Inches)

| Size D1 | D2 | D4 | | D26 | L12 | L23 | L39 | L56 | L90 | L91 | L92 | M | N |
|---------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| | | Min. | Max. | | | | | | | | | | |
| 1.000 | 1.564 | 1.625 | 1.889 | 4.000 | 2.575 | 1.353 | 1.954 | 0.531 | 2.000 | 0.746 | 0.621 | 0.525 | 2.805 |
| 1.125 | 1.689 | 1.750 | 2.015 | 4.125 | 2.651 | 1.446 | 2.062 | 0.531 | 2.125 | 0.714 | 0.589 | 0.525 | 2.933 |
| 1.250 | 1.812 | 1.875 | 2.294 | 4.250 | 2.728 | 1.446 | 2.062 | 0.531 | 2.125 | 0.791 | 0.666 | 0.525 | 3.213 |
| 1.375 | 1.939 | 2.000 | 2.421 | 4.375 | 2.728 | 1.446 | 2.062 | 0.531 | 2.125 | 0.791 | 0.666 | 0.525 | 3.338 |
| 1.500 | 2.187 | 2.250 | 2.680 | 4.875 | 2.744 | 1.487 | 2.125 | 0.593 | 2.187 | 0.744 | 0.619 | 0.525 | 3.599 |
| 1.625 | 2.312 | 2.375 | 2.812 | 5.000 | 2.744 | 1.487 | 2.125 | 0.593 | 2.187 | 0.744 | 0.619 | 0.562 | 3.766 |
| 1.750 | 2.406 | 2.480 | 2.918 | 5.250 | 2.744 | 1.487 | 2.125 | 0.593 | 2.187 | 0.744 | 0.619 | 0.562 | 3.875 |
| 1.875 | 2.549 | 2.625 | 2.918 | 5.250 | 2.744 | 1.487 | 2.125 | 0.593 | 2.187 | 0.744 | 0.619 | 0.562 | 3.875 |
| 2.000 | 2.673 | 2.750 | 3.015 | 5.500 | 2.963 | 1.601 | 2.312 | 1.032 | 2.375 | 0.775 | 0.650 | 0.562 | 4.000 |
| 2.125 | 2.798 | 2.875 | 3.360 | 5.859 | 2.963 | 1.601 | 2.313 | 0.593 | 2.375 | 0.775 | 0.650 | 0.687 | 4.469 |
| 2.250 | 2.923 | 3.000 | 3.485 | 6.500 | 2.963 | 1.601 | 2.313 | 0.593 | 2.375 | 0.775 | 0.650 | 0.687 | 4.566 |
| 2.375 | 3.048 | 3.125 | 3.610 | 6.500 | 3.063 | 1.717 | 2.466 | 0.625 | 2.528 | 0.722 | 0.597 | 0.687 | 4.719 |
| 2.500 | 3.301 | 3.375 | 3.891 | 6.750 | 2.980 | 1.717 | 2.563 | 0.625 | 2.625 | 0.542 | 0.417 | 0.687 | 5.000 |
| 2.625 | 3.551 | 3.625 | 4.062 | 6.750 | 3.088 | 1.625 | 2.500 | 0.625 | 2.562 | 0.713 | 0.588 | 0.687 | 5.170 |
| 2.750 | 3.551 | 3.625 | 4.062 | 6.750 | 3.088 | 1.625 | 2.500 | 0.625 | 2.562 | 0.713 | 0.588 | 0.687 | 5.170 |
| 2.875 | 3.614 | 3.687 | 4.186 | 7.000 | 3.088 | 1.725 | 2.500 | 0.625 | 2.562 | 0.713 | 0.588 | 0.687 | 5.312 |
| 3.000 | 3.864 | 3.934 | 4.469 | 7.750 | 3.088 | 1.787 | 2.562 | 0.685 | 2.625 | 0.651 | 0.526 | 0.812 | 5.720 |
| 3.125 | 4.022 | 4.125 | 4.600 | 7.875 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 5.845 |
| 3.250 | 4.022 | 4.125 | 4.600 | 7.437 | 3.093 | 1.593 | 2.510 | * | 2.635 | 0.708 | 0.583 | 0.812 | 5.845 |
| 3.375 | 4.246 | 4.375 | 4.850 | 8.125 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 6.095 |
| 3.500 | 4.371 | 4.500 | 4.975 | 8.250 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 6.220 |
| 3.625 | 4.500 | 4.625 | 5.100 | 8.375 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.687 | 6.250 |
| 3.750 | 4.625 | 4.724 | 5.199 | 8.750 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.687 | 6.770 |
| 3.875 | 4.750 | 4.875 | 5.375 | 8.750 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 6.636 |
| 4.000 | 4.875 | 5.000 | 5.500 | 9.000 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 6.761 |
| 4.125 | 5.000 | 5.125 | 5.625 | 9.000 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 6.886 |
| 4.250 | 5.125 | 5.250 | 5.750 | 9.250 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 7.011 |
| 4.500 | 5.375 | 5.500 | 6.000 | 9.500 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 7.261 |
| 4.750 | 5.625 | 5.750 | 6.313 | 10.375 | 3.156 | 1.593 | 2.562 | * | 2.687 | 0.719 | 0.594 | 0.812 | 7.574 |
| 5.000 | 6.125 | 6.250 | 7.260 | 12.000 | 3.609 | 1.749 | 3.043 | * | 3.168 | 0.691 | 0.566 | 0.812 | 10.000 |
| 5.250 | 6.375 | 6.500 | 7.510 | 12.250 | 3.609 | 1.749 | 3.043 | * | 3.168 | 0.691 | 0.566 | 0.812 | 10.250 |
| 5.500 | 6.625 | 6.750 | 8.000 | 12.687 | 3.609 | 1.749 | 3.043 | * | 3.168 | 0.691 | 0.566 | 0.937 | 10.500 |

