5.31.4 O-Ring Glands for Rotary Seals

Design Chart 5-4 provides the basis for calculating gland dimensions. For standard O-ring sizes, these dimensions have been calculated and are listed in Design Table 5-4. The procedures for the use of Design Table 5-4 are outlined in Design Guide 5-4 below.

After selecting gland dimensions, read horizontally to determine proper O-ring size number. Specify compound. Refer to the discussion on rotary seals earlier in this chapter for the selection of the proper compound The effective part number for an O-ring consists of both a size number and a compound number.



Note: Due to effect of centrifugal force, do not locate groove in shaft. Refer to Design Chart 5-4 (below) and Design Table 5-4 for dimensions.

(Below 200 FPM, Use Design Chart 5-2)										
O-Ring Size Parker No. 2-	W Cross S Nominal	/ Section Actual	Maximum Speed FPM (a)	Squeeze %	L Gland Depth	G Groove Width	E (c) Diametral Clearance	Eccentricity Max (b)	M Bearing Length Min. (c)	R Groove Radius
004 through 045	1/16	0.070 ±.003	200 to 1500	0-11	0.065 to 0.067	0.075 to 0.079	0.012 to 0.016	0.002	0.700	0.005 to 0.015
102 through 163	3/32	0.103 ±.003	200 to 600	1-8 1/2	0.097 to 0.099	0.108 to 0.112	0.012 to 0.016	0.002	1.030	0.005 to 0.015
201 through 258	1/8	0.139 ±.004	200 to 400	0-7	0.133 to 0.135	0.144 to 0.148	0.016 to 0.020	0.003	1.390	0.010 to 0.025

Rotary O-Ring Seal Glands, 55.2 Bar (800 psi) Max. (c)

(a) Feet per minute = 0.26 X Shaft Diameter (inches) X rpm.

(b) Total indicator reading between groove OD, shaft, and adjacent bearing surface.

(c) If clearance (extrusion gap) must be reduced for higher pressures, bearing length M must be no less than the minimum figures given. Clearances given are based on the use of 80 shore durometer minimum O-ring for 55.2 Bar (800 psi) max. See Figure 3-2 for recommended clearances when pressures exceed 55.2 Bar (800 psi).

Design Chart 5-4: Design Chart for Rotary O-Ring Seal Glands