



K6C Summit Multi Oil Warm Air Furnace

SAVE THESE AND BURNER INSTRUCTIONS FOR REFERENCE



HOMEOWNER—AIR FILTERS

To maintain furnace performance and safety, replace dirty filters as required or at least once every heating season. Use new approved disposable filters of the same size, or clean permanent filters according to manufacturers instructions. Replace the filters or clean the filter more often if dusty conditions exist. Dirty, clogged or wrongly sized filters will impair the furnace performance and may cause the furnace to shut down or overheat.

HOMEOWNER — REGULAR MAINTENANCE

Have qualified technician check complete furnace operation at least once a year.

NEVER BURN GARBAGE OR PAPER IN THE UNIT AND NEVER STORE COMBUSTIBLE MATERIAL AROUND IT.

DO NOT ATTEMPT TO START BURNER WHEN EXCESS OIL HAS ACCUMULATED, WHEN UNIT IS FULL OF VAPOUR, OR WHEN HEAT EXCHANGER IS VERY HOT.

DO NOT USE GASOLINE, CRANKCASE DRAININGS OR ANY OIL CONTAINING GASOLINE.

HOMEOWNER—SHUTTING FURNACE DOWN

POWER OFF Turn off main power switch

FUEL OFF Shut off manual fuel supply valve

ALWAYS KEEP MANUAL FUEL SUPPLY VALVE SHUT OFF IF THE BURNER IS SHUT DOWN FOR AN EXTENDED PERIOD OF TIME.

Installed by: _____

Address: _____

Telephone: _____ **Date:** _____

IMPORTANT

Read this instruction sheet thoroughly before installing furnace or starting burner. Consult local authorities about your local Fire Safety Regulations. All installations must be in accordance with local state or provincial codes. Improper installation will result in voiding of warranty.

CAUTION

DO NOT START THE BURNER UNTIL ALL FITTINGS, COVERS AND DOORS ARE IN PLACE. DO NOT TAMPER WITH THE FURNACE OR CONTROLS, CALL A QUALIFIED BURNER TECHNICIAN. FOR YOUR SAFETY: Do not store or use gasoline or other flammable vapors and liquid in the vicinity of this or any other appliance.

INSTALLATION CODES

INSTALLATION MUST COMPLY WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, and the Installation Code for Oil Burning Equipment (USA NFPA31, or Canada CSA B139) and the USA National Electrical Code NFPA 70 or the Canadian Electrical Code. For chimney and ductwork (NFPA 90A/B) see required codes. Certified to CSA and UL requirements. Use only nozzles and settings shown on the appliance label. Use approved fittings, tubing, fuel tank, oil shut off valves etc.

MULTI-POSITION

The Summit Multi is designed to operate in the conventional upflow mode, or in horizontal mode. The breech is convertible from front to rear by switching the breech pipe and cover plates. The burner is always installed in an upright position by four nuts.

PLACEMENT, VENTING, VENTILATION

Furnace installation should conform to the required installation code for oil-fired equipment (USA: NFPA 31, Canada: CSA B139)

UPFLOW If required, support furnace on 4 concrete blocks. Make sure each corner of furnace base is supported. For a furnace installed on a combustible floor, ensure that the requirements of the authorities having jurisdiction are satisfied. Floor must be strong enough to carry the weight of the furnace.

HOMEOWNER — DIRECT VENT

It is the responsibility of the homeowner to ensure that the area around the Direct Vent Terminal and air intake is free of snow, ice, and debris.

HOMEOWNER—RESTARTING FURNACE

Follow this procedure before restarting a unit that has been shut down for an extended period of time.

INSPECTION Have the furnace/system serviced and inspected by a qualified technician.

CHECK Furnace/system has not been tampered with.

FUEL ON & CHECK Turn on fuel supply and check that there are no leaks.

POWER ON & CHECK Turn on power switch and check that the furnace starts and operates as usual.

CHECK If the furnace/system fails to operate or operates in an unusual manner, call your service technician.

