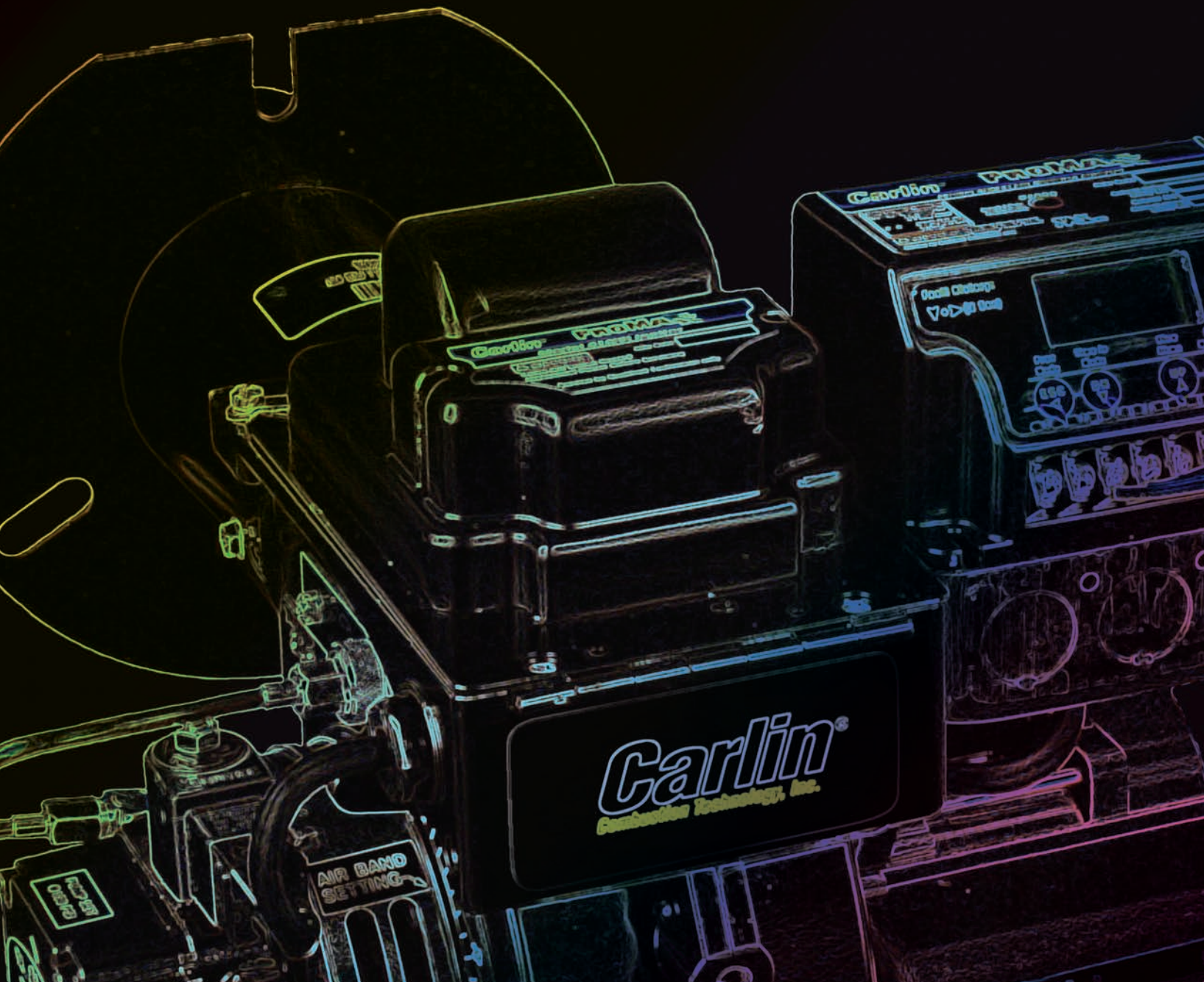


BURNERS • IGNITORS • CONTROLS

Carlin[®]

Combustion Technology, Inc.



About Carlin

Since its founding in 1949, Carlin Combustion Technology, Inc. has been a consistent leader in the heating industry. Producing oil & gas residential and commercial burners, controls, ignitors and various components, the company prides itself on high quality products with excellent customer and technical service.

Carlin was founded by Bernard C. Lindberg, who took over the assets of the U.S. Oil Burner Corporation. Mr. Lindberg was joined by John Carlburg and the name “Carlin” was born. The company’s original concern for burner quality and the genuine desire to serve its customers resonates today.

For more than 65 years, Carlin has introduced various burners, ignitors, controls and other components to meet the needs and standards of its clientele in the heating industry. The company has had several locations in Massachusetts and Connecticut and in 2014 settled in North Haven, Connecticut. This facility houses the manufacturing plant, administrative personnel and sales staff and is the venue for Carlin’s highly-informative Carlin U. training sessions.

Visit our website, www.carlincombustion.com, or call us at 203-680-9401 to learn more about this authentic Made-in-America company.

www.carlinco

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EZ-PRO LINE OF ADVANCED OIL BURNERS – CARLIN'S FLAGSHIP BURNER

OIL BURNERS



- Input
 - 0.5 to 2.6 GPH
 - 70,000 to 364,000 BTUH

Firing Rate Ranges

Model	Range GPH	Head Bar Selections (Note 1)
EZ-1	0.50 - 1.65	7 options: 0.5 / 0.6-0.65 / 0.75 / 0.85-1.00 / 1.10-1.25 / 1.35-1.50 / 1.65 GPH
EZ-2	1.50 - 2.25	4 options: 1.50 / 1.65-1.75 / 2.00 / 2.25 GPH
EZ-3	2.00 - 2.60	3 options: 2.00 / 2.25 / 2.60 GPH

Note 1: Head bars, supplied in kits with each burner, position the flame retention ring assembly correctly in the air tube for the given firing range. See burner manual for more detail.

Features

The EZ-Pro advanced oil burner combines the proven range and reliability of the EZ burner with Carlin's line of electronic controls and high efficiency components. Purchase the EZ-Pro in any of three configurations: EZ-1, EZ-2 or EZ-3. Specify tube length when ordering.

