

**RETROFIT APPLICATIONS ONLY**

If this burner is being installed in a packaged unit (ie. burner comes with a boiler or furnace), follow the installation and set-up instructions supplied with the heating unit, as settings may differ from those shown in this manual.

- *The following pages contain information, descriptions and diagrams for the proper installation and wiring of the burner. Please read carefully before attempting final installation.*
- *This manual is to remain with the final installation designation. It is the installer's responsibility to ensure that the burner installation and operation instructions mentioned in this manual are followed and operated within local code authority limits.*

RIELLO 40

MODEL	TYPE
F3 WITH MANUAL AIR SHUTTER	261T
F5 WITH MANUAL AIR SHUTTER	262T
F3 WITH HYDRAULIC JACK (OPTION)	261T
F5 WITH HYDRAULIC JACK (OPTION)	262T



INSTALLATION PRECAUTIONS

AIR FOR COMBUSTION

Do not install burner in room with insufficient air for combustion. Be sure there is an adequate air supply for combustion if the boiler/furnace room is enclosed. It may be necessary to create a window to permit sufficient air to enter the boiler/furnace room. The installer must follow local ordinances in this regard.

CANADA It is suggested that the installer follow CSA standard B139.

USA It is suggested that the installer follow NFPA manual #31.

CHIMNEY

Be sure chimney is sufficient to handle the exhaust gases. It is recommended that only the burner be connected to the chimney. Be sure that it is clean and clear of obstructions.

OIL FILTER

An external oil filter is **REQUIRED**, even though there is an internal strainer in the pump. The filter should be replaced at least once a year, and the filter container should be thoroughly cleaned prior to installing a new filter cartridge.

DRAFT

Follow the instructions furnished with the heating appliance. The pressure in the combustion area should be kept as close to zero as possible. The burner will operate with a slight draft or pressure in the chamber.

ELECTRICAL CONNECTIONS

CANADA All electrical connections should be done in accordance with the C.E.C. Part 1, and all local codes. The system should be grounded.

USA All electrical connections should be done in accordance with the National Electrical Code, and all local ordinances. The system should be grounded.

CONTROL BURNER OPERATION

Check out the burner and explain its operation to the homeowner. Be sure to leave the Owner's Instruction sheet with the homeowner.

FIRE EXTINGUISHER

If required by local codes, install an approved fire extinguisher.

ELECTRICAL CONNECTIONS

In most localities, a number 14 wire should be used inside a metal conduit. The system should be grounded. A service switch should be placed close to the burner on a fireproof wall in an easily accessible location.



The burner settings used in this manual were obtained under laboratory conditions and may vary from those obtained in the actual installation of the burner. Combustion results must be verified using proper combustion test equipment. Riello will not be responsible for the improper installation or set-up of the appliance.

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PACKAGE CONTENTS LIST

Your Riello 40 burner should include the following parts. Please check to make sure all parts are present before beginning the installation.

Quantity	Description
1	Burner chassis with cover
1	Universal mounting flange + mounting gasket
1	Parts bag
1	Parts bag
1	Installation manual
1	Separate carton - OEM burners shipped with combustion head mounted
1	Combustion Head

Parts bag

Quantity	Description
1	By-pass plug
1	Female 1/4" NPT adapter
1	Male 3/8" NPT adapter
1	2.5 mm Allen key
1	Oil pump connector (supply)
1	Oil pump connector (return)

Parts bag

Quantity	Description
2	Semi-flange bolts (long)
2	Semi-flanges
2	Mounting flange bolts (short)
4	Nuts
2	Chrome nuts
2	Cover screws

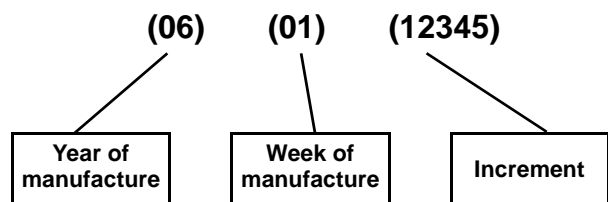
SERIAL NUMBER IDENTIFICATION

Your Riello burner may have been manufactured in more than one location and therefore there are two possible serial number identification.