*L56 not applicable. Refer to L23 for sizes over 3".

TYPE 5610/5610L/5610Q

SINGLE O-RING SEALS

Technical Specification

Type 5610L/5610Q Large Bore Dimensional Data (Inches)

| Size D1 | D2 | D4 | | D26 | L12 | L23 | L39 | L56 | L90 | L91 | L92 | M | N | Min. Turn Dia. |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
| | | Min. | Max. | | | | | | | | | | | |
| 1.375 | 1.939 | 2.875 | 3.023 | 5.375 | 2.728 | 1.446 | 2.062 | 0.625 | 2.125 | 0.791 | 0.666 | 0.562 | 4.062 | 3.268 |
| 1.750 | 2.406 | 3.500 | 3.925 | 6.500 | 2.744 | 1.487 | 2.125 | 0.656 | 2.187 | 0.744 | 0.619 | 0.687 | 5.093 | 3.885 |
| 1.875 | 2.549 | 3.625 | 3.734 | 6.500 | 2.744 | 1.316 | 1.954 | 0.485 | 2.017 | 0.915 | 0.790 | 0.687 | 5.093 | ** |
| 2.125 | 2.798 | 3.875 | 4.250 | 7.156 | 2.963 | 1.570 | 2.282 | 0.749 | 2.407 | 0.806 | 0.681 | 0.687 | 5.687 | 4.264 |
| 2.500 | 3.301 | 4.750 | 4.875 | 8.000 | 2.980 | 1.697 | 2.407 | 0.656 | 2.532 | 0.698 | 0.573 | 0.687 | 6.062 | 5.139 |
| 2.625 | 3.551 | 4.625 | 4.740 | 8.000 | 3.088 | 1.617 | 2.329 | 0.578 | 2.454 | 0.884 | 0.759 | 0.687 | 6.062 | *** |
| 2.750 | 3.551 | 4.250 | 4.875 | 8.000 | 3.088 | 1.697 | 2.407 | 0.656 | 2.532 | 0.806 | 0.681 | 0.687 | 6.062 | 5.139 |

