



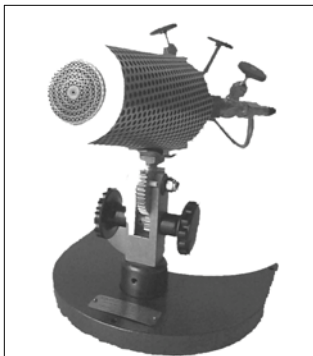
CC , CC "PLUS", & CC "PLUS PLUS" BURNER



CC Burner with #5 Centerfire Tip and Rack & Pinion

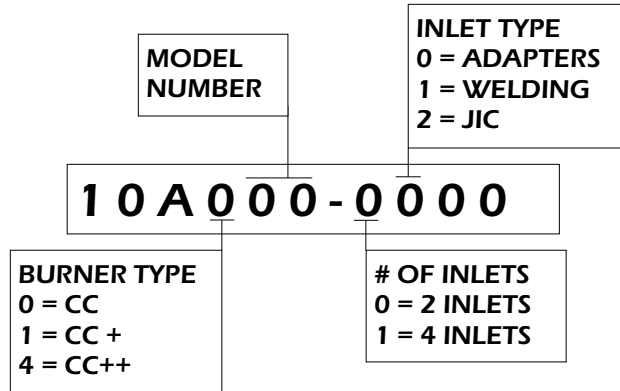


CC "Plus" Burner with #5 Centerfire Tip and Ball & Post



CC "Plus Plus" Burner #5 Centerfire Tip and Rack & Pinion

HOW TO ORDER



Example: A CC "Plus" Burner with a #3 Centerfire Tip, Rack & Pinion Mount, four inlets, and welding hose connections would be:

10A124-1100

BURNER ASSEMBLIES	MODEL NUMBER
#5 Centerfire Tip Burner with Ball & Post	01
#5 Centerfire Tip Burner with Rack & Pinion	24
#3 Centerfire Tip Burner with Ball & Post	52
#3 Centerfire Tip Burner with Rack & Pinion	53
Hydrogen Burner with Ball & Post	02
Hydrogen Burner with Rack & Pinion	25

The Carlisle CC and CC "Plus" Burners are known as cannon style burners. Their large outer case and tremendous flame output resembles the profile of a "cannon". These burners may be used with a mixture of oxygen and either natural gas, propane, or hydrogen (different tips are suggested depending on the gas used).

Both burners produce two distinctive flames, the centerfire (pre-mixed) and the outer fire (surface mixed). The centerfire, which has characteristics of a single ported tip, produces a pre-mixed flame similar to what may be achieved with a Carlisle hand torch. There are three types of centerfire tip. The first is the #5 centerfire tip. This tip

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has a larger orifice than the #3 centerfire tip and produces more BTU's. The #3 centerfire tip produces a more defined centerfire flame, and is often associated with propane use. The last type of centerfire tip is the hydrogen tip which is for use with hydrogen gas and has the same orifice size as the #5 centerfire tip. The #5 and #3 centerfire tips utilize piloting. The hydrogen tips are unpiloted.

The outer shell of the CC series body is manufactured from brass (SS optional). The brass shell is threaded onto a machined brass billet or a machined bronze casting, which represents the mixer body. For fuel gas supply, four metering valves are attached to the back of the mixer body. These valves are color coded for ease of use. The oxygen valves have green handles while the gas valves have red handles. These valves are standardly interconnected by crossover attachments to limit the feed hose requirements to two. The CC series is also available with four separate inlets to allow for the use of foot controllers. The standard connection type for this configuration is hose adapters. Other connection types are available such as welding hose and JIC connections. These connection types are explained further in the options and accessories section. For ordering information, refer to the "How To Order" section.

The CC series can accept and interchange several different styles of base attachments. The standard style is a Ball & Post mount. The Ball & Post utilizes the horseshoe shaped cast iron base or crescent shaped solid steel base with a ball and socket connection. The post that extends upward is threaded directly into the bottom of the CC mixer body. This style offers a selective articulation. In order to adjust the angle of the head, the user manually releases a thumb screw in the cast iron base. When re-tightened, this provides positive burner positioning. The Rack & Pinion style mount utilizes a pinion gear to pivot the burner in an arc, offering greater range in positioning than the Ball & Post mount. The user can adjust a knob on the side of the mounting device for quick, accurate positioning. Custom lathe mounts are also available as an option.

The Heat Exchanger is standard with any CC series burner. Manufactured from aluminum, the Heat Exchanger dissipates heat from the burner body. The Heat Exchanger has cooling fins providing increased surface area for the transfer of heat. Some applications with high radiant heat transfer, will find our water cooling option desirable.

