

**Carlin**<sup>®</sup>  
Combustion Technology, Inc.

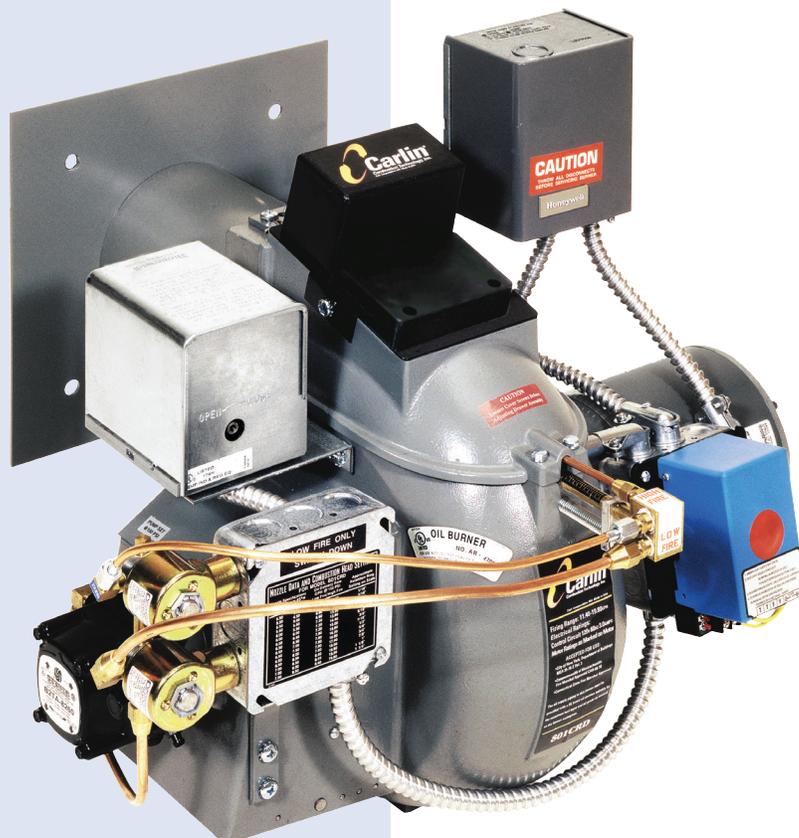
MODELS **701CRD**  
& **801CRD**

Advanced Oil Burners  
Low-High-Low Step Modulating

**6.0 to 13.2 GPH**  
& **11.4 to 19.8 GPH**  
(High-fire input capacities)

Data sheet

The **IDEAL**  
burner for even  
the toughest  
applications

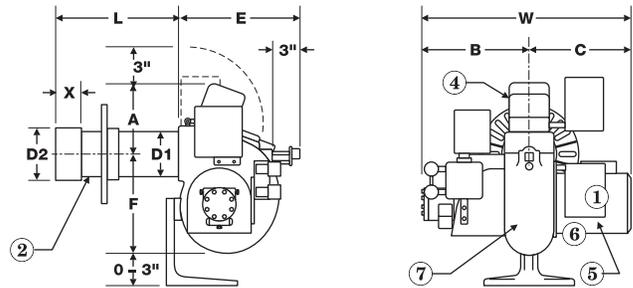
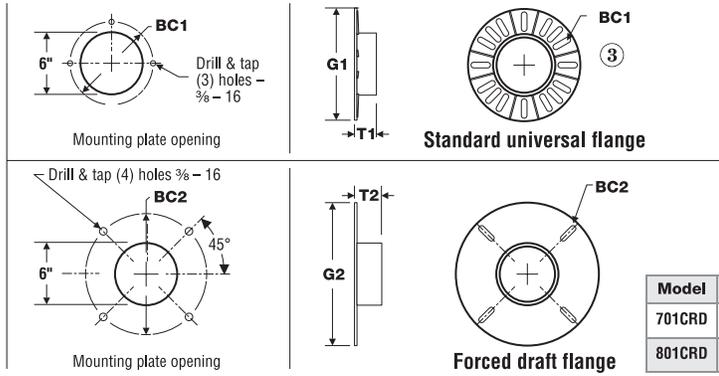


**CARLIN. THE TECHNOLOGY LEADER.**

 US LISTED

# Carlin 701CRD and 801CRD Advanced Oil Burners

ALL DIMENSIONS IN INCHES



Model	A	B	BC1	BC2	C	D1	D2	E	F	G1	G2	L	T1	T2	W	X
701CRD	7 1/2	9 1/2	6 3/4 to 7 7/8	9 to 10	10	4 1/4	5 7/8	13	9	8 3/4	11	10 11/16 to 14 11/16	1 1/8	2 1/2	19 1/2	2 1/2
801CRD	8	12	6 7/8 to 7 7/8	10	11	5 1/4	5 7/8	14 1/2	10 1/2	8 1/2	11	10 to 15	1 1/2	2 1/2	23	3

- ① Carlin 60200 microprocessor control (standard)
- ② Air tube
- ③ Universal flange (standard)
- ④ Carlin 41000 solid state ignitor
- ⑤ Junction box
- ⑥ Motor, 48-frame
- ⑦ Cast aluminum blower housing

## Features

**701CRD and 801CRD advanced oil burners feature Carlin's adjustable combustion head assembly — for unmatched fuel/air mixing, smooth light-offs and quiet running. The automatically-closed air damper and low-high-low step modulation (approximately 2:1 turndown) improve efficiency by closer matching of output to demand and reduced stand-by losses — typically savings of 15-20% in seasonal fuel usage when compared to single-stage flame retention burners.**