OPERATION: If the burner fails to operate at any time, call a qualified burner technician.

HORIZONTAL In suspended horizontal positions use the eyebolts provided. For installations where the furnace will be supported from below, use 4" long 3/8" UNC bolts as adjustable legs.

CLEARANCES Before placing unit, review installation clearances as shown on furnace settings label.

LOCATION Install the furnace close to chimney or vent and central to ductwork.

BREECH Move the breech pipe to the rear if rear breech is required.

CHIMNEY/VENT Connect the furnace to a chimney/vent system of size and condition required by the Installation Code. FURNACE IS APPROVED FOR FACTORY BUILT CHIMNEY TYPE "A" OR TYPE "L" VENT. See furnace marking label for approved vent/flue pipe sizes. MAXIMUM FLUE GAS TEMPERATURE IS 575°F.

THROUGH the WALL VENTING Furnace is approved for Kerr Direct Vent

COMBUSTION & VENTILATION AIR Install openings and ductwork to the furnace room to provide fresh outside combustion air and circulation air for cooling the furnace casing as installation code requires (USA: NFPA 31, Canada: CSA B139). If installed in a closed room provide two free air ventilation openings of at least 8" x 12" free flow area near ceiling and floor. Oil burners must have sufficient air to allow vent systems to operate properly. See furnace operating label. Not applicable to Direct Vent.

CERTIFIED TO CONFORMS TO CAN/CSA Std. B140.0 Std. B140.4 UL 727

INSTALLATION

Return Air Plenum

The return air filter assembly is inter-changeable with the left or right side panel, and also with the base pan depending upon the furnace operating position. An optional painted side panel is available to replace the unpainted base pan if requested. Please contact your local Kerr dealer.

ELECTRICAL

Wire according to the National Electrical Code (Canadian Electrical Code in Canada) or local codes. Use a separately fused #12 electrical line directly from the service panel to the furnace junction box. Install a manual shut off switch at the door or stairway to furnace room so furnace can be shut off remotely.

VENT PIPE

See NFPA 31 (USA) or CSA B139 (Canada) code. Breech is certified for 5" vent pipe. Keep vent/flue pipe as short as possible with min. 1/4" per foot upward slope. Use approved fitting through a wall. Vent/flue pipe MUST NOT pass through a ceiling.

BREECH

The breech is convertible from front to rear by switching the breech pipe and cover panels.

DRAFT CONTROL

Use approved control supplied for 5" pipe. Use two draft controls on strong draft chimneys. Set specified draft pressure to $-0.04"$ wc. The above is not applicable to Direct Vent installations.

ASSEMBLE and INSTALL BURNER

ASSEMBLE BURNER

Check burner model is correct for furnace rating required. Assemble as per burner manufacturer's instructions.

SET END CONE

BECKETT AFG — Use low firing rate baffle with 0.65 nozzle and lower- see instructions
RIELLO— Set turbulator on furnace settings label

SELECT NOZZLE

Select oil input, nozzle required and burner configuration as shown on furnace label settings.

INSTALL NOZZLE

Install selected nozzle, check for clean seating and tighten in nozzle adaptor.

CHECK ELECTRODES

See burner instructions for correct setting.

INSERTION LGTH

See diagram and specifications on this sheet.

MOUNT BURNER

Tighten top nut first so burner tips down slightly. The burner is always installed in an upright position by four nuts.

PUMP BY-PASS PLUG

For one pipe system BECKETT, and RIELLO as factory setting (no plug).

COMPLETE WIRING

Refer to wiring diagram or furnace label for correct burner connections.

THERMOSTAT

Connect thermostat terminals.

CHANGING NOZZLE

NOZZLE CHANGE

If a new nozzle of a different size is installed, change the heating blower speed according to the specifications table.

SET BURNER FOR EFFICIENT OPERATION

SET END CONE

BECKETT MB air tube with L1 head
RIELLO Set turbulator to furnace label settings.

PUMP PRESSURE

BECKETT 140 psi. Check settings label.
RIELLO 150 psi. Check settings label.