Quiet Operation

- Unique blower design nearly eliminates fan noise
- The smooth ignition and superior combustion of the EZ burner design yield virtually silent operation

Electronic Reliability

- Comes standard with time-tested solid state ignition and state-of-the-art microprocessor control technology:
 - Carlin **60200-02** microprocessor control (with 10-second pre-purge and post-purge and interrupted ignition) – Diagnostic LED lights indicate operating mode: Self-check, Flame-on, Recycle, Lockout and Latch-up
 - Carlin **41000** electronic ignitor, constant-duty rated for long life and reliability
 - Cad cell flame sensor

Unmatched Performance

- Carlin PSC high-efficiency motor
- EZ burner design yields exceptional fuel/air mixing for wide range of operation
- Optional nozzle line heater for clean burning and reliable ignition
- 5, 7 or 9-inch air tube and combustion head, with stainless steel nose cone
- Single-stage oil pump with integral oil valve and safety shut-off
- Aluminum flange and gasket (welded flange optional)

Specifications

Fuels

U. S No. 1 or No. 2 Fuel oil
 Canada No. 1 Stove oil or No. 2 Furnace oil

Electrical

Power 120 vac/60 HZ/1-phase
 Current Approximately 5.8 amps
 Limit circuit input 120 vac/60 hz
 Motor (PSC) 1/6 hp, 3450 rpm
 Oil valve power 120 vac/60 hz
 Nozzle line heater 120 vac/60 hz
 Alarm contacts (isolated) 24 vac/vdc, 2 AMPS

Ignition

Carlin Model 41000 solid state electronic ignitor
 Ignition voltage 14,000 VOLTS

Control

Carlin Model 60200 microprocessor control

- 15-sec. Trial for ignition (TFI)
- 1.3-sec. FFRT
- Pre-purge and post-purge (10 seconds)
- Serviceman reset protection (Latch-up after three consecutive lockouts)
- Interrupted duty ignition
- Recycle on flame failure

70200 Universal Oil Primary

Operating temperature limits

Maximum ambient 104 °F (40 °C)

Agencies

UL Listed (US & Canada)

99FRD, 100CRD, 102CRD ADVANCED OIL BURNERS



■ Input	
99FRD.....	0.50 to 3.00 GPH
100CRD.....	0.50 to 2.25 GPH
102CRD (2 5/8" air cone).....	2.00 to 3.50 GPH
102CRD (3" air cone).....	3.00 to 4.50 GPH

OIL BURNERS

Features

The **99FRD, 100CRD, and 102CRD** advanced oil burners feature Carlin's adjustable head assembly for unmatched fuel/air mixing, smooth light-offs and quiet operation.

Proven for years in the field and in extensive boiler and furnace testing, these burners cover the range from residential to light commercial to meet your needs for oil-burning applications.

Easy Adjustment and Service

- With Carlin's unique Allen key setting method, the only adjustments are the air band and the retention ring
- Blower access cover allows full view of blower compartment
- Burners use the same air handling parts for each firing rate range
- Compact design using standard components, including Carlin electronic ignition and microprocessor primary controls. Optional oil line heater and SV oil valve also available
- Tapered electrode tip design doubles the life of electrodes

Unmatched Performance

- Positive ignition, stable operation and compact flame
- Not sensitive to draft or moderate back-pressure variations
- Damper not required to maintain high seasonal efficiencies
- Excellent performance in appliances that do not use refractory combustion chambers
- Pressure augments in 99FRD increases static pressure to 3.5 inches w.c. – for cleaner starts and stops

Specifications

Fuels

U. S..... No. 1 or No. 2 Fuel oil
 Canada..... No. 1 Stove oil or No. 2 Furnace oil

Electrical

Power 120 vac/60 Hz/1-phase
 Limit circuit input..... 120 vac/60 Hz

Current

99FRD Approximately 5.5 AMPS
 100CRD Approximately 5.5 AMPS
 102CRD Approximately 5.5 AMPS

Motor

99FRD 1/6 HP, 3450 RPM
 100CRD 1/6 HP, 3450 RPM
 102CRD 1/6 HP, 3450 RPM

(Optional) Oil valve power 120 vac/60 Hz
 (Optional) Nozzle line heater 120 vac/60 Hz

Ignition

Carlin Model 41000 solid state electronic ignitor
 Ignition voltage 14,000 VOLTS

Agencies

UL Listed (US & Canada)

Special Notes

1. 99FRD burners ship with blank (closed) air shutters. The maximum input with blank shutters is 2.25 gph. For higher firing rates, order with open air shutter (for range from 1.50 to 3.00 gph).
2. Burners ship standard with adjustable flange unless ordered for specific OEM application. Special welded flange and required insertion depth if welded flange is required. Use welded flange when firing into a positive-pressure combustion chamber.
3. All burners ship with single-stage fuel pump unless optional two-stage pump is specified.

201CRD & 301CRD ADVANCED OIL BURNERS

OIL BURNERS



Input

201 burners:

All 2.50 to 5.50 GPH

301 burners:

3¼" air cone, "B" style..... 3.00 to 6.00 GPH

3½" air cone, "C" style..... 4.00 to 7.00 GPH

The maximum firing rates shown are for natural draft at elevations up to 2,000 feet above sea level. For altitudes higher than 2,000 feet, reduce capacity 4% per 1,000 feet above sea level. Reduce the rate for forced draft firing as given in the burner manual (up to 15% reduction for 0.30 inches w.c. overfire pressure).

Features

201CRD and 301CRD advanced oil burners feature Carlin's adjustable combustion head assembly – for unmatched fuel/air mixing, smooth light-offs and quiet operation.

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 with unmatched performance

- Only adjustments are the air shutter and the combustion head, set with Carlin's easy-access screw adjustment
- Burners use the same air handling parts for all firing rates
- The 301CRD burner is available in two firing rates ranges, depending on air cone diameter selected
- Compact design uses standard components, including Carlin electronic ignition, microprocessor primary control, and instant-open SVC oil valve
- Tapered electrode tip design doubles the life of electrodes
- Positive ignition, stable operation, and compact flame
- Compact flame for maximum versatility
- Not sensitive to draft or moderate back-pressure variations
- Can operate in forced draft applications up to 0.20 inches w.c. overfire. [Overfire pressure up to 0.35 inches (201CRD) or 0.40 inches (301CRD) may be acceptable for pretested burners]
- High resistance to pulsation
- Excellent performance in appliances that do not use refractory combustion chambers.
- Rugged cast aluminum housing

Specifications

Fuels

U. S..... No. 1 or No. 2 Fuel oil
Canada No. 1 Stove oil or No. 2 Furnace oil

Oil nozzles, fuel unit & oil valves

Nozzle (1) req'd, sized for 150 PSIG
Fuel unit 1-stage, 100-150 PSIG, 7 GPH
Valve (instant open) Carlin SVC10FF

Electrical

Power..... 120 VAC/60 HZ/1-phase
Limit circuit input (60200 primary)..... 120 vac/60 HZ
Total current Approximately 3.3 AMPS
Motor..... 1/4 HP, 3450 RPM
Motor frame..... 48-frame, "N" flange
Oil valve power 120 VAC/60 HZ

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. 301 burners are available in two firing rate ranges. Specify 3¼" or 3½" air cone.
2. Available options:
 - 2-stage fuel unit.
 - Carlin 40200, 50200, 70200 or other primary control, plus an electronic 4-second time delay relay, can be supplied in place of the standard 60200 microprocessor primary control.
 - Forced draft adjustable flange or welded flange.
3. Local approvals: City of New York MEA No. 389-92-E; State of Massachusetts Approval No. CAR-88-05 (201) or CAR-88-06 (301).