The Riello 9 character serial number, example,

06 01 12345, is identified as follows:

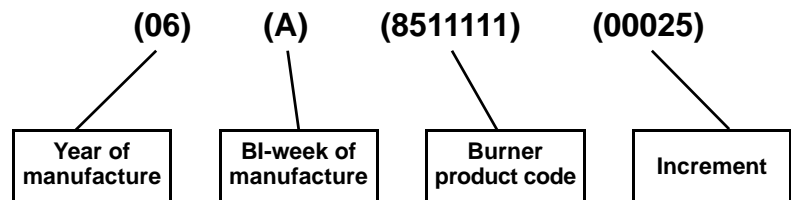
- 06** = Last two digits of the year of manufacture;
- 01** = Week of manufacture;
- 12345** = Increment of 1 for each burner produced – specific to product code – reset to zero each January 1st.



The Riello 15 character serial number, example,

06 A 8511111 00025, is identified as follows:

- 06** = Last two digits of the year of manufacture;
- A** = BI-week of manufacture;
- 8511111** = Burner product code;
- 00025** = Increment of 1 for each burner produced – specific to product code – reset to zero each January 1st.



TECHNICAL DATA SPECIFICATIONS

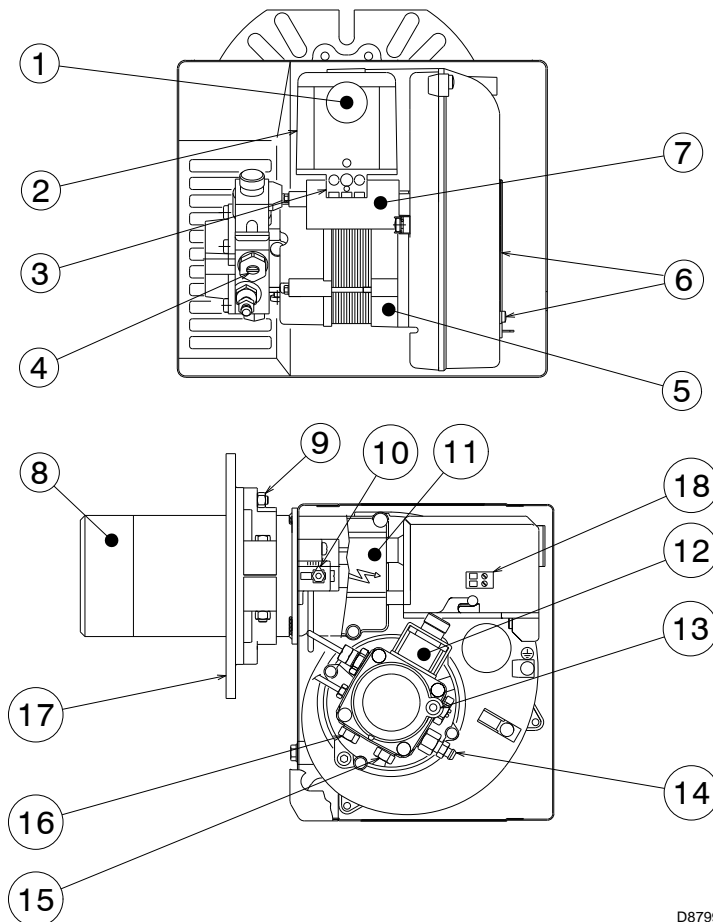
Fuel	No. 2 Fuel Oil
F3 Firing rate - Effective Output	0.50 to 0.95 US GPH - 70,000 to 133,000 BTU/h
F5 Firing rate - Effective Output	0.75 to 1.65 US GPH - 105,000 to 231,000 BTU/h
Voltage (single phase)	230v 50 Hz
F3 Absorbed electrical power	175 Watts
F5 Absorbed electrical power	264 Watts
Motor (rated)	2800 rpm Run Current 0.8 AMP
Capacitor	12.5 Microfarads
Pump pressure	130 to 200 psig
Primary control	RIELLO 530 SE/C - RIELLO 530 SE/C 24V
Ignition transformer	8kV 16mA

BURNER AND MOUNTING FLANGE DIMENSIONS

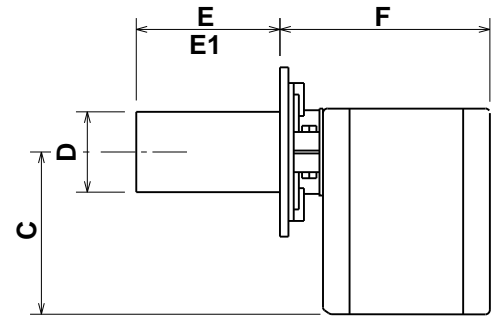
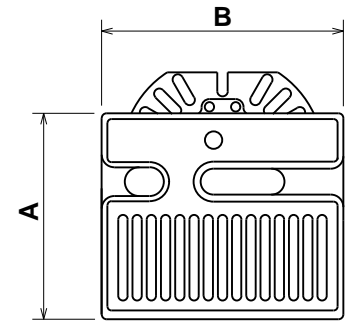
Model		A	B	C	D	E	F
F3	Inches	8 15/32	9 59/64	6 15/32	3 1/2	6	8 29/32
	mm	215	252	164	89	152	226
F5	Inches	9 11/64	10 11/16	7 3/32	3 1/2	6	9 13/32
	mm	233	272	180	89	152	239

E1: 10-inch long (254mm) tubes are also available.

