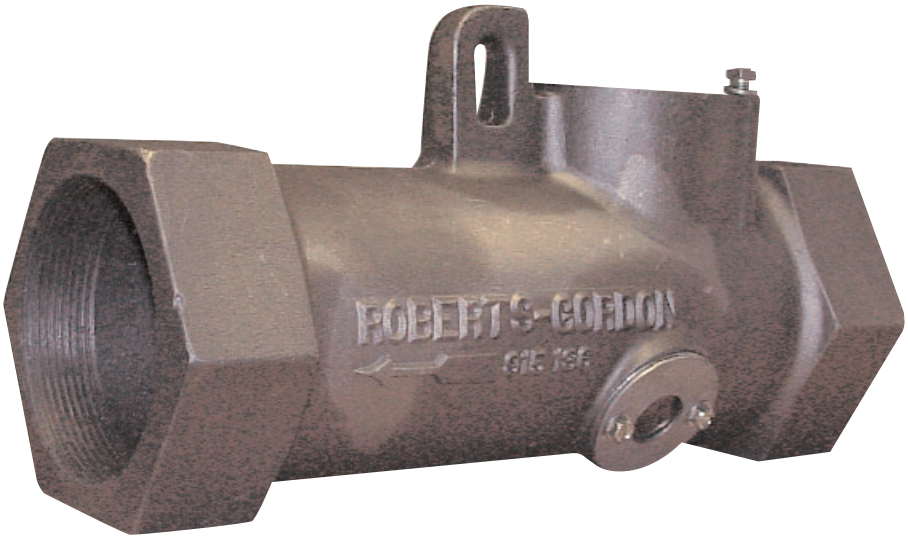
RG ROBERTS GORDON



25 Year Warranty*

- Excellent efficiency and ideal combustion from zero regulator incorporated in state of the art burner design
- Most efficient and durable infrared heating system with the longest warranty in the industry
- Virtually unlimited design options from custom engineered system
- Fuel savings and enhanced user comfort provided by burners in-series design

CoRayVac®

Classic

Low-intensity Continuous Infrared Heating System

* on cast-iron combustion chambers only.

CUT HEATING FUEL BILLS BY UP TO 50% WITH ROBERTS GORDON®
www.rg-inc.com

Quality in Any Language™

DESIGN CERTIFIED®

CERTIFIED®

CORAYVAC® CLASSIC

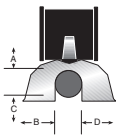
Model	B-2	B-4	B-6	B-8	B-9	B-10	B-12
Input (BTUH) (x1000)	20	40	60	80	90	100	110
Number of Burners/Branch (Maximum)*	6	4	4	3	2	3	2
Radiant Tube Length Between Burners (Ft.)							
Minimum	10	12.5	20	25	25	30	35
Recommended	15	20	25	30	30	40	50
Maximum	20	25	35	45	40	60	70
Fuel	Natural Gas (NG) or Propane Gas (LP); B2 - Natural Gas Only						
Inlet Pressure (In. w.c.)							
NG	4.5 Minimum; 14.0 Maximum						
LP	10.5 Minimum; 14.0 Maximum						
Gas Connection	1/2" NPT (36" Stainless Steel Flex Included with Burner)						
Electrical Supply**	120V, 60 Hz., 0.3 Amp (Connection - Cord with Three-Prong Molded Plug)						
Burner Head	Cast iron (Optional - Nickel Plated Cast Iron)						
Combustion Chamber	Cast Iron						
Heat Exchanger Tubing Radiant	4" Dia., Schedule 40 Pipe						
Tailpipe	4" Dia., Schedule 40 Pipe						
Exhaust Flue O.D. (In.)	4" - 8"						
Reflector and End Caps	.024 Mill Finish Aluminum (Optional - .024 Stainless Steel Type 304						
Ignition	Fully Automatic, Three-Try Direct Spark Electronic Ignition Control, 100% Shut-Off						
Approved As	Indoor (Vented)						
CSA Standards	ANSI Z83.6/CAN2. 16						
Burner Weight (Lbs.)	19						
Warranty	Three-Year Limited (Refer to Installation, Operation and Service Manual for Details)						

*Refer to the CORAYVAC® Design Manual for complete design requirements or contact your ROBERTS GORDON® North American independent distributor for further assistance.