BURNER AIR

BECKETT AFG—Set as burner manual, use low firing rate baffle with 0.65 nozzle and lower.
RIELLO—Set air damper as settings on label.

SAMPLING HOLE (Non Direct Vent Only)

On smoke/vent pipe, between appliance breech and draft control, punch or drill a 1/4" round opening. Not applicable to Direct Vent.

DRAFT PRESSURE (Non Direct Vent Only)

Using an accurate draft meter, adjust the draft control to obtain $-0.04"$ wc draft pressure at the breech sampling hole.
Use two barometers if necessary.

DO NOT start burner until all fittings and covers are in place.

BURNER SETTING

Set the burner to give a stable symmetrical flame
After 15 minutes of normal operation, check SMOKE for #0- trace reading and measure CO₂ Read just the burner controls as required.

EFFICIENCY

Always leave burner set with CO₂ reading about 1% of CO₂ lower than the peak efficiency achieved with a #0- trace smoke (eg a #0-trace reading of 12.5% CO₂ should be set back 1% to 11.5%). This gives better allowance for fuel and draft variations and maintains a better seasonal efficiency. When the burner is set, lock the adjustments with the locking nuts.

Always set flame with proper draft, smoke and CO₂ measurements.

FLAME CHECK

Look through view port to check the flame after setting the burner. If the flame is not clean and symmetrical, *reset the burner or replace the nozzle*—use only nozzle types specified on settings label.

BLOWER SETTINGS

Ensure power is off when adjusting blower setting

For heating, use the blower speeds shown on the furnace specifications to give a rise of 70 - 85°F. The #4 Lo blower speed can be used for air circulation when neither heating or cooling are required. Set blower speeds to match the installation requirements.

HUMIDIFIER-Furnace

If a humidifier is installed ensure that no water can drip or run from it into the furnace. This would cause deterioration and void the furnace warranty.

THERMOSTAT ANTICIPATOR SETTING

0.2 amps for any burner. Check that the thermostat anticipator setting matches the primary control circuit current draw. This setting affects the thermostat's response to the control.

FAN CONTROL

LIMIT 200°F - Factory set
FAN ON 130°F
FAN OFF 100°F

COMFORT ADJUSTMENTS

- Outlet air is *initially* too hot or too cold - adjust the fan on setting.
- Outlet air *consistently* too warm or too cold - change the blower motor speed to give the specified air temperature rise (70 - 85°F).
- Blower motor shuts off and the oil burner keeps going - the fan on setting is set too low or the inlet air is below 50°F.
- Outlet air gets too *hot* and burner shuts down - increase air by changing the blower motor speed to give the specified temperature rise (70-85°F)
- Outlet air is *too cold or too hot* at the end of the heating cycle after the burner has turned off -adjust the *fan off* time higher or lower.

OFF CYCLE AIR CIRCULATION

#4 LO SPEED All furnace models have the #4 Lo speed switch for optional constant off cycle air circulation.

REGULAR MAINTENANCE AND CLEANING

Check complete operation at least *once* a year. In Canada see B139, Section 14, Maintenance, for recommended servicing procedure. Heat exchanger ducts are accessed through access panel at front of unit. Clean flue pipes on a regular basis. Replace flue pipes if there is any sign of corrosion or other problem.

TROUBLESHOOTING GUIDE

Furnace will not start

Blown fuse Repair with new fuse
No oil Call oil supplier

Oil burner keeps turning off

Dirty air filter Change air filter
Restricted air supply Check all air return/supply registers
Limit control Check blower motor speed. Speed blower up
Motor over heating Check motor speed correct for nozzle on furnace label settings.
Dirty nozzle Call mechanic to replace nozzle.

Sooty flame

Wrong pump pressure Increase pressure to correct setting.
Dirty nozzle Replace nozzle.
Improper burner air setting Increase burner air- see *BURNER SETTING*.
Barometric draft wrong Adjust barometric regulator for $-0.04"$ wc draft pressure at breech

Using too much oil

Oil leak in line or tank Check fittings for tightness. Inspect tank and replace if necessary.
 Draft regulator set high Adjust regulator for $-0.04"$ wc draft pressure at breech.
 Nozzle too large Replace nozzle to lower input.