701CRD, 801CRD, 702CRD ADVANCED OIL BURNERS



Input

701 burners:

High fire	6.0 to 13.2 GPH
Low fire	3.6 to 6.6 GPH

801 burners:

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. For altitudes higher than 2,000 feet, reduce capacity 4% per 1,000 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).

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 standby losses – typical savings of 15-20% in seasonal fuel usage when compared to single-stage flame retention burners.

Easy adjustment and service with 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 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 over fire pressure)
- High resistance to pulsation
- Excellent performance in appliances that do not use refractory combustion chambers
- Rugged cast aluminum housing

Specifications

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

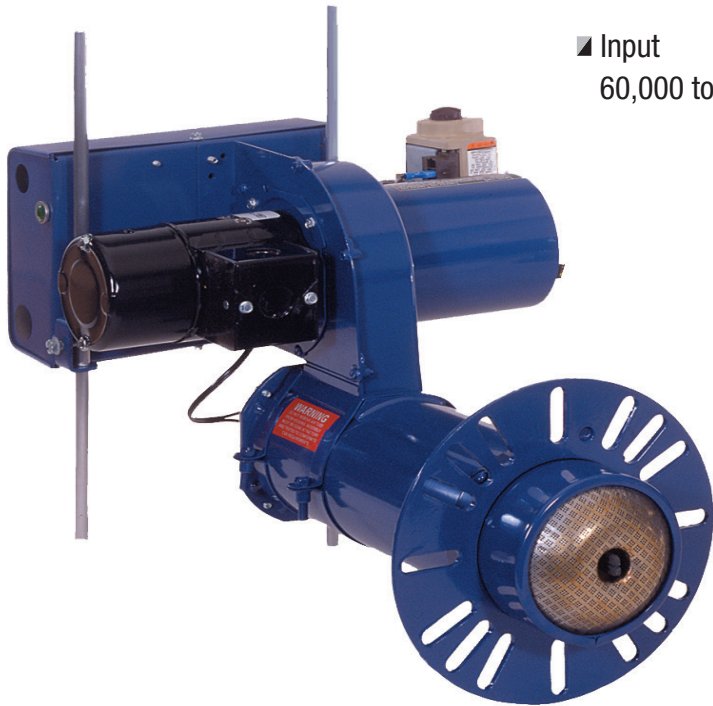
UL Listed	(US & Canada)
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Special Notes

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.

G3B POWER GAS BURNER

GAS BURNERS



■ Input
60,000 to 180,000 BTUH

Features

The **G3B** is a power gas burner for natural or propane gas – completely assembled, using premix combustion and hot surface ignition with flame rectification flame sensing.

- Converts from propane to natural gas with just an orifice change – no conversion kit needed
- Factory-packaged with combustion control and gas fuel train
- 60,000 to 180,000 BTUH – ideal for small to large homes
- High-efficiency, compact flame pattern design ensures clean, quiet operation
- Does not require a refractory liner – fires with or without a combustion chamber
- Ideal for high-efficiency wet-base boilers
- Superior for use in 2, 3, 4 or 5-section boilers
- Calibrated air throttle for easy adjustment
- Universal mounting flange
- Low-energy motor – only 0.40 amp
- Includes 1-year warranty

Specifications

Fuels

Natural gas or propane gas
Maximum supply pressure..... 14 inches w.c.
Minimum supply pressure..... 5.0 inches w.c.
Manifold pressure..... 3.5 inches w.c.

Electrical

Power..... 120 VAC/60 HZ/1-phase, Approx. 8 AMPS
Motor..... 1/50 HP, 3250 RPM
Gas valve power 24 VAC/60 HZ

Ignition

Norton hot surface ignitor, 120 VAC

Control

Honeywell S89C primary control

- 6-sec. Trial for ignition (TFI)
- 34-sec. Pre-purge / Ignitor warm-up
- Recycle on flame failure
- Factory installed and wired in control panel
- Panel includes valve-on light, transformer & relay

Agencies

CSA certified (US)

EZ GAS PRO CONVERSION BURNER

- Input
50,000 to 275,000 BTUH



GAS BURNERS

Features

- Converts from propane to natural gas with just an orifice change – no conversion kit needed
- Fires negative or positive chambers from 50,000 to 275,000 BTUH input
- Provides dependable, direct-spark ignition of main flame – for quick, clean light-offs
- Comes standard with time-tested solid state ignition and state-of-the-art microprocessor control technology
- Factory-packaged with combustion control and gas train
- Shipped completely assembled and wired – for “EZ” installation and start-up
- Diagnostic LED lights indicate operating mode: Self-check, Flame-on, Recycle, Lockout and Latch-up
- High-efficiency, compact flame pattern design ensures clean, quiet operation
- Does not require a refractory liner – fires with or without a combustion chamber
- Available with custom welded air tube flange (and/or optional pedestal) to accommodate most appliance mounting requirements
- Includes 1-year warranty

Specifications

Fuels

Natural gas or propane gas

Maximum supply pressure..... 14 inches w.c.
Minimum supply pressure..... 5.0 inches w.c.
Manifold pressure..... 3.5 inches w.c.