** Refer to Pump Spec Sheet for complete system electrical requirements.

Clearances to Combustibles** (In.)

Model		B-2	B-4	B-6	B-8	B-9	B-10	B-12	B-12A
Horizontal	A	4	4	4	4	4	4	4	4
	B	20	20	20	20	36	36	36	36
	C	48	48	48	48	60	60	60	60
	D	20	20	20	20	36	36	36	36



† For other mounting options and associated clearances, complete installation, operation and service criteria, please see the current issue of the CORAYVAC® Installation, Operation and Service Manual.

†† These clearances apply to "End Burner Only" branches.

Installation Code: ROBERTS GORDON® products are to be installed only in accordance with local laws, codes and regulations, and only by a contractor qualified in the installation and service of gas-fired heating equipment.

Further Information: Applications, engineering and detailed guidance on systems design, installation and product performance is available through ROBERTS GORDON® North American independent distributors. Please contact us for any further information you may require, including the CORAYVAC® Installation, Operation and Service Manual.

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RG ROBERTS GORDON
Infrared Heating

ENGINEERING SPECIFICATIONS

DEFINITIONS:

1.) The gas-fired radiant heating system shall consist of multiple burner units utilizing one pump, radiant piping and a control system.

STANDARD:

1.) The heating system supplied shall be design certified by the CSA and this per American National Standard Z83.20-2001 "VENTED INFRARED HEATER".
2.) Each burner shall have a name plate affixed that bears the seal of the CSA.
3.) The manufacturer on request of the purchaser will supply a copy of the current design certification to cover the entire system.
4.) Combustion System: The combustion system will be capable of being the combustion condensing type which the products of combustion are exhausted below the dew point of the moisture in the flue gases (140°F-180°F).

EQUIPMENT:

1.) BURNER UNITS
   A.) Each burner shall consist of heavy-duty cast iron burner heads and cast iron combustion chambers, prewired gas controls, transformer, direct spark ignition module (DSI), and combustion air filter.
   B.) Burners shall be designed for firing in tandem without adverse effects from combustion gases from upstream burners.
   C.) The design of the burners supplied shall provide for maintaining a constant proportion of fuel gas to filtered combustion air. These conditions are met for burners in which the pressure of both the fuel gas and the combustion air are both introduced at zero (atmospheric) pressure and the flow of each is established by a vacuum on the downstream side of the flow metering orifices.
   D.) Outside Air: When specified, the system shall be capable of supplying air from outside to each burner and end vent for the support of combustion in contaminated environments.
2.) BURNER CONTROL
   A.) All burners shall be factory wired for 110 volts with transformer for 24 volt DSI operation and supplied with grounded 18" three wire pigtail located at the rear of the burner.
   B.) To assure a high degree of fail-safe operation, the design shall preclude main flow of gas if any or all of the following abnormal conditions occur.
      1.) Pump fails (pressure switch cuts power to burners).
      2.) Power fails. (Gas valve in burners close in safe position.)
   C.) All gas vacuum-firing burner units shall be equipped with a Direct Spark Ignition Module (DSI). The DSI module shall have a 15 second flame response time before a lockout occurs. the spark shall shut off when the burner flame is established.
   D.) All units to be supplied with outside air for combustion and any excess air required by system if inside air contains contaminants.
3.) RADIANT PIPING-HEAT EXCHANGER
   A.) Radiant pipe shall be new 4" black steel pipe ASA Schedule 40 ASTM A120 (Domestic pipe required if U.S. Government job). Each threaded joint shall be wiped with "Never-Seez" high temperature joint compound.
   B.) Fittings for radiant piping shall be 150-pound rated screwed malleable iron per fed. Spec. WWP-521, Type 1.
   C.) Manifold and tail pipe shall be new 4" black steel pipe ASA Schedule 40 ASTM A120 (Domestic pipe required if U.S. Government job).
   D.) Hanging Materials: All systems pipe must be supported in accordance with acceptable practices, local codes, seismic requirements, applicable standards and as shown on plans. Pipe shall pitch down at least 1/2" in 20' on radiant lines and 1" in 20' on manifold and tailpipe lines towards pump.
   E.) Reflectors: All reflectors shall be of a highly infrared reflective material such as aluminum.
      1.) Standard reflectors shall be installed on all radiant pipe, manifold pipe, and tail pipe as indicated on system layout furnished.
      2.) System to have perimeter side extension reflector in certain areas of layout as shown on plan specified. Side reflectors permanently attached to side of top reflector supports and two "Z" clips for each 8' section of side reflector.
   F.) End Vent Assembly: Each open end combustion chamber shall have an approved end vent and the reflector in this area shall have an end cap, and be installed according to the manufacturers installation instructions as shown on plans.
4.) PUMP
   A.) The system shall vent all products of combustion outdoors by means of the pump.
   B.) The pump shall be equipped with a maximum of 1 1/2 horsepower, 60 hertz, 120 volt 3450 RPM, single phase motor. This motor shall have single overload protection, ball bearings, and shall be constructed in accordance with electric motor industry standards.
   C.) The scroll of this pump shall be cast iron or 319 cast aluminum with a minimum metal thickness of approximately 3/16". The impeller wheel shall be cast 319 alloy aluminum or AlMag 535 casting aluminum alloy with a minimum metal thickness of 3/32".
   D.) There will be a low voltage 24 volt two wire circuit from the pressure switch (located at the inlet to the pump) to the control panel.
   E.) The connection between the pump inlet and tailpipe is made with acoustic boot clamps provided. The discharge connection is made with 4 1/2" acoustic boot and schedule 40 steel pipe or 4" ABS pipe and fittings.
   F.) To further assure a high degree of safety, the system will be under negative pressure at all times during the operation to preclude the possibility of the escape of combustion gases inside the building.
   G.) The pump motor requires a 2 wire grounded circuit 115 volts, single phase, 60 hertz for a total of 16 full load amps. This motor must have the same rotation to match the direction of the arrow on the fan scroll. If the motor is not rotating in this direction, it must be reversed by interchanging the red wire #8 with the orange wire #5. These are located behind the motor escutcheon plate.
   H.) The pump shall be acoustically isolated from the system with a flexible connector with temperature rating of 350°F minimum. The motor in the pump shall be secured with rubber mounts for acoustical isolation.
5.) SYSTEM CONTROL
   A.) Prewired system control circuits shall be in a panel box with each pump. The panel box for the control of the burners shall provide relays and terminals to accommodate up to four temperature zones with a thermostat and associated control circuits for the burners for each temperature zone. The control panel shall have indicator lights showing: 1-Power on. 2-Pump on. 4-Zones in operation.
   B.) All control circuits must be properly polarized. All burner units located on one radiant pipe line must use the same zone. All burner units using the same tailpipe also must be on the same zone. (except last 10' into pump.)
   C.) All combustion chambers and pipes connected to the pump shall be post-purged with air for a period of at least 20 seconds (10 air changes minimum) prior to initiation of firing sequence.
   D.) All combustion chambers and pipes connected to the pump shall be post-purged with air for a period of at least 2 minutes (10 air changes minimum) after shut down of the last burner firing into the pump.
   E.) All pumps shall be provided with pressure switches to prevent opening of gas valves until vacuum in the pipe is proven.
   F.) Pre-purge of the system is obtained from the solid state timer relay located in the furnished panel. The first zone thermostat calling for heat will activate this relay.
   The pump motor will start and the pressure switch after sensing a minus pressure of 2" water column completes the circuit will begin pre-purge. After approximately 45 seconds the 110 volt control circuits will be activated and burners will light automatically. The burners will remain on until the thermostat is satisfied. At that time the gas valve and DSI will drop out, but the pump will continue to run to give a post-purge. This post-purge period on the last zone thermostat to be satisfied (internally provided in panel box).
   G.) The low voltage control system furnished is designed to maintain the set point of the thermostat without additional controls added in the field. The system must not be turned off at night or weekends. (night set-back of not over 10° may be used on weekends or extended periods of time when the building is not occupied.)
   H.) The system wiring diagram shall conform to wiring diagrams furnished with installations and service sheets furnished with the units and as on plans.

