Dynamic Diffusion Reactor - designed by Richard K. Herz, October 1991

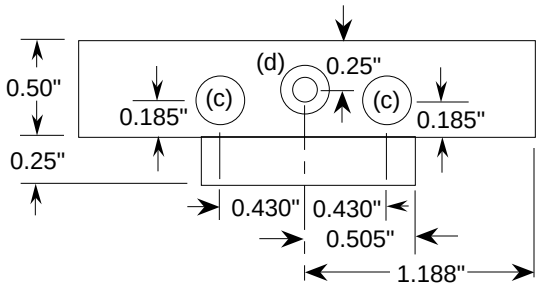
Materials: type 316 stainless-steel, except where noted otherwise

Drawing Scale: 1" = 1" on all drawings

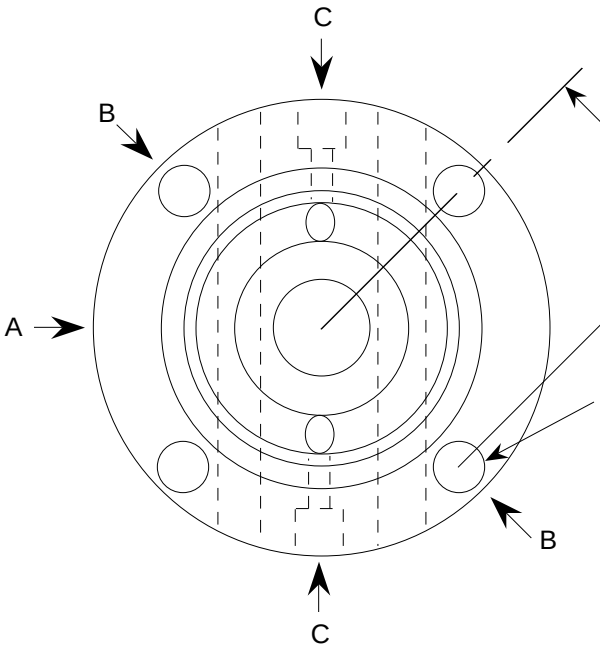
PART A, INLET FLANGE

(c) 0.250" +0.000" -0.001" heating cartridge hole, runs all the way through flange

(d) weld socket for 1/4" o.d. tubing, centered in flange, approx. 0.25" deep. See section C-C below.



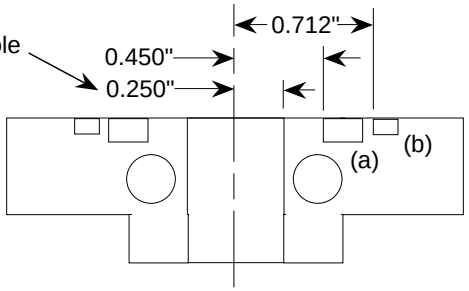
SIDE VIEWS
(both sides, perpendicular to A-A)



TOP VIEW

4 ea., F drill bit holes (0.257" diam.) with centers evenly spaced on 1.018" radius circle (note relation to heating cartridge holes - (c) in side view, top of page). These 4 holes are bolt holes to clamp PART A to PART B together (see final assembly drwg), with PART A, section C-C aligned with PART B, section A-A.

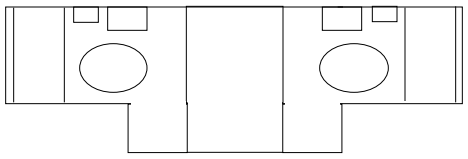
Part C should fit tightly in this hole



A-A

(a) 0.200" wide x 0.120" deep groove.

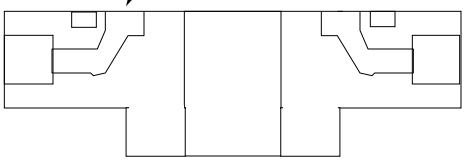
(b) O-ring groove for Parker 2-127, face seal gland, external pressure (internal vacuum), see details attached.