**Seal cartridge is OD registered on the turn diam. of 4.125".

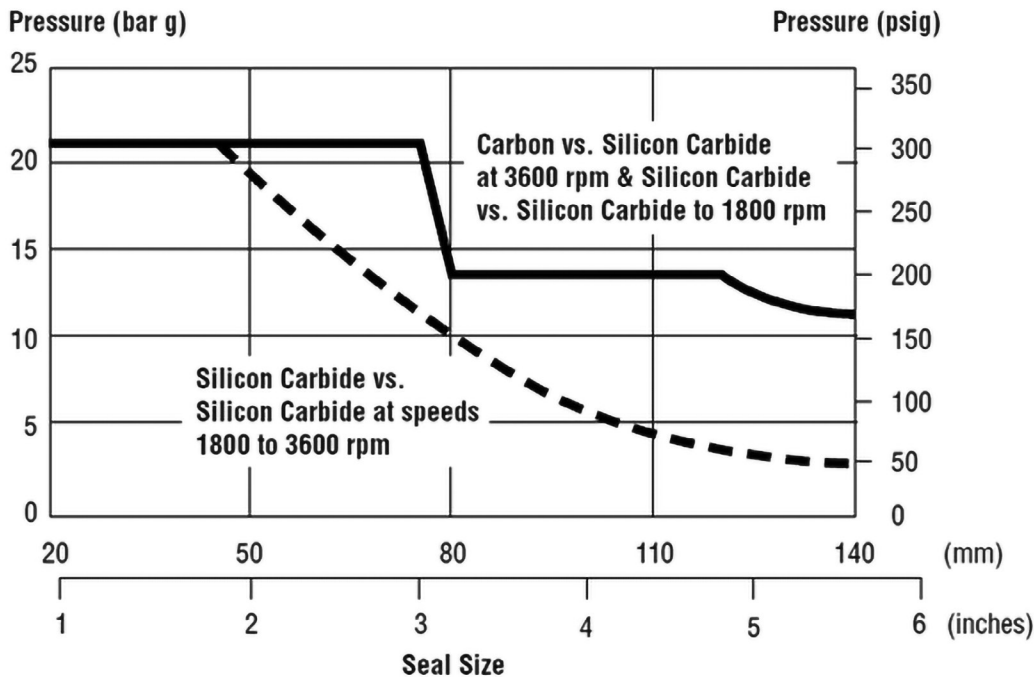
***Seal cartridge is OD registered on the turn diam. of 5.125".

Type 5610L/5610Q Dimensional Data (mm)