Electrical

Power 120 VAC/60 HZ/1-phase
Limit circuit input..... 120 VAC/60 HZ
Motor..... 1/15 HP, 3450 RPM
Current Approximately 2.0 AMPS
Fuel valve power..... 24 VAC/60 HZ

Ignition

Carlin Model 41800 solid state electronic ignitor
Ignition voltage 9,000 VOLTS

Control

Carlin Model 60200FR microprocessor control

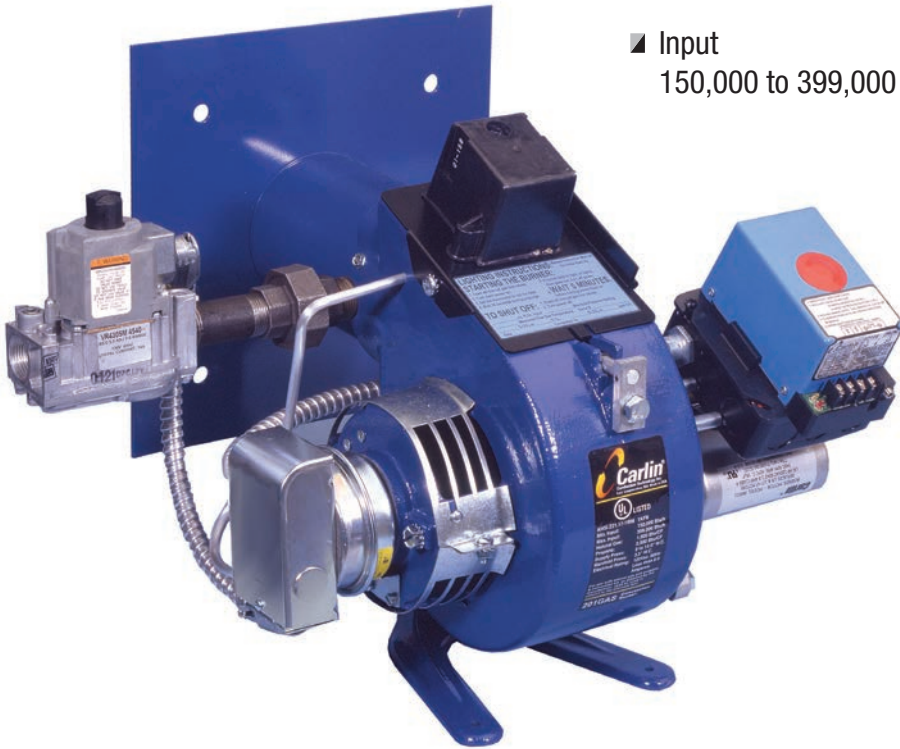
- 4-sec. Trial for ignition (TFI)
- 1.3-sec. FFRT
- Pre-purge and post-purge
- Serviceman reset protection (Latch-up after three consecutive lockouts)
- Interrupted duty ignition
- Recycle on flame failure

Agencies

UL Listed (United States) per ANSI Z21.17
MEA approval #137-05-E

201 GAS POWER GAS BURNER

GAS BURNERS



Input
150,000 to 399,000 BTUH

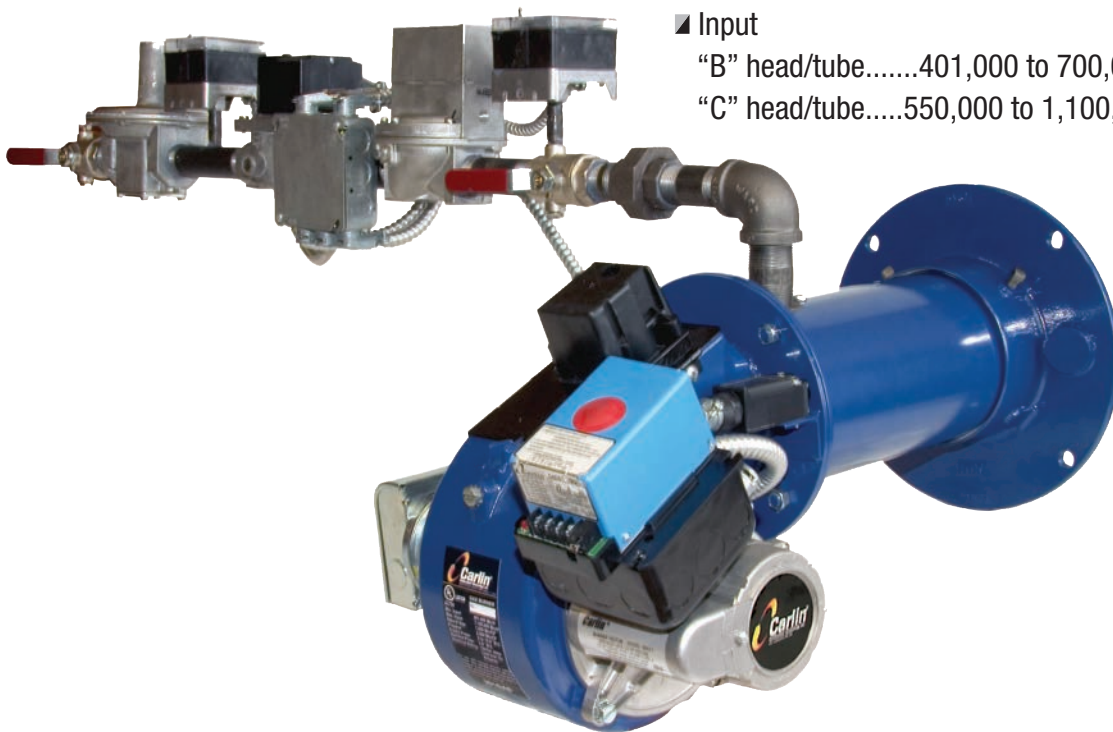
Features

- Converts from propane to natural gas with just an orifice change – no conversion kit needed
- Fires negative or positive chambers from 150,000 to 399,000 BTUH input
- Provides dependable, direct-spark ignition of main flame – for quick, clean light-offs
- Comes standard with time-tested solid state ignition and state-of-the-art microprocessor control technology
- Factory-packaged with combustion control and gas train
- Shipped completely assembled and wired – for easy installation and start-up
- Diagnostic LED lights indicate operating mode: Self-check, Flame-on, Recycle, Lockout and Latch-up
- High-efficiency, compact flame pattern design ensures clean, quiet operation
- Does not require a refractory liner – fires with or without a combustion chamber
- Available with custom welded air tube flange (and/or optional pedestal) to accommodate most appliance mounting requirements
- Includes 1-year warranty