B-B

#31 drill (0.120") at 30° from vertical to intersect 1/8" hole from circumference - must NOT intersect o-ring groove

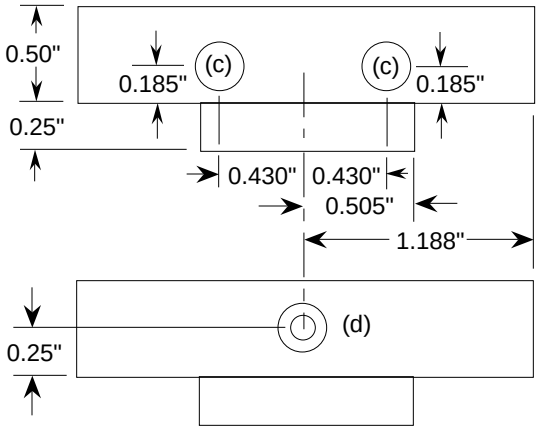
weld socket for 1/4" o.d. tubing, approx. 0.25" deep; 1/8" drill in center approx. 0.565" deep from outer circumference.



C-C

PART B, OUTLET FLANGE

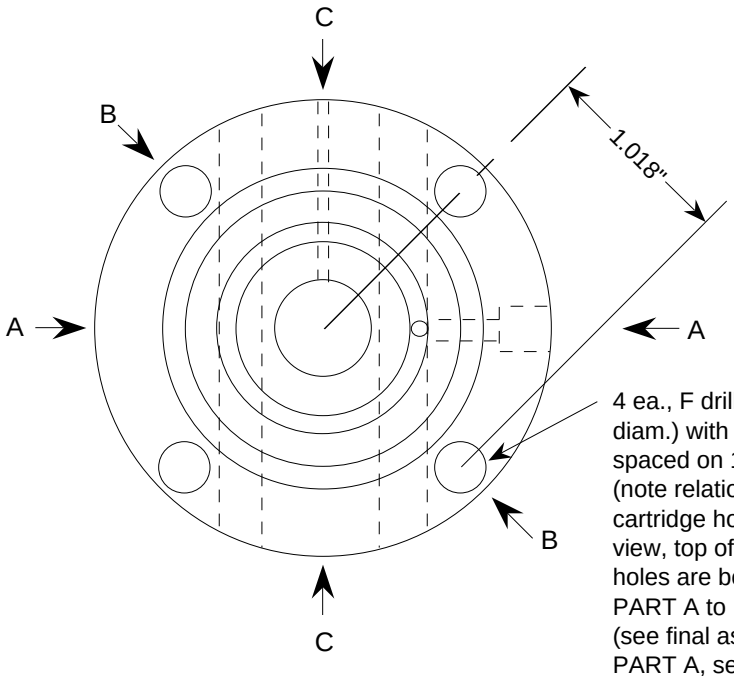
(c) 0.250" +0.000" -0.001" heating cartridge hole, runs all the way through flange



SIDE VIEWS
(both sides, perpendicular to A-A)

(d) weld socket for 0.25" tube, centered in flange, approx. 0.25" deep, socket on one side only. See section A-A below.

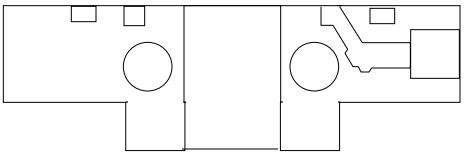
SIDE VIEW
(perpendicular to C-C, socket on one side only



TOP VIEW

4 ea., F drill bit holes (0.257" diam.) with centers evenly spaced on 1.018" radius circle (note relation to heating cartridge holes - (c) in side view, top of page). These 4 holes are bolt holes to clamp PART A to PART B together (see final assembly drwg), with PART A, section C-C aligned with PART B, section A-A.

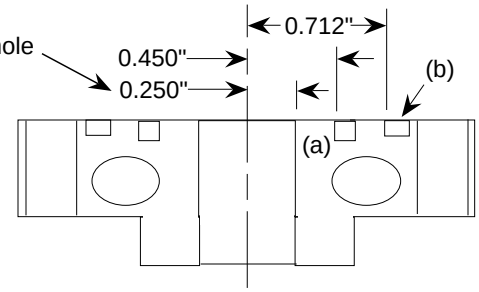
5/64" drill at 30° from vertical to intersect 1/8" hole from circumference - must NOT intersect o-ring groove or heating cartridge hole



A-A

weld socket for 1/4" o.d. tubing, approx. 0.25" deep, one side only; 1/8" drill in center to penetrate approx. 0.565" but no more than 0.570" from outer circumference - must NOT intersect heating cartridge hole.