THE ROBERTS GORDON® CORAYVAC® CLASSIC WARRANTY

ROBERTS-GORDON WILL PAY FOR:

ROBERTS GORDON® warrants to the original owner-user that this ROBERTS GORDON® product will be free from defects in material and workmanship. This warranty is limited to thirty-six (36) months from the date of purchase by the original consumer, or forty-two (42) months from date of shipment by Roberts-Gordon, whichever occurs first.

* ROBERTS GORDON® warrants the cast iron combustion chamber of the CORAYVAC® Classic System will be free from defects in material and workmanship. This warranty is limited to twenty-five (25) years from the date of shipment by Roberts-Gordon. All other components of the CORAYVAC® Classic System adhere to the standard warranty listed in the paragraph above.

ROBERTS GORDON® replacement parts are warranted for the period of the original ROBERTS GORDON® CORAYVAC® Warranty.

ROBERTS-GORDON WILL NOT PAY FOR:

Service trips, service calls and labor charges.

Shipment of replacement parts.

Damage due to:

Failure to install, operate or maintain the ROBERTS GORDON® CORAYVAC® as directed in the Installation Manual. You must follow the requirements printed in this manual.

Misuse, abuse, neglect or modification of the ROBERTS GORDON® CORAYVAC® in any way.

Improper service, use of replacement parts or accessories that are not specified by Roberts-Gordon.

Improper installation, or any relocation of the ROBERTS GORDON® CORAYVAC® after initial installation.

Incorrect supply, accident, fire, flood, acts of God or other casualty.

Use of the ROBERTS GORDON® CORAYVAC® for other than its intended purpose.

Use of the ROBERTS GORDON® CORAYVAC® in a corrosive atmosphere or any atmosphere containing contaminants.

Shipping. Claim must be filed with carrier.

Use of the ROBERTS GORDON® CORAYVAC® in the vicinity of combustible or explosive materials.

Any defect in the ROBERTS GORDON® CORAYVAC® arising from a drawing, design or specification supplied by or on behalf of the consumer.

Failure of parts not manufactured by Roberts-Gordon in respect of any claim where the total price of the goods has not been paid.

WARRANTY IS VOID IF:

The ROBERTS GORDON® CORAYVAC® is not installed by a contractor qualified in the installation and service of gas-fired heating equipment.

You cannot prove original purchase date and required annual maintenance history.

The data plate and/or serial number are removed, defaced, modified or altered in any way.

The ROBERTS GORDON® CORAYVAC® is transferred. This warranty is nontransferable.

Roberts-Gordon is not permitted to inspect the damaged burner and/or component parts.

READ YOUR INSTALLATION MANUAL

If you have questions about your heater, contact your installing professional. Should you need Replacement Parts or have additional questions, call or write ROBERTS-GORDON®:

Canada
241 South Service Road, West
Grimsby, Ontario L3M 1Y7
905.945.5403

U.S.A.
1250 William Street
P.O. Box 44
Buffalo, New York 14240-0044
716.852.4400

On the web at:

www.rg-inc.com

Roberts-Gordon's liability, and your exclusive remedy, under this warranty or any implied warranty (including the implied warranties of merchantability and fitness for a particular purpose) is limited to providing replacement parts during the term of this warranty. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you. There are no rights, warranties or conditions, expressed or implied, statutory or otherwise, other than those contained in this warranty.

Roberts-Gordon shall in no event be responsible for incidental or consequential damages or incur liability for damages in excess of the amount paid by you for the ROBERTS GORDON® CORAYVAC®. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

Roberts-Gordon shall not be responsible for failure to perform under the terms of this warranty if caused by circumstances out of its control, including but not limited to fire, flood, strike, government or court orders, unavailability of supplies, parts or power. No person is authorized to assume for Roberts-Gordon any other warranty, obligation or liability.

LIMITATIONS ON AUTHORITY OF REPRESENTATIVES:

No representative of Roberts-Gordon, other than an Executive Officer, has authority to change or extend these provisions. Changes or extensions shall be binding only if confirmed in writing by Roberts-Gordon's duly authorized Executive Officer.