Specifications

- Fuels**
Natural gas or propane gas
Maximum supply pressure..... 14 inches w.c.
Minimum supply pressure..... 5.0 inches w.c.
Manifold pressure..... 3.5 inches w.c.
- Electrical**
Power..... 120 VAC/60 HZ/1-phase
Limit circuit input..... 120 VAC/60 HZ
Motor..... 1/6 or 1/4 HP, 3450 RPM
Current..... Approx. 2.5 or 4.4 AMPS
Fuel valve power..... 120 VAC/60 HZ
- Ignition**
Carlin Model 41800 solid state electronic ignitor
Ignition voltage 9,000 VOLTS
- Control**
Carlin Model 60200FR microprocessor control
- 4-sec. Trial for ignition (TFI)
 - 1.3-sec. FFRT
 - Pre-purge and post-purge
 - Serviceman reset protection (Latch-up after three consecutive lockouts)
 - Interrupted duty ignition
 - Recycle on flame failure
- Agencies**
UL Listed (United States)..... per ANSI Z21.17

301 GAS POWER GAS BURNER



- Input
 - “B” head/tube.....401,000 to 700,000 BTUH
 - “C” head/tube.....550,000 to 1,100,000 BTUH

GAS BURNERS

Features

- Converts from propane to natural gas with just an orifice change – no conversion kit needed
- Fires negative or positive chambers from 401,000 to 1,100,000 BTUH input
- Dependable, direct-spark ignition of main flame – for quick, clean light-offs
- Time-tested solid state ignition and state-of-the-art microprocessor primary control technology
- Diagnostic LED lights indicate operating mode: Self-check, Flame-on, Recycle, Lockout and Latch-up
- Factory-packaged with combustion control and gas fuel train (assembled, shipped loose; also available as knockdown)
- Shipped completely pre-wired – for easy installation and start-up (knockdown version also available)
- High-efficiency, compact flame pattern design ensures clean, quiet operation
- Does not require a refractory liner – fires with or without a combustion chamber
- Available with custom welded air tube flange (and/or optional pedestal) to accommodate most appliance mounting requirements
- Includes 1-year warranty

Specifications

Fuels

Natural gas or propane gas
Maximum supply pressure..... 14 inches w.c.
Minimum supply pressure..... 5.0 inches w.c.
Manifold pressure..... 3.5 inches w.c.

Electrical

Power 120 VAC/60 HZ/1-phase
Limit circuit input..... 120 VAC/60 HZ
Motor..... 1/6, 3450 RPM
Current Approx. 2.5 AMPS
Fuel valve power..... 120 VAC/60 HZ

Ignition

Carlin Model 41800 solid state electronic ignitor
Ignition voltage 9,000 VOLTS

Control

Carlin Model 60200FR microprocessor control

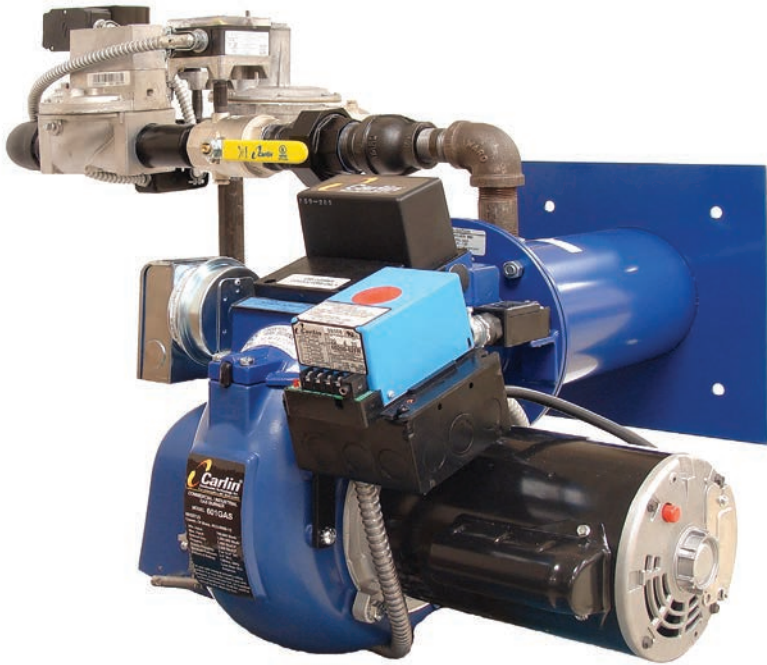
- 4-sec. Trial for ignition (TFI)
- 1.3-sec. FFRT
- Pre-purge and post-purge
- Serviceman reset protection (Latch-up after three consecutive lockouts)
- Interrupted duty ignition
- Recycle on flame failure

Agencies

UL Listed (United States)

601 GAS POWER GAS BURNER

GAS BURNERS



Input

700,000 to 1,500,000 BTUH

Features

- Converts from propane to natural gas with just an orifice change – no conversion kit needed
- Fires negative or positive chambers from 700,000 to 1,500,000 BTUH input
- Dependable, direct-spark ignition of main flame – for quick, clean light-offs
- Time-tested solid state ignition and state-of-the-art microprocessor primary control technology
- Diagnostic LED lights indicate operating mode: Self-check, Flame-on, Recycle, Lockout and Latch-up
- Factory-packaged with combustion control and gas train (assembled, shipped loose; also available as knockdown)
- Shipped completely pre-wired – for easy installation and start-up (knockdown version also available)
- High-efficiency, compact flame pattern design ensures clean, quiet operation
- Does not require a refractory liner – fires with or without a combustion chamber
- Swing-away housing design
- Available with custom welded air tube flange (and/or optional pedestal) to accommodate most appliance mounting requirements
- Includes 1-year warranty

Specifications

Fuels

Natural gas or propane gas

Maximum supply pressure..... 14 inches w.c.

Minimum supply pressure..... 5.0 inches w.c.

Manifold pressure..... 3.5 inches w.c.