Burner reset cuts out

No oil Call oil supplier.
 Frozen oil line Call technician or oil supplier.
 Dirty oil filter Replace filter
 Dirty nozzle, smoky fire Replace nozzle, adjust burner air.
 Faulty oil pump Have pump replaced, adjust burner air.
 Faulty or dirty electrodes Have technician clean or replace.

Warm air register blowing cold air

Circulation fan switch is on Switch off blower circulation fan switch
 "FAN OFF" setting is high Fan control Set "FAN OFF" lower.
 Basement cooling ducts Insulate ductwork to maintain duct temperature.
 Motor speed set too high Reset motor speed to slow blower.

All rooms at different temperatures

Supply air not regulated Adjust warm air regulators to suit each room.

Noisy Operation

Loose blower wheel Tighten wheel set screw or replace.
 Damaged motor bearings Replace blower motor.
 Faulty oil pump Repair or replace oil pump. Reset to correct pressure.
 Air leak in oil line Tighten all connections.

Warm air registers blowing too hot

Blower running slow Speed blower up by rewiring to higher speed
 Make sure blower motor current is within motor rating.
 Return air restricted Open up return air duct work to ensure adequate air flow.

OIL TANKS AND PIPING

Tank installation should conform to local requirements

Install according to code. Minimize number of connections in suction line and make all connections as tight as possible. Use a good pipe joint compound for oil on all pipe threads. To reduce possibility of air leaks, tighten stem packing gland nut on any valves installed in the suction line. Also, be sure the oil filter is tight, as filter gaskets often shrink. Check for kinks in the oil lines as well as for possible air pockets and for loose connections.

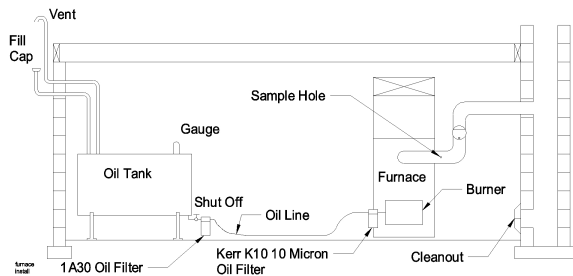
ONE PIPE SYSTEM

Where the tank is above the burner and when the oil flows by gravity to the oil pump, a single-stage fuel unit with a single oil line to the pump may be used.

TWO PIPE SYSTEM

When single line is unsuitable, use double line or see your KERR dealer for special oil line fittings.

Install tank system to code requirements



See your KERR dealer for information on tank system

Always use a good quality 10 micron oil filter such as Kerr K10.

Install appliance in accordance with Installation Codes (USA NFPA 31 or Canada CSA B139) and local regulations.

Oil filter appliances shall be connected to flue or vents having sufficient draft at all times to ensure safe and efficient operation of the appliance.

BLOWER REMOVAL PROCEDURE

Use a reversing drill with 1/4 inch hex drive for the sheet metal screws.

The KERR K6C SUMMIT has a quick release blower suspension system which is designed to be tight and rattle free.

1. Disconnect power.
2. Remove front panel to blower compartment.
3. Remove the screw (s) from the blower key. (Fig. 1)
4. Remove the blower key and slide the blower towards the burner. (Fig. 2)

Replace the blower assembly using the reverse procedure.