CC SERIES OPTIONS AND ACCESSORIES



Connection Types w/
Hose

Connection Types

The CC burner series standardly comes equipped with a set of two hose adapters. These hose adapters also have crossovers attached to them so that they may feed both the inner and outer fires. Other types of hose connections are available as demonstrated in the "How To Order" section. The types of connections offered are hose adapters, welding hose connections, and JIC fittings. Carlisle will also remove the crossovers and supply the burner with four connections if specified.

Hosing

The CC burner series does not come with any hosing to connect the burner to the fuel supplies. Carlisle offers three types of hosing for this use. The most common type of hosing available is Latex Hosing. It is used by slipping the elastic end over a hose adapter and clamping the hosing down with a bracket. Latex hosing is very flexible, although it is not very durable. The next type of hosing is "T" grade welding hose that is specially rated to support both natural gas and propane. This hosing has both good flexibility and a much improved durability over the latex type. The third type of hosing is the stainless steel braided hosing. This hosing is produced by taking a smooth bore Teflon hose and covering it with a braided stainless steel mesh. With a moderate flexibility and a heavy durability, this hosing is what Carlisle recommends for use with the CC burner series. The stainless steel braided hosing is connected to the burner via JIC fittings or can be adapted to work with welding hose fittings as an option.

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Chiller 2.0

Chiller 2.0

Any burner has the potential to over heat given the right set of circumstances. Overheating causes a bench burner to rapidly degrade at a much faster rate leading to expensive repairs and eventually early replacement. For these reasons, Carlisle offers a water-cooling option to keep the CC or CC "Plus" Burner much cooler during operation. The Chiller™ 2.0 can be purchased separately and installed by the user. The user must remove the heat exchanger from the CC or CC+ Burner and slip the Chiller 2.0 over the burner barrel, tighten the set screw and hook up the water inlet and



Water Cooling

Water Cooling

The water cooling option keeps the CC or CC "Plus" Burner much cooler during operation. The water cooling option is installed by removing the heat exchanger and adding the water cooling jacket over top of the burner's outer casing. The water cooling jacket is then soldered into place. The two copper water circulation tubes are flexible and can be shaped to almost any position the user desires. This option can be purchased when the burner is manufactured. It can also be added on later by sending the burner back to Carlisle for installation.



Independent Pilot

Independent Pilot

The independent pilot option allows the user to have a standing pilot in front of the burner for lighting your CC or CC "Plus" Burner. The Independent Pilot consists of a copper tube run from the outer gas bypass valve, under the burner, and up to the face where the pilot would remain lit. The pilot is adjustable via a bypass valve that sits directly before the outer fire's gas valve. This option can be purchased with the burner or added on later, but the burner must be sent back for installation.



EL-2 Foot Pedal

Foot Controllers

By utilizing a foot controller, users free their hands from the need to constantly meter the flame. Carlisle has two separate types of foot controllers available for the CC burner series. The EL-2 (Bulletin 28A) is designed with two solenoid valves operated by a foot pedal. When the foot pedal is pressed, the solenoid valves for both the gas and oxygen will fully open. With the next press, the same valves



RMB Foot Controller

will completely shut down. It is important to note that this type of foot controller can only be used with the outer fire (surface mixed) of the CC series burners. Using this type of control with the center fire (pre-mixed) would be sure to invite the chance for flashback. The RMB (Bulletin 16E) allows for complete metering of fuel gases for the outer flame. From a small pinpoint flame to a larger bushier flame, the RMB valves can give the user the full range of a standard metering valve. The RMB is controlled by two rollers which are rolled forward to open the valves and rolled back to close the valves. However, the RMB valves are not positive closing. A separate shut-off method, other than the RMB, will be necessary for shutting off the burner.

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Lathe Attachment

Some users of the CC Burner Series will find it desirable to mount the burner on the "Burner Carriage", of a glassworking lathe. This requires the removal of the existing cast iron base and attachment to the lathe mount. Different lathe manufacturers may have slightly different burner carriage configurations. We customize the lathe mount to accommodate these design differences. However, the mount provides for a low profile burner attachment with a slide bar as a base fixture. The slot in the sliding base allows for a high degree of adjustability from the mount.

Stainless Steel Outer Casing

The CC series standard units are equipped with a brass outer casing. For use with high heat reflection, Carlisle offers a stainless steel outer casing. The stainless steel has a higher resistance to degradation. Users will find that a stainless steel outer casing will give their CC series burner a longer life.