| Size D1 | Size Code | D2 | D4 | | D26 | L12 | L23 | L39 | L56 | L90 | L91 | L92 | M | N |
|---------|-----------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|
| | | | Min. | Max. | | | | | | | | | | |
| 24 | 0240 | 39.7 | 41.3 | 48 | 101.6 | 65.4 | 34.4 | 49.6 | 13.5 | 50.8 | 18.9 | 15.8 | 13.3 | 71.2 |
| 25 | 0250 | 39.7 | 41.3 | 48 | 101.6 | 65.4 | 34.4 | 49.6 | 13.5 | 50.8 | 18.9 | 15.8 | 13.3 | 71.2 |
| 28 | 0280 | 42.9 | 44.5 | 51.2 | 104.8 | 67.3 | 36.7 | 52.4 | 13.5 | 54 | 18.1 | 15 | 13.3 | 74.5 |
| 30 | 0300 | 44.5 | 46.1 | 56.5 | 108 | 65.1 | 36.7 | 52.4 | 13.5 | 54 | 15.9 | 12.7 | 13.3 | 79.9 |
| 32 | 0320 | 46 | 47.6 | 58.3 | 108 | 69.3 | 36.7 | 52.4 | 13.5 | 54 | 20.1 | 16.9 | 13.3 | 81.6 |
| 33 | 0330 | 49.3 | 50.8 | 61.5 | 111.1 | 69.3 | 36.7 | 52.4 | 13.5 | 54 | 20.1 | 16.9 | 13.3 | 84.8 |
| 35 | 0350 | 49.3 | 50.8 | 61.5 | 111.1 | 69.3 | 36.7 | 52.4 | 13.5 | 54 | 20.1 | 16.9 | 13.3 | 84.8 |
| 38 | 0380 | 55.5 | 57.2 | 68.1 | 123.8 | 69.7 | 37.8 | 54 | 15.1 | 55.5 | 18.9 | 15.7 | 13.3 | 91.4 |
| 40 | 0400 | 58.7 | 60.3 | 71.4 | 127 | 69.7 | 37.8 | 54 | 15.1 | 55.5 | 18.9 | 15.7 | 14.3 | 95.7 |
| 43 | 0430 | 61.1 | 63 | 74.1 | 133.4 | 69.7 | 37.8 | 54 | 15.1 | 55.5 | 18.9 | 15.7 | 14.3 | 98.4 |
| 45 | 0450 | 61.1 | 63 | 74.1 | 133.4 | 69.7 | 37.8 | 54 | 15.1 | 55.5 | 18.9 | 15.7 | 14.3 | 98.4 |
| 48 | 0480 | 64.7 | 66.7 | 74.1 | 133.4 | 69.7 | 37.8 | 54 | 15.1 | 55.5 | 18.9 | 15.7 | 14.3 | 98.4 |
| 50 | 0500 | 67.9 | 70 | 76.6 | 139.7 | 75.3 | 40.7 | 58.7 | 27 | 60.3 | 19.7 | 16.5 | 14.3 | 101.6 |
| 53 | 0530 | 71.1 | 73 | 85.3 | 148.8 | 75.3 | 40.7 | 58.7 | 15.1 | 60.3 | 19.7 | 16.5 | 17.4 | 113.5 |
| 55 | 0550 | 72.9 | 75 | 85.3 | 148.8 | 75.3 | 40.7 | 58.7 | 15.1 | 60.3 | 19.7 | 16.5 | 17.4 | 113.5 |
| 58 | 0580 | 74.2 | 76.2 | 88.5 | 165.1 | 75.3 | 40.7 | 58.7 | 15.1 | 60.3 | 19.7 | 16.5 | 17.4 | 116 |
| 60 | 0600 | 77.4 | 79.4 | 91.7 | 165.1 | 77.8 | 43.6 | 62.6 | 15.9 | 64.2 | 18.3 | 15.2 | 17.4 | 119.9 |
| 63 | 0630 | 83.8 | 85.7 | 98.8 | 171.5 | 75.7 | 43.6 | 65.1 | 15.9 | 66.7 | 13.8 | 10.6 | 17.4 | 127 |
| 65 | 0650 | 83.8 | 85.7 | 98.8 | 171.5 | 75.7 | 43.6 | 65.1 | 15.9 | 66.7 | 13.8 | 10.6 | 17.4 | 127 |
| 68 | 0680 | 90.2 | 92.1 | 103.2 | 171.5 | 78.4 | 41.3 | 63.5 | 15.9 | 65.1 | 18.1 | 14.9 | 17.4 | 131.3 |
| 70 | 0700 | 90.2 | 92.1 | 103.2 | 171.5 | 78.4 | 41.3 | 63.5 | 15.9 | 65.1 | 18.1 | 14.9 | 17.4 | 131.3 |
| 75 | 0750 | 98.1 | 99.9 | 113.5 | 196.9 | 78.4 | 45.4 | 65.1 | 17.4 | 66.7 | 16.5 | 13.4 | 20.6 | 145.3 |
| 80 | 0800 | 102.2 | 104.8 | 116.8 | 189 | 80.2 | 40.5 | 63.8 | * | 66.9 | 18 | 14.8 | 20.6 | 148.5 |
| 85 | 0850 | 107.9 | 111.1 | 123.2 | 206.4 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 20.6 | 154.8 |
| 90 | 0900 | 114.3 | 117.5 | 129.5 | 212.7 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 17.4 | 158.8 |
| 95 | 0950 | 117.5 | 120 | 132.1 | 222.3 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 17.4 | 172 |
| 100 | 1000 | 123.8 | 127 | 139.7 | 228.6 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 20.6 | 171.7 |
| 105 | 1050 | 127 | 130.2 | 142.9 | 228.6 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 20.6 | 174.9 |
| 110 | 1100 | 136.5 | 139.7 | 152.4 | 241.3 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 20.6 | 184.4 |
| 115 | 1150 | 136.5 | 139.7 | 152.4 | 241.3 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 20.6 | 184.4 |
| 120 | 1200 | 142.9 | 146.1 | 160.4 | 263.5 | 80.2 | 40.5 | 65.1 | * | 68.3 | 18.3 | 15.1 | 20.6 | 192.4 |
| 125 | 1250 | 155.6 | 158.8 | 184.4 | 304.8 | 91.7 | 91.4 | 77.3 | * | 80.5 | 17.6 | 14.4 | 20.6 | 254 |
| 130 | 1300 | 161.9 | 165.1 | 190.8 | 311.2 | 91.7 | 91.4 | 77.3 | * | 80.5 | 17.6 | 14.4 | 20.6 | 260.4 |
| 135 | 1350 | 168.3 | 171.5 | 203.2 | 322.3 | 91.7 | 91.4 | 77.3 | * | 80.5 | 17.6 | 14.4 | 23.8 | 266.7 |
| 140 | 1400 | 168.3 | 171.5 | 203.2 | 322.3 | 91.7 | 91.4 | 77.3 | * | 80.5 | 17.6 | 14.4 | 23.8 | 266.7 |