Electrical

Power..... 120 VAC/60 HZ/1-phase

Limit circuit input..... 120 VAC/60 HZ

Motor..... 1/2 HP, 3450 RPM, 8.4 AMPS

Current..... Approx. less than 10 AMPS

Fuel valve power..... 120 VAC/60 HZ

Ignition

Carlin Model 41000 solid state electronic ignitor

Ignition voltage 14,000 VOLTS

Control

Carlin Model 60200FR microprocessor control

- 4-sec. Trial for ignition (TFI)

- 1.3-sec. FFRT

- Pre-purge and post-purge

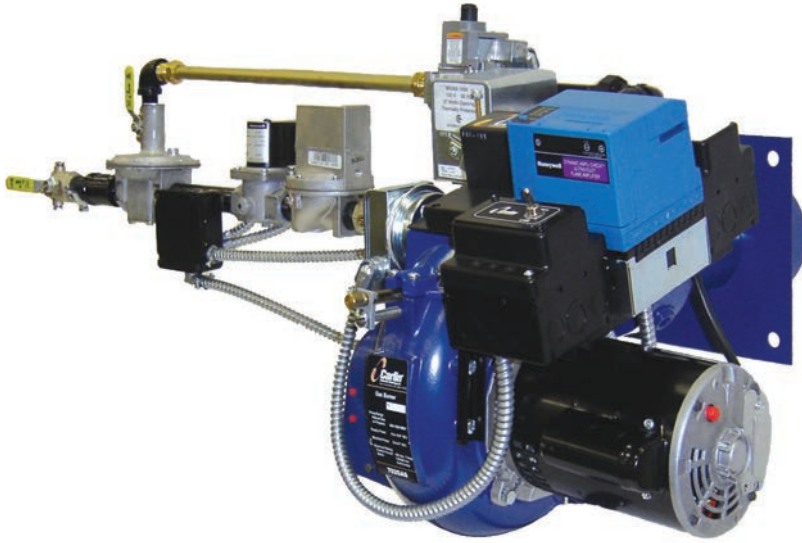
- Serviceman reset protection (Latch-up after three consecutive lockouts)

- Interrupted duty ignition

Agencies

UL Listed (United States)

702 GAS POWER GAS BURNER



Features

The **702GAS** advanced gas burner features Carlin's adjustable combustion head assembly – for unmatched fuel/air mixing, smooth light-offs and quiet operation. The automatically-closed air damper and low-high-low step modulation improve efficiency by closely matching output to demand and reduced stand-by losses – typical savings of 15-20% in seasonal fuel usage when compared to single-stage flame retention burners.

Easy adjustment and service with 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
- Burners use the same air handling parts for all firing rates
- Burners use standard components, including Carlin electronic ignitor and standard primary controls
- Jacob's-ladder electrode tips for wide spark pattern and reliable ignition
- Low-high-low step modulation, using butterfly gas valve, with motorized air damper (requires high fire control on boiler, by others)
- Positive ignition, stable operation and compact flame for maximum versatility (gas pilot ignition)
- Not sensitive 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 in appliances that do not use refractory combustion chambers
- Rugged cast aluminum housing

Input

- High fire.....840 to 1,600 MBH
- High fire.....490 to 940 MBH

Specifications

Fuels

Natural gas or propane

Gas Train

- (2) Main gas valves & RV-61 or RV-81 regulator
- Butterfly gas valve for input regulation
- 1" gas train standard; 1¼", 1½" or 2" gas train available

Electrical

- Power..... 120 v/60 Hz/1-Phase
- Limit circuit input (RM7897C primary)..... 120 vac/60 Hz
- Control circuit load..... (120 vac) 1.2 amps
- Motor..... 1/2 hp, 3450 rpm, 48-frame, "N" flange
- 115 / 208-230 vac/60 hz/1-ph, 8.4 / 3.8-4.2 amps
- Damper motor (with end switch) Honeywell M436A

Ignition & Primary Control

- Carlin Model 41000 solid state electronic ignitor
- Ignition voltage 14,000 volts
- Primary control Honeywell RM7897C

Agencies

UL Listed (US)

Special Notes

1. Available options:
 - Natural gas or propane firing.
 - Forced draft, adjustable flange or welded flange.
2. Local approvals:
 - City of New York MEA.
 - State of Massachusetts Approval optional.

GAS BURNERS

702G/O ADVANCED COMBINATION GAS/OIL BURNER



Features

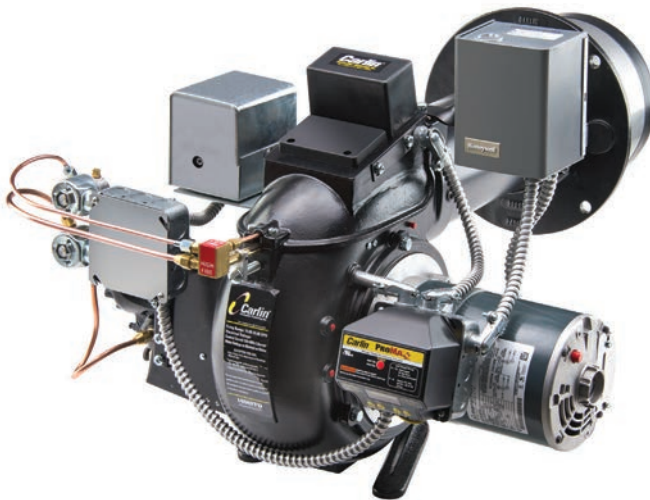
The **702G/O** advanced combination gas/oil burner features Carlin's adjustable combustion head assembly for unmatched fuel/air mixing, smooth light-offs and quiet operation.

The automatically-closed air damper and low-high-low step modulation (approximately 1.7:1 turndown) improve efficiency by closely matching output to demand and reduced stand-by losses—typical savings of 15-20% in seasonal fuel usage when compared to single-stage flame retention burners.

Firing Rate Ranges

Model	Range
Oil	6.0 - 11.2 GPH
Gas	840 - 1600 MBH

1050FFD & 1150FFD ADVANCED OIL BURNERS



Features

1050FFD and **1150FFD** advanced oil burners feature Carlin's Flame-Funnel combustion head design— for unmatched fuel/air mixing, smooth light-offs and quiet operation.

The automatically-closed air damper and low-high-low step modulation (approximately 2:1 turndown) improve efficiency by closely matching output to

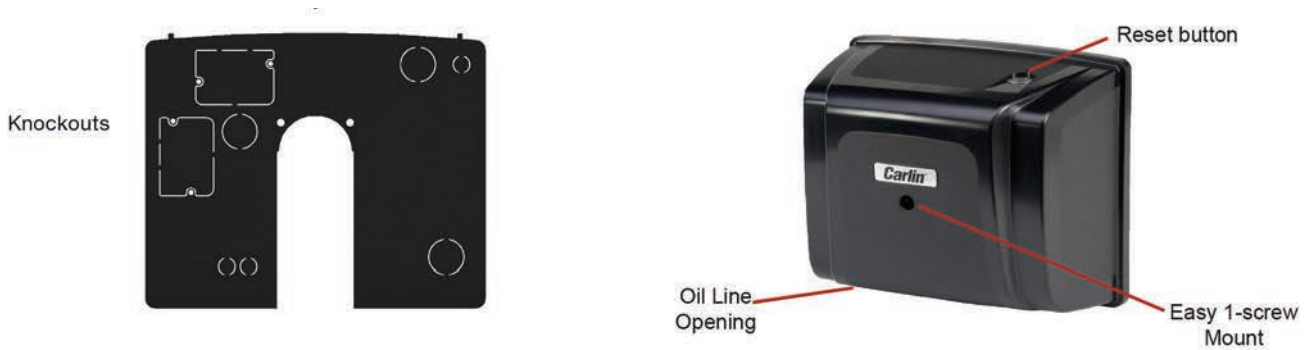
demand and reduced stand-by losses — typical savings of 15-20% in seasonal fuel usage when compared to single-stage flame retention burners.