Part C should fit tightly in this hole

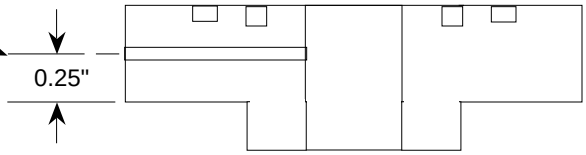


B-B

(a) 0.10" wide x 0.10" deep groove.

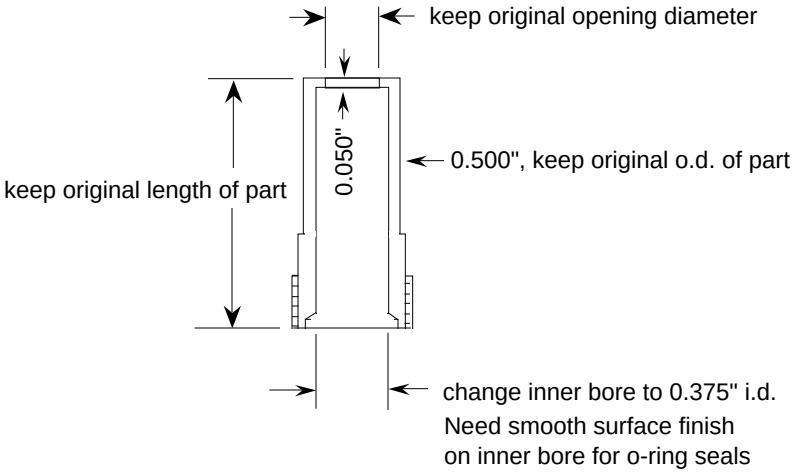
(b) O-ring groove for Parker 2-127, face seal gland, external pressure (internal vacuum), see details attached.

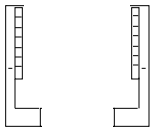
close-fit hole (#52 drill, 0.0635") for insertion of 0.062" o.d. sheathed thermocouple, centered in thickness of flange, drilled through to center hole



C-C

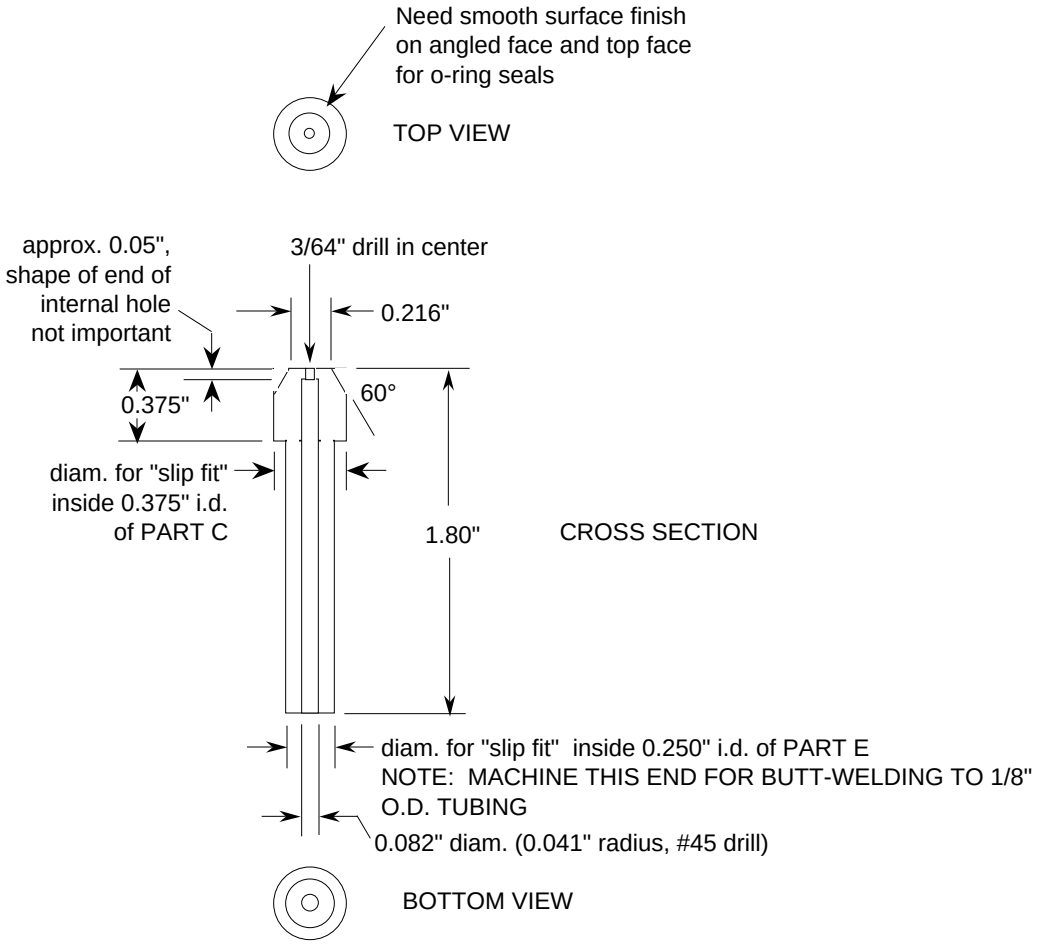
PART C, MODIFIED ULTRA-TORR ADAPTER
(modify 2 Cajon Ultra-Torr adapters, to be supplied)