*L56 not applicable. Refer to L23 for sizes over 75mm.

Pressure Rating Limits



The basic pressure rating is for a standard seal, as shown in the typical arrangement, when installed according to the criteria given in this data sheet and generally accepted industrial practices.

The basic pressure rating assumes stable operation at the speeds indicated on the above chart in a clean, cool, lubricating, non-volatile liquid with an adequate flush rate. When used with the multiplier factors, the basic pressure rating can be adjusted to provide a conservative estimate of the dynamic pressure rating. For process services outside this range or a more accurate assessment of the dynamic pressure rating, contact John Crane for more information.

Multiplier Factors

| | Selection Consideration | Multiplier Factor |
|---|---|-------------------|
| Sealed fluid lubricity (applies to SiC vs SiC face combination only) | Petrol/Gasoline, kerosene or better | x 1.00 |
| | Water and aqueous solutions (<80°C/176°F) | x 0.75 |
| | Flashing Hydrocarbons* | x 0.60 |
| Sealed fluid temperature (applies to Carbon vs SiC face) | Up to 80°C/175°F | x 1.00 |
| | 80°C to 120°C/ 175°F to 250°F | x 0.90 |
| | 120°C to 180°C/ 250°F to 355°F | x 0.80 |
| | Above 180°C/350°F | x 0.65 |

Example of determining pressure rating limits:

Seal: 50.8 mm/2.0" diameter Type 5610

Product: Aqueous solution

Face materials: Silicon carbide vs. silicon carbide

Operating temperature: 80°C/175°F

Operating speed: 2950 rpm

Using the pressure rating limits graph, the maximum pressure would be 18.5 barg/268 psig.

From the Multiplier Factors table on the left, apply the multipliers for the specific service requirements to determine the maximum operating pressure for the application:

$$18.5 \text{ barg}/268 \text{ psig} \times 0.75 \times 1 = 13.9 \text{ barg}/201 \text{ psig}$$

The maximum operating pressure for this 50.8mm/2" Type 5610 is 13.9 barg/201 psig.

* The ratio of sealed pressure to vapor pressure must be greater than 1.5, otherwise consult John Crane. If the specific gravity is less than 0.60, consult John Crane.

| Materials of Construction | | |
|--|---------------------------------------|---|
| SEAL COMPONENTS | MATERIALS | |
| Description | Standard | Options |
| Face/Primary ring | Resin-impregnated carbon | John Crane Diamond® Sintered silicon carbide Nickel binder tungsten carbide |
| Seat/Mating ring | Sintered silicon carbide | John Crane Diamond® Nickel binder tungsten carbide |
| Sleeve Gland plate Collar Retainer Drive ring Anti-extrusion ring | 316 stainless steel | Alloy 20CB3 SS (UNS N8020) Alloy C-276 (UNS N10276) Titanium |
| O-ring | Flouroelastomer Ethylene Propylene | Perflouroelastomer Buna-N Neoprene |
| Gland gasket | Glass-filled PTFE | — |
| Spring | Alloy C-276 (UNS N10276) | — |
| Quench busing (5610Q) | Resin-impregnated carbon | — |

Application Criteria

The Type 5610 cartridge seals may be customized for specific installations after review and evaluation by John Crane. The following data is needed to evaluate the proposed service:

- Make and model of equipment
- Shaft or sleeve OD
- Seal cavity dimensions
- Speed
- Quench fluid (if applicable)
- Process fluid
 - Specific gravity
 - Box pressure
 - Vapor pressure
 - Temperature
 - Viscosity