*Proven for years in the field and in extensive boiler and furnace testing, these burners will meet your needs for commercial oil-burning applications.*

### Easy adjustment and service . . . Unmatched performance . . .

- Simple adjustments of the air shutter and combustion head, set with Carlin's easy-access screw adjustment.
- Blower access cover allows full view of blower compartment.
- Each burner (701 or 801) uses a single set of air handling parts for all firing rates.
- Burners use standard components, including Carlin electronic ignitor and microprocessor primary control.
- Jacob's-ladder electrode tips for wide spark pattern and reliable ignition.
- Low-high-low step modulation, using low- and high-fire oil valves and nozzles, with motorized air damper. Low-fire hold switch standard. (Requires high fire control on boiler, by others.)
- Positive ignition, stable operation, and compact flame.
- Compact flame for maximum versatility.
- Insensitive to draft or moderate back-pressure variations.
- Can operate in forced draft applications (up to 0.60 inches w.c. positive overfire pressure).
- High resistance to pulsation.
- Excellent performance when tested in appliances that do not use refractory combustion chambers.
- Rugged cast aluminum housing.

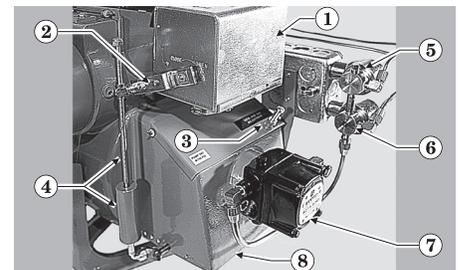
## Specifications

- **Input**  
701 ..... High fire: 6.0 to 13.2 GPH  
..... Low fire: 3.6 to 6.6 GPH  
801 ..... High fire: 11.4 to 19.8 GPH  
..... Low fire: 6.6 to 8.4 GPH  
The maximum high-fire inputs shown are for natural draft at elevations up to 2,000 feet above sea level. Reduce the rate for forced draft firing as given in the burner manual (up to 18% reduction for 701 or up to 10% for 801 at 0.50 inches w.c. overfire pressure). For altitudes higher than 2,000 feet, reduce capacity 4% per 1,000 feet above sea level.
- **Fuels**  
U. S. .... No. 1 or No. 2 Fuel oil  
Canada ..... No. 1 Stove oil or No. 2 Furnace oil
- **Oil nozzles, fuel units & oil valves**  
(1) Low fire nozzle ..... Pattern and angle vary with application  
(1) High fire nozzle ..... Pattern and angle vary with application  
Fuel unit ..... 2-STAGE "B" STYLE, 150 PSIG  
(2) Oil solenoid valves .....
- **Electrical**  
Power ..... 120 VAC/60 HZ/1-PHASE  
Limit circuit input (60200 primary) ..... 120 VAC/60 HZ  
Control circuit load (120 VAC) ..... 1.2 AMPS  
Motor, 701 ..... 1/2 HP, 3450 RPM, 48-frame, "N" flange  
..... 115 / 208-230 VAC/60 HZ/1-PH, 8.4 / 3.8-4.2 AMPS  
Motor, 801 ..... 3/4 HP, 3450 RPM, 56C-frame  
..... 115 / 208-230 VAC/60 HZ/1-PH, 9.8 / 4.8-4.9 AMPS  
..... Opt: 208-230 / 460 VAC/60 HZ/3-PH, 3.0-3.2 / 1.6 AMPS  
Oil valve power ..... 120 VAC/60 HZ  
Damper motor (with end switch) ..... Honeywell M436A
- **Ignition & primary control**  
Carlin Model 41000 solid state electronic ignitor  
Ignition voltage ..... 14,000 VOLTS  
Primary control ..... Carlin 60200
- **Agencies**  
UL Listed ..... (US & Canada)

## Special Notes

1. Available options:
  - Alternate motor voltages, as listed at left.
  - Carlin 40200, 50200 or other primary control can be supplied in place of the standard 60200 microprocessor primary control. UV sensor is available for 801. An electronic 4-second time delay relay is included when 40200 or 50200 primary is used.
  - Forced draft, adjustable flange or welded flange.
  - NEMA 1 control panel and/or special control systems (consult factory for options).
  - 2-stage "H"-style fuel unit.
2. Local approvals: City of New York MEA No. 35-76-E; State of Massachusetts Approval No. CAR-88-08 for 701CRD and No. CAR-88-10 for 801CRD.

## Air-Fuel Ratio System



- 1 Damper motor
- 2 Actuator arm
- 3 Low-fire air adjustment
- 4 Linkage and counterweight
- 5 High-fire oil valve
- 6 Low-fire oil valve
- 7 Fuel unit (150 PSIG)
- 8 Air shutter

### Operation

On call for heat, burner motor and ignitor are activated. The air shutter is in low-fire position. The low-fire oil valve opens, and oil flows through the low-fire nozzle.

If boiler high-fire controller calls for high fire, the damper motor begins to open. When the damper motor end switch closes (damper open), the high-fire oil valve is activated, and oil flows to the high-fire nozzle.

When the high-fire controller is satisfied, the damper motor closes down the air shutter and the high-fire oil valve closes. When call for heat is satisfied, the burner shuts off (closing the low-fire oil valve).

TECH SUPPORT HOTLINE 800-989-2275

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