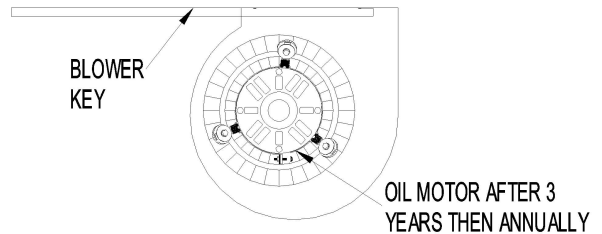


FIG. 1

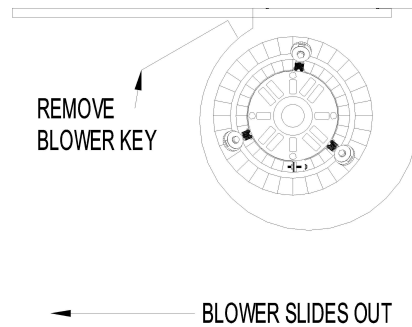
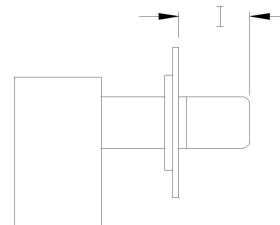


FIG. 2



BURNER INSERTION (I)

	in	mm
BECKETT	2 1/2	63
RIELLO	2 1/2	63
CARLIN	2 1/2	63

SETTINGS – K6C SUMMIT - MULTI OIL FURNACE

Model	Burner	Input		Nozzle		Pump (psi)	Air Setting	Turbulator	Output		Blower	Motor	Heating cfm@		Blower Speed	
		USGPH	L/h						Btu/h	kW			0.2"wc	0.5"wc	0.2"wc	0.5"wc
K6CG-120(A3)	Beckett AFG PA402	0.71	2.69	0.60	60A*	140	8.0/0.0*		83,000	24	GT 10-10	1/2 hp	1100	1030	4	4
		0.77	2.91	0.65	60A*		7.5/1.0*		90,000	26			1100	1160	4	3
		0.89	3.36	0.75	60A		8.0/0.0		104,000	30			1270	1270	3	2
		1.01	3.81	0.85	60A		7.0/1.0		118,000	35			1390	1345	2	1
K6CC-120(A3)	Carlin EZ-1HP	0.92	3.48	0.75	60A	150	0.85	.60/.65	107,000	31	GT 10-10	1/2 hp	1270	1270	3	2
		1.04	3.94	0.85	60A		1.00	0.75	122,000	36			1390	1345	2	1
K6CE-110(A3)	Riello 40 F3	0.73	2.78	0.60	80W	150	4.1	1.0	86,000	25	GT 10-10	1/2 hp	1100	1160	4	3
		0.92	3.48	0.75	60W		5.0	3.0	107,000	31			1270	1270	3	2
K6CE-120(A3)	Riello 40 F5	0.92	3.48	0.75	60W	150	3.2	1.0	107,000	31	GT 10-10	1/2 hp	1270	1270	3	2
		1.04	3.94	0.85	60W		3.4	2.0	122,000	36			1390	1345	2	1
K6CV-090(A3)	Riello 40 BF3***	0.73	2.78	0.60	70B**	150	6.0	1	86,000	25	GT 10-10	1/2 hp	1100	1160	4	3
K6CV-120(A3)	Riello 40 BF5***	0.92	3.48	0.75	70B	150	4.5	1.5	107,000	31	GT 10-10	1/2 hp	1270	1270	3	2
		1.04	3.94	0.85	60W		5.0	2.0	122,000	36			1390	1345	2	1
K6CD-120(A3)	Beckett AFG PA404***	0.71	2.69	0.60	60B	140	80*	****	83,000	24	GT 10-10	1/2 hp	1100	1030	4	4
		0.77	2.91	0.65	60B		110*		90,000	26			1100	1160	4	3
		0.89	3.36	0.75	60B		50.0		104,000	30			1270	1270	3	2
		1.01	3.81	0.85	60B		70.0		118,000	35			1390	1345	2	1
K6CG-120(A5)	Beckett AFG PA402	0.89	3.36	0.75	60A	140	8.0/0.0		104,000	30	GT 12-10	3/4 hp	1390	1330	4	4
		1.01	3.81	0.85	60A		7.0/1.0		118,000	35			1390	1330	4	3
K6CC-120(A5)	Carlin EZ-1HP	0.92	3.48	0.75	60A	150	0.85	.60/.65	107,000	31	GT 12-10	3/4 hp	1390	1330	4	4
		1.04	3.48	0.85	60A		1.00	0.75	122,000	36			1390	1630	4	3
K6CE-160(A5)	Riello 40 F5	0.92	3.48	0.75	60W	150	3.2	1.0	107,000	31	GT 12-10	3/4 hp	1390	1330	4	4
		1.04	3.48	0.85	60W		3.3	2.0	122,000	36			1390	1630	4	3
		1.22	3.48	1.00	60W		3.4	2.5	143,000	42			1560	1770	3	2
		1.35	3.48	1.10	60W		4.0	3.5	157,000	46			1690	2000	2	1
K6CV-145(A5)	Riello 40 BF5***	0.92	3.48	0.75	70B	150	4.5	1.5	107,000	31	GT 12-10	3/4 hp	1390	1330	4	4
		1.04	3.48	0.85	60W		5.0	2.0	122,000	36			1390	1630	4	3
K6CD-120(A5)	Beckett AFG PA404***	0.89	3.48	0.75	60B	140	50	0.0	104,000	30	GT 12-10	3/4 hp	1390	1330	4	4
		1.01	3.48	0.85	60B		70	0.0	118,000	35			1390	1630	4	3