Proven for years in the field and in extensive boiler and furnace testing, these burners cover the range from residential to light commercial, to meet your needs for oil-burning applications.

Firing Rate Ranges

Model	Range
1050	9.0 - 12.0 GPH
1050	15.0 - 25.0 GPH
1150	12.0 - 15.0 GPH
1150	20.00 - 35.00 GPH

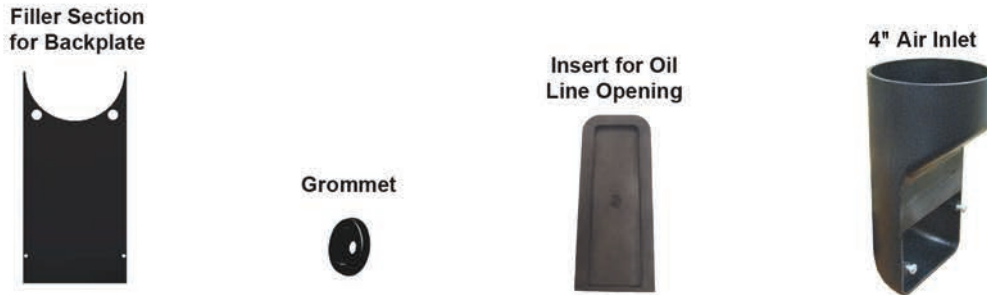
RETROFIT COVER KITS



Part/Model No.	Description	For Use On	Includes
RESCVR1S	Cover Kit - Oil	EZ-1, EZ-2, EZ-3, EZ-LF, EZ-Pro, EZ-66, 99FRD, 100CRD and 102CRD Burners*	Cover, Backplate, Mounting Hardware
RESCVR5S	Cpver Kit - Gas	EZ-Gas Burners*	Cover, Backplate, Mounting Hardware, Gas Valve Harness, 8" field drilled orifice

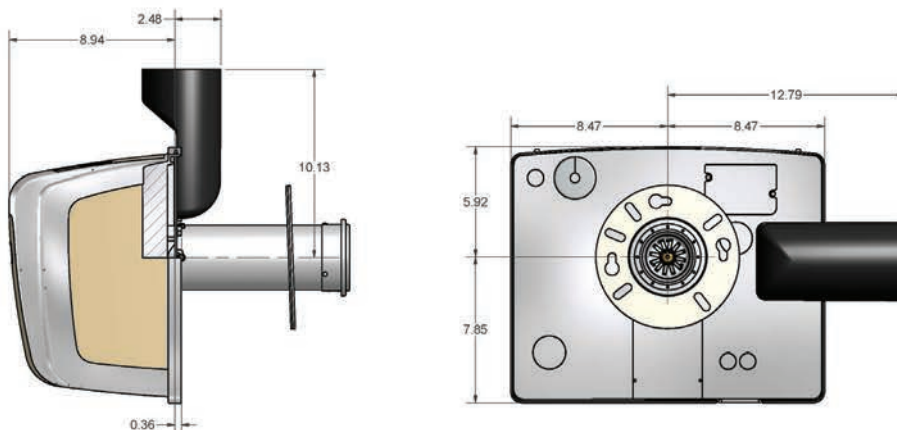
*Fits EZ-Gas, EZ-1, EZ-2, EZ-3, EZ-LF, EZ-Pro burners manufactured after August 9, 2012. Fits EZ-66 and 99FRD manufactured after October 10, 2012.

Outside Direct Vent Kit



Part/Model No.	Description	For Use On	Includes
50433KIT	OA/DV KIT	RESCVR1S & RESCVR5S	Filler Section for Backplate with Mounting Bolts, 4" Air Inlet with Mounting Screws, Insert for Oil Line Opening, 1 5/8" Grommet for BX Cable, Push Plugs

Dimensions



70200 UNIVERSAL OIL PRIMARY CONTROL

PROMAX

UNIVERSAL PRIMARY REPLACEMENT



Feature	Carlin 70200	Beckett Genisys	Honeywell R7284
Built-In Display	Yes	No	Yes
Adjustable TFI	Yes	No	Yes
Adjustable Early Spark Termination	Yes	No	No
Adjustable Flame Stabilization	Yes	No	No
Adjustable Ignition Type (Interrupted or Intermittent)	Yes	Yes	Yes
Adjustable Delay Valve On & Delay Motor Off	Yes	Yes*	Yes
Adjustable Allowed Recycles	Yes	No	No
Internal T-T Jumpered	Yes	No	Yes
Fault History	Yes	Yes*	Yes
Alarm Relay	Yes	No**	No
Vent Damper Contacts	Yes	No	No
Motor, Ignitor, and Valve Sense & Display	Yes	No	No
Pump Prime	Yes	Yes	Yes
Icons	Yes	No	No

*Only with tool carried by service tech

**Not standard offering, must purchase (52040 alarm model) added plug-in feature

Beckett Genisys is a registered trademark of Beckett Corp.

Honeywell R7284 is a registered trademark of Honeywell International, Inc.