Aluminum Heat Exchanger

Manufactured from aluminum, the Heat Exchanger dissipates heat from the burner body. The Heat Exchanger has cooling fins providing increased surface area for the transfer of heat. This keeps the burner cool during operation. Although the Heat Exchanger is standard on the CC series burners, it can be purchased separately for replacement or for installation on an older unit. The installation of the Heat Exchanger is a simple process that requires only an allen wrench for tightening.

CC Series Valves

For fuel gas supply, four metering valves are attached to the back of the CC series burner's mixer body. These valves are color coded for ease of use. The oxygen valves have a green handle while the gas has a red handle. These valves are standardly interconnected by crossover attachments to limit the feed hose requirements to two. The valves and the crossovers can be purchased separately for replacement. There is also a Valve Replacement Kit available that includes all four valves and the two crossovers for a complete changeout of the of valve system.

Gas Optimizer

Utilizes compressed air "Bleed" into the fuel gases through (2) Venturi mixers mounted at the burner valve body. By premixing the gas, the optimizer decreases the BTU capacity per cubic foot of a specific fuel gas. This changes the dynamics and flame characteristics. With propane, the flame becomes more focused and narrow with the use of the optimizer. This also helps reduce the "burning out" or "muting" of more exotic colors. In order to produce the same amount of heat, a greater volume of gases must pass through the burner. As the flow increases, the gases travel faster. High gas velocity results in less heat transfer back into the burner, allowing the burner to operate cooler. Compressed air is less costly than compressed oxygen which saves money too.

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The Carlisle Gazette

Volume 2, Issue 3
Friday, June 6, 2003

About Carlisle Machine Works, Inc.

Carlisle Machine Works, Inc., has been supplying the industry with firepower 1918. In 1982, Carlisle expanded from its gas burner roots to include an Automation Division and a Custom Machining Division.

Our Burner Division has products that will meet the needs of both artistic and industrial users. As combustion and burner experts, Carlisle has worked closely with manufacturing engineers to provide robust process solutions while maintaining cost effectiveness.

Our Automation Division specializes in, the glass and plastics industries. Customized automated flaming conveyors for flame treating and deflashing of plastic containers are the largest portion of this division.

Our Custom Machining Division includes a full service job shop with the facilities and abilities to meet your custom fabrication and machining needs. From simplistic parts to larger complex multifaceted assemblies, we can handle jobs of varying scope and size.

Starting Fall 2005, the Carlisle School of Glass Art will open offering flame-working classes to artists of all skill levels. Classes in both hard and soft glass are available; class topics include how to make beads, buttons, marbles, pendants & vessels.

With a new torch, the Carlisle Optimizer is \$242. Retrofits also available.

To find out more about the Optimizer or other Carlisle products, call 1-800-922-1167.

Optimizer - Achieve powerful results!

Designed to overcome rising glassworking production costs, the Carlisle Optimizer precisely premixes compressed air with the fuel gases to an "optimized" mix. By allowing the operator to use compressed air to change the flame qualities of the Carlisle CC burner series, the Optimizer produces many powerful and versatile results.

Cool down your flame enough to work with virtually any color without encasing it. The Optimizer enables you to work with dichroic glass with ease as well as soft glass. Its air valves are practically a temperature control for the flame!

You will gain incredible heat soaking properties because of the nitrogen present in the compressed air. Nitrogen soaks up heat and cools down the flame, but also penetrates the glass more efficiently, allowing for the center of a gather to become hotter faster.

With the Optimizer, you will use less oxygen and save money!

Increase the life of your torch by minimizing carbon build-up and keeping your torch cooler



CC Ball & Post with Optimizer

because of the Optimizer compressed air flow.

Most importantly! The Optimizer is an option. Turn off all the air flow and you will have the aggressive, biting flame for which Carlisle is known. Add the air back in with the Optimizer, and get a softer flame that treats your glass with ease.

"When I fume gold into the glass, I use the CC center-fire without the air from the Optimizer. Once I get the gold right where I want it, I turn on the Optimizer and then the flame can't affect my fuming. I don't even have to encase it."