* Low firing rate baffle required
 ** Use Hago 70B Nozzle
 *** Direct Vent Models
 **** Use Air Boot Flow Restrictor
 Beckett: Air Shutter/Air Band
 Burner Insertion: 2-1/2" (63mm)

Set flame to #0-1 smoke after CO₂ test.
 Use turbulator and air settings as guide

For 4 Ton AC use Blower Speed 2 (Blue Wire) with ¾ hp motor (1600 cfm)
 For 5 Ton AC use Blower Speed 1 (Black Wire) with ¾ hp motor (2000 cfm)

CLEARANCE TO COMBUSTIBLES

Top	1"
Front	24"
Rear	24"
Side (access)	6" (24")
Flue Pipe	9"
Floor	Non-combustible

DRAFT PRESSURE

(not applicable to Direct Vent)

Breach draft pressure	-0.04"wc
Overfire draft pressure	-0.01"wc

BURNER INSERTION (overall)	in	mm
	2.5"	63

Motor/Blower	½ hp 4 Speed/GT 10-10
	¾hp 4 Speed/GT 12-10

AIR/BLOWER DATA – see table above

External static—standard model	0.2"wc
External Static – A/C models	0.5"wc
Maximum air temperature rise	85°F
High limit, max design outlet temp	200°F
Thermostat anticipator	0.2 amps

AIR FILTERS

All models (Pleated) 20"x25"x2"

FAN/HIGH LIMIT CONTROL

Honeywell L6064

CLEANOUTS

Smoke pipe cover, Burner opening

SMOKE/VENT PIPE 5"

Fuel not heavier than No. 2 furnace oil.