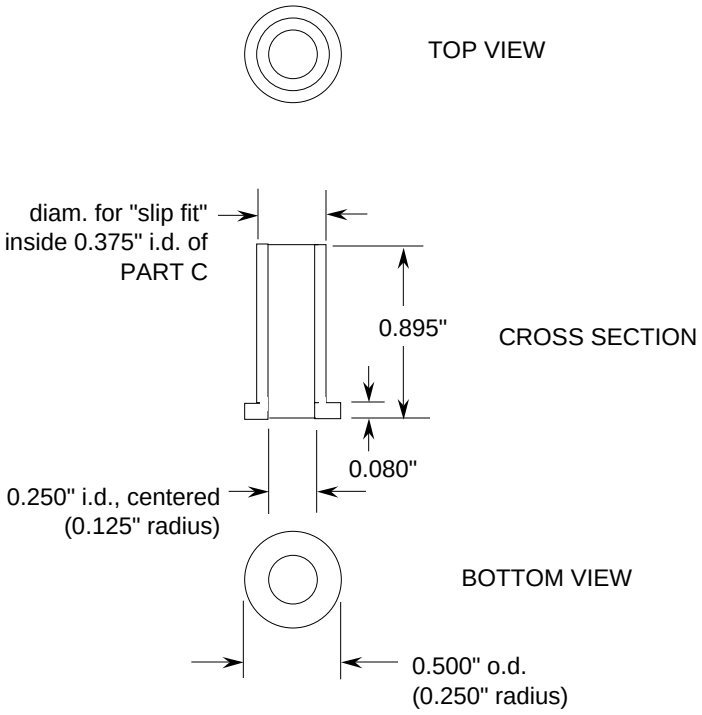


Cap, supplied,
no modification required

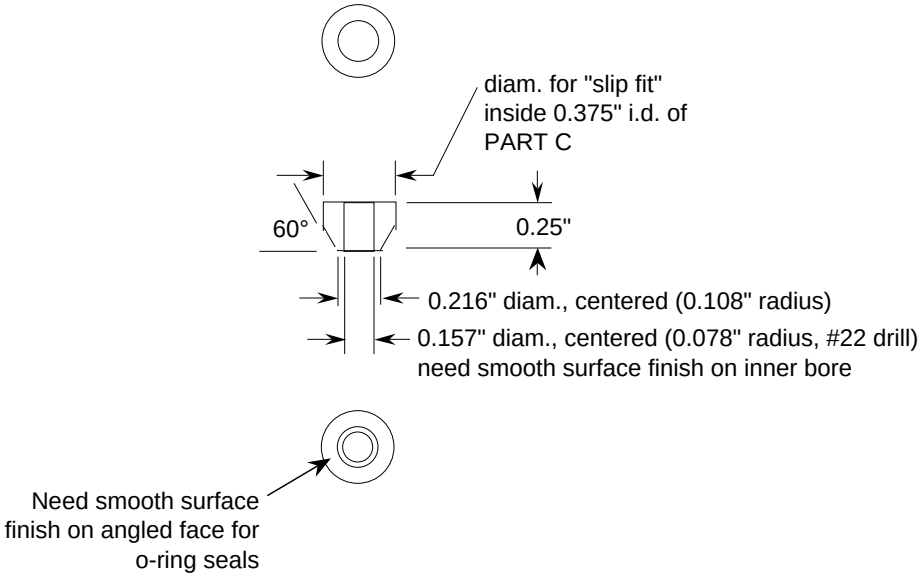
PART D, SNORKEL (quantity = 2)



