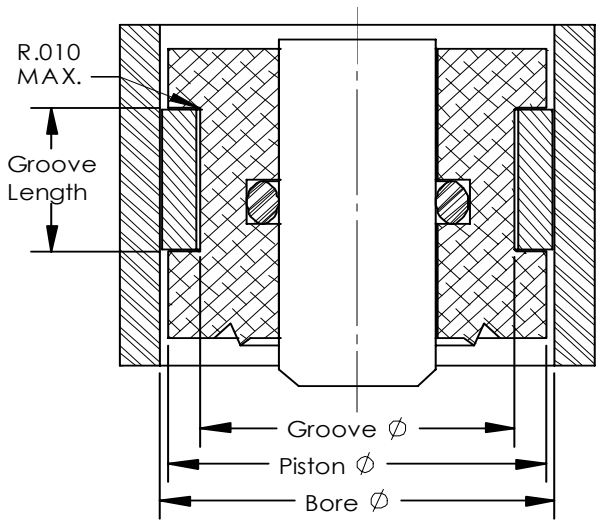
PISTON WEAR RING

HPS inc

GLAND CALCULATION SHEET

Follow these steps to arrive at
Finished Piston
Gland Dimensions

Standard Wear Ring Thickness(es)
W6 =.057/.060"
WT=.075/.080
WH=.122/.125
WR=.120/.125
WB=.184/.187



STEPS

All Dimensions are in inches.

1. List All "Knowns"

List this data before you begin any calculations. Select A from the HPS Hydra-Lon Wear Ring catalog, B from the above table, and C, D and E from your materials and machining capabilities.

A ⇒ Ring Part No.: _____

B ⇒ Ring Thickness: Min. _____ Max. _____

C ⇒ Machining Tolerance: _____

D ⇒ Bore Size: Min. _____ Max. _____

E ⇒ Min. Metal to Metal Clearance: (Desired) _____

Max. Metal to Metal Clearance is: _____

Note: When selecting this clearance consider the Piston Seal.
Large clearances require anti-extrusion devices to protect the seal.

2. Calculate Groove Diameter

Subtract .001" from the minimum bore, then subtract twice the maximum ring thickness, and subtract the machining tolerance.

⇒ **-** .001 **=**

⇒ **-** **=**

F ⇒ **/** **=**

3. Calculate Piston O.D.

Add twice the minimum ring thickness to minimum Groove Diameter from Step 2. Subtract twice the minimum desired metal to metal clearance, and subtract the machining tolerance.

⇒ + **=**

⇒ - **=**

G ⇒ **/** **= Piston O.D.**

4. Determine Groove Length

Add a +.010/.020" tolerance to the maximum ring width (axial length).

Max. Ring Width

H ⇒ **/** **= Groove Length (N/A)**

a) Note: Above applies for A.L. up 1.499"
b) For 1.500 to 3.999" A.L. add +.020/.030"
c) For 4.000 to 6.999" A.L. add +.030/.040"
d) For A.L. above 7" consult Tech Center

Note: Properly applied Hydra-Lon™ rings always provide clearance between the piston and bore. Check and be certain that the piston seal selected will not extruded into this clearance.