DIMENSIONS in mm

Depth	25"	635
Height	52½"	1333
Width	22"	559

PLENUM DIMENSIONS

Cold air return	19" x 20½"	483x521
Hot air supply	23¾" x 20½"	603x521

OPENING HEIGHTS from floor

Burner c/I	27½"	699
Smoke pipe c/I	44½"	1130

ELECTRICAL – 120 Volts, 60Hz

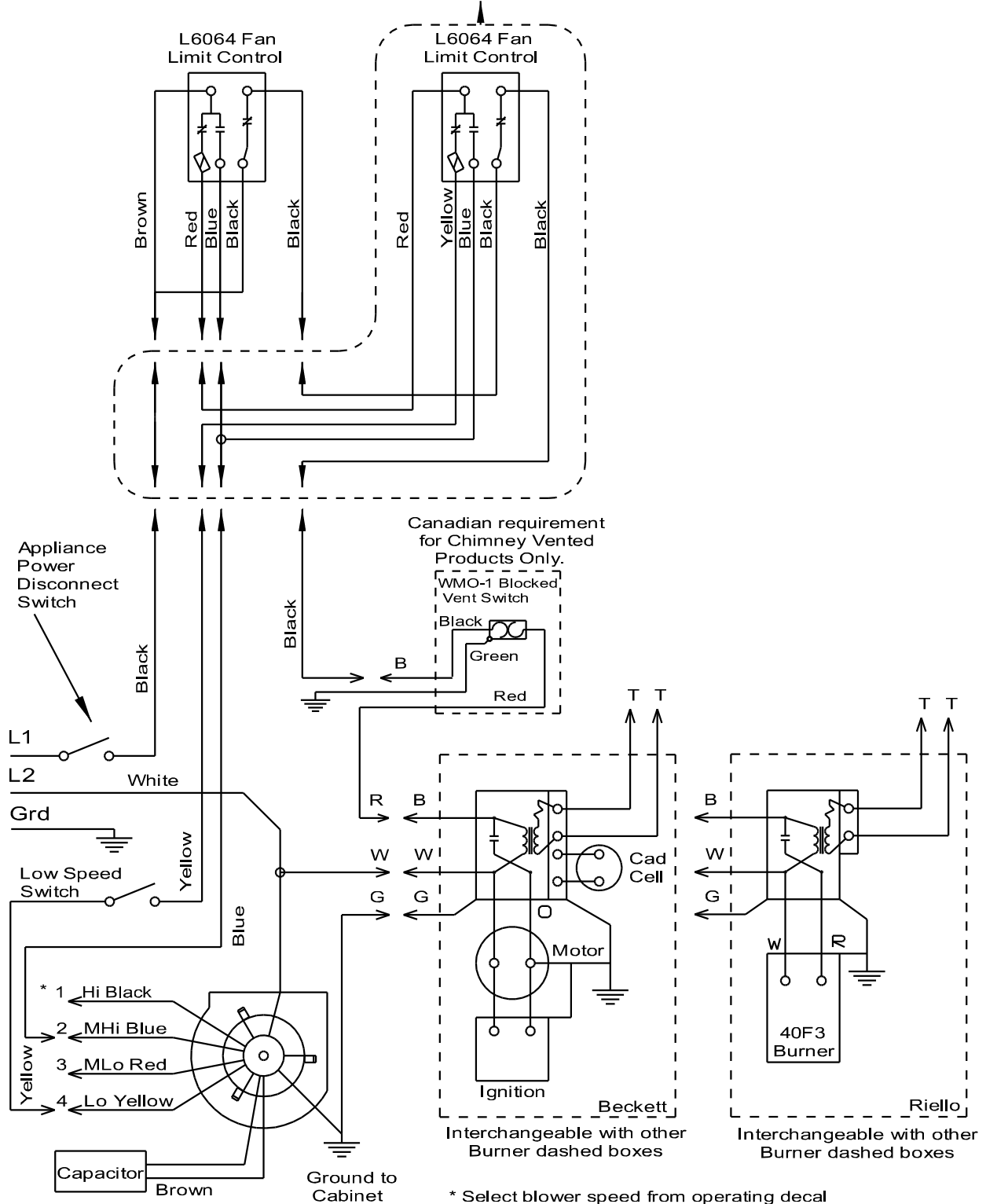
Canada	less than 14 amps
USA	13 amp, circuit protection 20 amps

NON AC Models

(USE COPPER CONDUCTORS ONLY)

HIGHBOY NON AC
SC 1.24 FEB/06

For K6 Summit - Horizontal Wiring Kit (K6C-KA-0100-00)
For K4C Compact - Downflow & Horizontal Wiring Kit (K4C-KA-0200-00)



* Select blower speed from operating decal

AC Models

(USE COPPER CONDUCTORS ONLY)

HIGHBOY AC
SC1.24 FEB/06

For K6 Summit - Horizontal Wiring Kit (K6C-KA-0100-00)
For K4C Compact - Downflow & Horizontal Wiring Kit (K4C-KA-0200-00)

