

### Oil Nozzle Pressures

NOZZLE CAPACITIES					
U.S. Gallons per Hour No. 2 Fuel Oil					
Rate GPH @ 100 psi	175 psi	180 psi	190 psi	175 psi	200 psi
0.40	0.45	0.47	0.49	0.51	0.56
0.50	0.56	0.59	0.62	0.66	0.71
0.60	0.67	0.71	0.74	0.79	0.85
0.65	0.73	0.77	0.80	0.86	0.92
0.75	0.84	0.89	0.92	0.99	1.06
0.85	0.95	1.01	1.04	1.11	1.20
0.90	1.01	1.07	1.10	1.19	1.27
1.00	1.12	1.18	1.23	1.32	1.41
1.10	1.23	1.30	1.35	1.46	1.56
1.20	1.34	1.42	1.47	1.59	1.70
1.25	1.39	1.46	1.53	1.65	1.77
1.35	1.51	1.60	1.65	1.79	1.91
1.50	1.68	1.77	1.84	1.98	2.12
1.65	1.86	1.96	2.03	2.19	2.33
1.75	1.96	2.07	2.14	2.32	2.48
2.00	2.24	2.37	2.45	2.65	2.85
2.25	2.52	2.66	2.76	2.98	3.18

**Remember Pump Pressure**

- Nozzle input is rated by gph at 100 psi
- If you change the pressure the input rating changes
- Do not exceed the appliance rating!
- Consult a pressure chart when changing pressure

*Berkett*

### Nozzle Spray Pattern



### Nozzle Selection

Always check boiler manufacturer for nozzle size and setting first based on boiler requirements and BTU needs

Rule of thumb (NOT ALWAYS) If gun has a retention head use a 60 Degree or less

### CAD Cell Diagnosis

Testing Ohms for CAD Cell

Good Dark/No Light 20K+ Ohms

CAD Cell

Light/Fire On Low Numbers  
400-800 Ohms

Bad Light/Fire is on Ohms reading in the thousands or 0

Pump Solenoid Test

Cleancut should be 400-500 ohms, Suntec 494-526 ohms and Riello 1215-1485 between terminals 1&2. Outside these parameters, you have a bad coil.

### Testing Oil Pump/Supply Line

Put on Pressure Gauge on Pump Outlet

Run pump for a few seconds then shut down.

Once shut down pressure will drop 20%, if pump does NOT hold at this pressure and continues to fall = Bad Pump

Vacuum Test- micro bubbles start @ 6" of vacuum issues at 8"-10"

Place Vacuum Gauge INLINE on inlet of pump, DONT run pump dry

Start burner and OPEN bleeder....Close bleeder @ 15" vacuum and shut off burner

Pump should hold vacuum for 5 minutes, if 15" CANNOT be achieved or CANNOT HOLD for 5 minutes, CHANGE PUMP

To test SUPPLY LINE for leaks.. Shut OFF TANK supply and install Vacuum Gauge Inline

Start Burner then Close Valve BETWEEN Pump and Vacuum Gauge @ 10-15" and shut down burner

Vacuum should hold for 10 minutes

### Combustion Testing

### Primary Controls

Intermittent- Spark is constantly ON Stack Switch (Thermo Primary) Most Common Honeywell RA117A

### Primary Controls (cont)

Interrupted- Spark shuts off after ignition of flame Power (HOT) Line 1, Neutral to Line 2, Motor & Oil Solenoid to "Motor" (Line 3), If its has Interrupted Control wire to "-ING" (Line 4), For Intermittent Control Connect to "Motor" (Line 3)

Intermittent CANNOT be used for Interrupted Controls, But you adapt a Interrupted Control for a Intermittent Control Two Wire Thermostats Connect "W" & "B"--- Three Wire RED to "R" WHITE to "W" BLACK to "B"



By Brooklynol

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