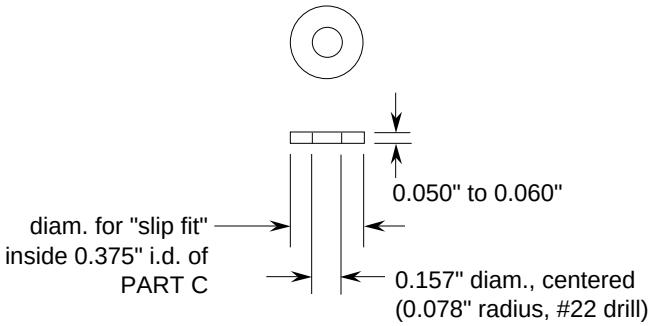
PART E, PUSHER (quantity = 2)



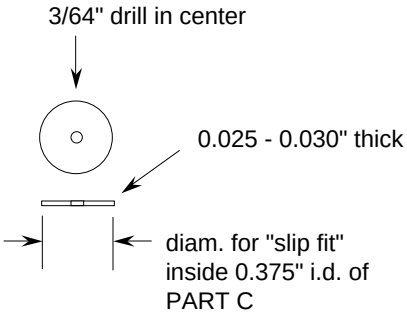
PART F, SAMPLE HOLDER (quantity = 4)



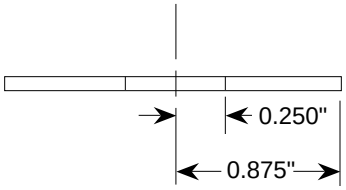
PART G, SPACER (quantity = 4)



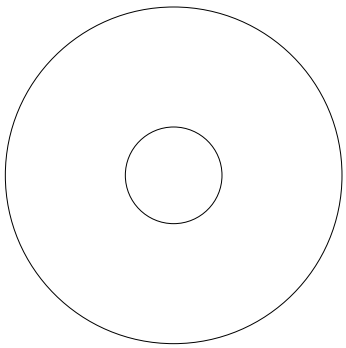
PART H, WASHER (quantity = 4)



PART I, SEPARATOR
(modify copper disks supplied,
quantity = 2)

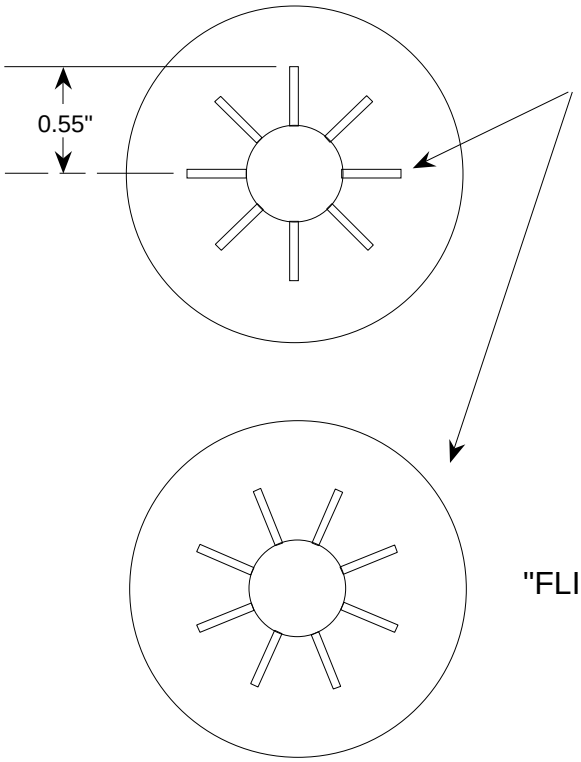


CROSS SECTION



TOP & BOTTOM VIEW

PART J, GROOVED SEPARATOR
(modify 1 of PART I)