Josh Mazet, Mazet Studios

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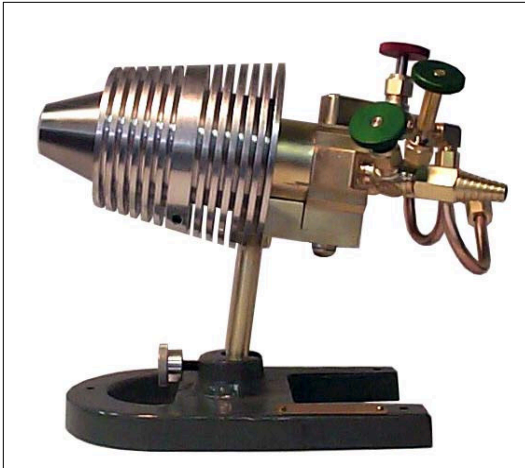
CATALOG NUMBER	OPTIONS AND ACCESSORIES
10A003-0000	CC Burner Heat Exchanger
10A008-0000	CC Burner Outer Gas Valve
10A009-0000	CC Burner Inner Gas Valve
10A010-0000	CC Burner Outer Oxygen Valve
10A011-0000	CC Burner Inner Oxygen Valve
10A012-0000	CC Burner Gas Crossover
10A013-0000	CC Burner Oxygen Crossover
10A014-0000	CC Burner Valve Kit
10A015-0000	CC Series Lathe Attachment
10A016-5000	CC Burner SS Outer Casing
10A019-0000	CC Series Independent Pilot
10A050-0000	CC Burner Water Cooling Option
10A051-0000	CC Burner Coiled Water Cool
10A050-1000	CC Burner Chiller 2.0 Option
10A050-2000	CC "Plus" Burner Chiller 2.0 Option
16F001-0000	CC Burner RMB (Propane)
16F002-0000	CC Burner RMB (Natural Gas)
10A103-0000	CC "Plus" Burner Heat Exchanger
10A108-0000	CC "Plus" Burner Outer Gas Valve

CATALOG NUMBER	OPTIONS AND ACCESSORIES
10A109-0000	CC "Plus" Burner Inner Gas Valve
10A110-0000	CC "Plus" Burner Outer Oxygen Valve
10A111-0000	CC "Plus" Burner Inner Oxygen Valve
10A112-0000	CC "Plus" Burner Gas Crossover
10A113-0000	CC "Plus" Burner Oxygen Crossover
10A114-0000	CC "Plus" Burner Valve Kit
10A116-5000	CC "Plus" Burner SS Outer Casing
10A150-0000	CC "Plus" Burner Water Cooling Option
10A151-0000	CC "Plus" Coiled Water Cool
28A001-0000	CC Burner EL-2
28A003-0000	CC "Plus" Burner EL-2
10A018-1000	CC Burner New Style Base Only
10A020-0000	CC Burner Rack & Pinion Assembly
10A021-0000	CC Burner Ball & Post Repair Kit
10A901-0000	CC Series Gas Optimizer

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CC "PLUS" BURNER RP MODEL



CC "Plus" Burner RP Model
with #5 Centerfire Tip Ball & Post
10A024-0000

HOW TO ORDER

MODEL
NUMBER

INLET TYPE
0 = ADAPTERS
1 = WELDING
2 = JIC

1 0 A 2 0 0 - 0 0 0 0

OF INLETS
0 = 2 INLETS
1 = 4 INLETS

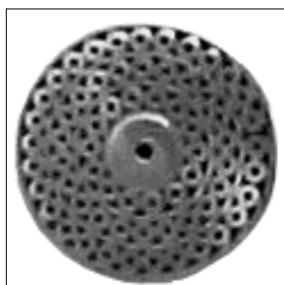
Example: A CC "Plus" RP for Hydrogen with Ball & Post Mount, four inlets, and JIC hose connections would be:

1 0 A 2 0 2 - 1 2 0 0

The CC "Plus" Burner RP Model is a product that came about by the suggestions of Roger Parramore, an artistic glassworker. The RP Model is a modified version of the standard CC "Plus" Burner. The modifications include a stainless steel outer casing that replaces the standard brass and, a change in the heat exchanger. The stainless steel outer casing reflects heat, reducing the build up of heat in the burner. The stainless steel outer casing also has a more tapered head that gives it less of a surface area to absorb heat and allows the operator to work more closely to the burner tip.

The suggestions that we received from Roger Parramore helped us to create the new heat exchanger style. This tapered heat exchanger was first offered on the RP Model and has since become a standard for the CC "Plus" Series. By tapering the heat exchanger, it allows for more room to work with the piece without the user placing their hands too close to the heat exchanger. The heat exchanger is also knotted to sit further back on the nozzle. Additionally, all standard models have stainless steel separator rings instead of brass.

The RP Model is available with all of the options and accessories of the standard CC "Plus" Series.



Face of CC "Plus"
Burner RP Model

BURNER ASSEMBLIES	MODEL NUMBER
#5 Centerfire Tip Burner with Ball & Post	01
#5 Centerfire Tip Burner with Rack & Pinion	24
#3 Centerfire Tip Burner with Ball & Post	52
#3 Centerfire Tip Burner with Rack & Pinion	53
Hydrogen Burner with Ball & Post	02
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