Specifications

Power Input (red/white wire)	120 VAC, 60 HZ, 9VA
Limit Circuit Input (black wire)	120 VAC, 60 HZ
Motor Load (orange wire)	10 FLA/ 60 LRA (reduce by valve load)
Ignitor Load (blue wire)	120 VAC, 60 HZ, 500 VA
Vent Input	120 VAC, 60 HZ
Valve Load	2 amps
Vent Load	0.1 amp
Line Heater	1 amp
Alarm Contacts (dry contacts)	24V, AC/DC, 2A
Operating Temperature Limits	+32°F to +140°F
Storage Temperature Limits	-40°F to +185°F
Thermostat Anticipator Current	0.1 A, AC
Agencies	UL Recognized (US & Canada)

Replaces Beckett

7505A-000, 7505P-1515, 7505B-1500

Replaces Carlin

40200, 42230, 48245, 50200, 60200

Replaces Honeywell

RA116, RA117, R7184A, R7184B, R7184P, R7184U, R7284, R8184G, R8184P, R8184M (with Carlin Kool Kit)

Replaces ICM

ICM1501, ICM1502, ICM1503

PRIMARY CONTROLS

SERIES E OIL PRIMARY CONTROLS

- “Like-for-Like” Replacements for Models 40200, 42230, 48245, 50200, 60200
- Interrupted Duty Ignition
- 15-second trial for ignition (Models 40200, 50200, 60200)
- 30-second trial for ignition (Model 42230)
- 45-second trial for ignition (Model 48245)
- LED Indicators
- Recycle on flame failure
- Serviceman Reset Protection
- Pump Prime
- SMC Technology
- Alarm contacts (Models 50200, 60200)
- Flame Signal Test Jack (Models 50200, 60200)
- Valve Delay On/Motor Delay Off (Models 50200, 60200)



40200, 42230 Specifications

Power Input (from limit circuit)	120 VAC, 60 Hz, 10 VA
Motor Load	10 FLA, 60 LRA
Ignitor Load	120 VAC, 60 Hz, 500 VA
Operating Temperature Limits	+32°F to +140°F
Storage Temperature Limits	-40°F to +185°F
Thermostat Anticipator Current	0.2A, AC
Cad Cell Resistance - with flame	R < 1500 ohms
Agencies	UL Recognized (U.S. & Canada)

50200 Specifications

Power Input (from limit circuit)	120 VAC, 60 Hz, 9 VA
Motor Load	10 FLA, 60 LRA
Ignitor Load	120 VAC, 60 Hz, 500 VA
Alarm Contacts	24 V, AC/DC, 2 A
Operating Temperature Limits	+32°F to +140°F
Storage Temperature Limits	-40°F to +185°F
Thermostat Anticipator Current	0.2A, AC
Cad Cell Resistance - with flame	R < 1500 ohms
Agencies	UL Recognized (U.S. & Canada)

48245 Specifications

Power Input (from limit circuit)	120 VAC, 60 Hz, 10 VA
Motor Load	10 FLA, 60 LRA
Ignitor Load	120 VAC, 60 Hz, 500 VA
Operating Temperature Limits	+32°F to +140°F
Storage Temperature Limits	-40°F to +185°F
Thermostat Anticipator Current	0.2A, AC
Cad Cell Resistance - with flame	R < 1500 ohms
Agencies	UL Recognized (U.S. & Canada)

60200 Specifications

Power Input (from limit circuit)	120 VAC, 60 Hz, 9 VA
Limit Circuit Input (black wire)	120 VAC, 60 Hz
Motor Load	10 FLA, 60 LRA
Ignitor Load	120 VAC, 60 Hz, 500 VA
Valve Load	120 VAC, 60 Hz, 2.0 A
Alarm Contacts	24 V, AC/DC, 2 A
Operating Temperature Limits	+32°F to +140°F
Storage Temperature Limits	-40°F to +185°F
Thermostat Anticipator Current	0.1A, AC
Cad Cell Resistance - with flame	R < 1500 ohms
Agencies	UL Recognized (U.S. & Canada)

41000, 40700 & 40900 ELECTRONIC IGNITORS



Features

- 14,000-volt and 20,000-volt output for smooth ignition
- Improved circuit design for added durability
- Low current draw saves electricity
- Epoxy sealant provides water resistance and heat dissipation
- Consistent voltage output across a wide range of input voltages

Ignitor Model	41000	40700	40900
Power Input	120 VAC, 60 Hz, 40 VA	208 - 240 VAC, 50/60 Hz, 60 VA	12 VDC, 50 VA
Ignitor Output	14 KV, 35 mA RMS	14 KV, 35 mA RMS	20 KV, 28 mA RMS
Secondary Grounding	Midpoint	Midpoint	Midpoint
Operating Temperature Limits	+32°F to +140°F	+32°F to +140°F	+32°F to +140°F
Storage Temperature Limits	-40°F to +185°F	-40°F to +185°	-40°F to +185°
Agencies	UL Recognized U.S. & Canada	UL Recognized U.S. & Canada	UL Recognized U.S. & Canada

PSC MOTORS



Features

- Slotted mounting holes for easy and fast installation
- Auto reset thermal overload
- Quiet sealed ball bearings
- Fits all 48M frame housings including Carlin, Beckett and Wayne

Part number:	98022	98611	98627	98628	98629	98630	98866	99220
Power input (VAC, 1-PHASE)	120	120	230	120	120	120	120	230
Frequency (HZ)	60	60	50/60	60	60	60	60	50
Rating (HP)	1/6	1/6	1/6	1/6	1/15	1/4	1/6	1/4
Starting/running currents (AMPS RMS)	6.1 / 1.8	6.1 / 1.8	1.0	6.1 / 1.8	4.3 / 1.25	12.1 / 2.7	4.3 / 1.25	1.3
Speed (RPM)	3450	3450	2840/3390	3450	3450	3450	1725	2800
Frame	48M	48N	48M	48N5	48M	48N	48N	48N
Lead length (INCHES)	10	10	10	20	10	10	10	10
Rotation (LOOKING FROM REAR)	clockwise	clockwise	clockwise	counterclockwise	clockwise	clockwise	clockwise	clockwise
Capacitor location (LOOKING FROM REAR)	9:00	9:00	9:00	6:00	9:00	9:00	9:00	9:00
Capacitor (µF)	16	16	5	16	12.5	25	14	6.3
Part number	98022CAP	98022CAP	98627CAP		98629CAP	98630CAP	98866CAP	99220CAP
Agencies	UL, CUL recognized							



Carlin Combustion Technology, Inc. is a division of C. Cowles & Company.

C. Cowles & Company was founded in New Haven, Connecticut over 175 years ago. The company has evolved from a manufacturer of lanterns for horse drawn carriages to a world-class, precision metal stamping company, producing components for U.S. and Japanese automakers.

Today, with six operating divisions, C. Cowles has diversified into plastic injection molding, commercial lighting, automotive accessories as well as boiler controls, burners, controls and ignitors for the heating industry. With a constant focus on product development and improved manufacturing methods, C. Cowles and its divisions maintain leadership roles in the industries they serve.



COWLES PRODUCTS

COWLES
STAMPING INC.



Phillips-Moldex Company



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