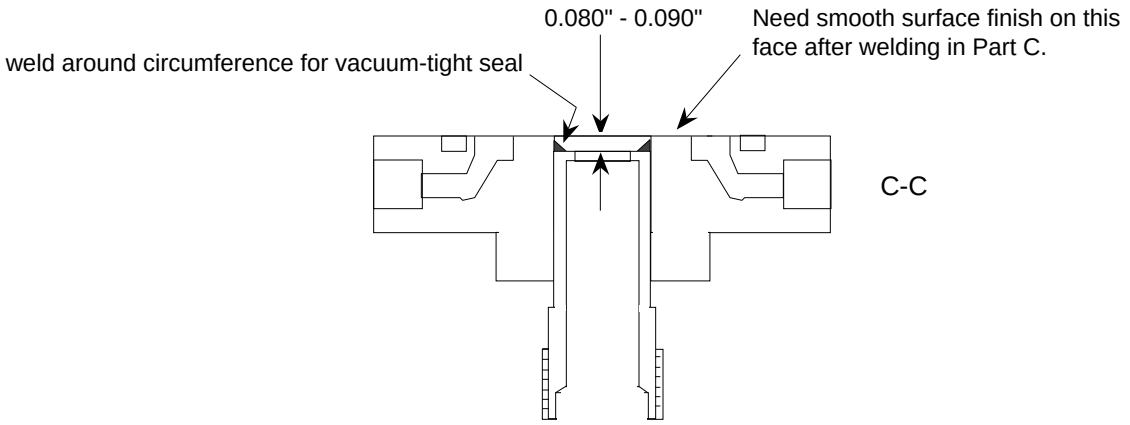


8 grooves on each side of disk, evenly spaced radially, 0.014" deep, 0.080" wide, out to 1.10" o.d. (0.55" radius). Offset the sets of grooves on the two sides of disk by angle of 22.5° from each other. Grooves are gas passages. Shape of end of groove can be square or round. Surfaces of disk must be flat and smooth after grooving.

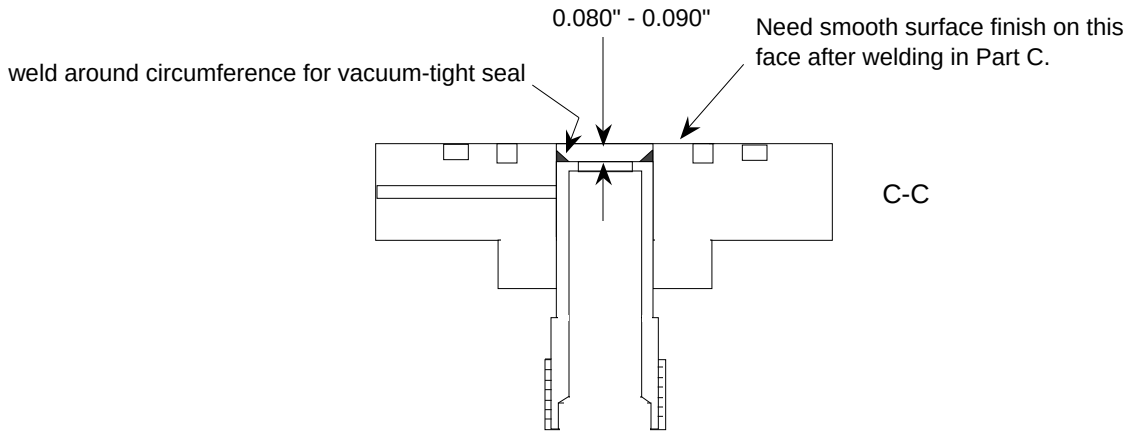
"FLIP SIDE"

(some parts not to exact scale on this assembly drwg.)

Assembly of PART A and PART C



Assembly of PART B and PART C



FINAL ASSEMBLY DIAGRAM
(some parts not to exact scale on this drwg.)