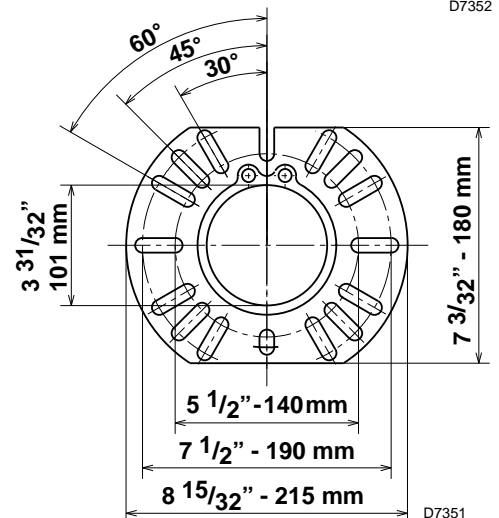
BURNER COMPONENTS IDENTIFICATION



D8799



D7352



D7351

BURNER COMPONENTS

- 1 Lockout indicator lamp and reset button
- 2 Primary control
- 3 Primary control sub-base
- 4 Pump pressure regulator
- 5 Motor
- 6 Air adjustment fixing screws
- 7 Capacitor
- 8 Combustion Head
- 9 Semi Flange
- 10 Turbulator adjustment screw
- 11 Air tube cover
- 12 Coil
- 13 Vacuum gauge port
- 14 Pressure gauge and bleeder port
- 15 Return fuel line port
- 16 Supply fuel line port
- 17 Mounting flange with gasket
- 18 24V thermostat connections (only 530 SE/C 24V)

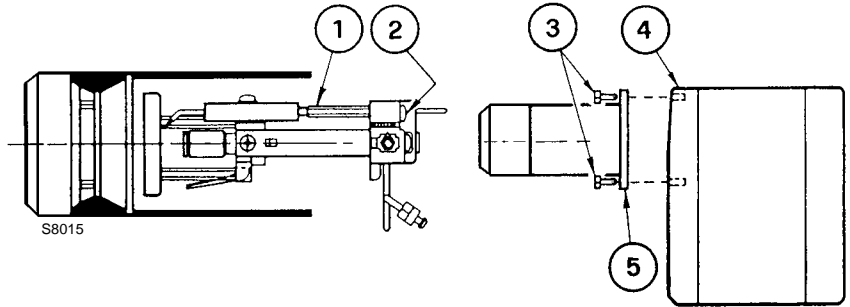
INITIAL SET-UP

- A) Remove burner and air tube from cartons. Check parts list (inside cover) to ensure all parts are present.
- B) Remove burner cover by loosening the three screws securing it. Remove control box and air tube cover.
- C) Remove drawer assembly from air tube, insert nozzle and set Turbulator adjustment for specific input required, then set aside.
- D) Mount air tube to burner chassis.

ASSEMBLY OF AIR TUBE TO BURNER CHASSIS

The air tube and drawer assembly are shipped in a carton separate from the burner chassis. Choose the proper air tube length to obtain the tube insertion for the specific installation.

- A) Remove the AIR TUBE and BURNER CHASSIS from their respective cartons.
- B) Remove the DRAWER ASSEMBLY (1) from inside the AIR TUBE by loosening the screw (2).



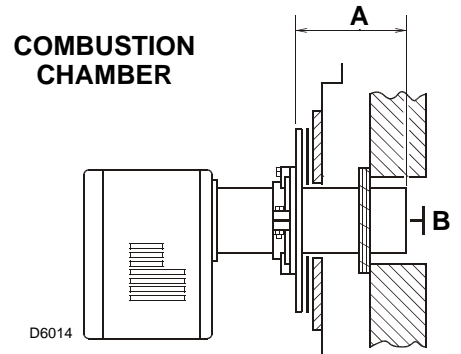
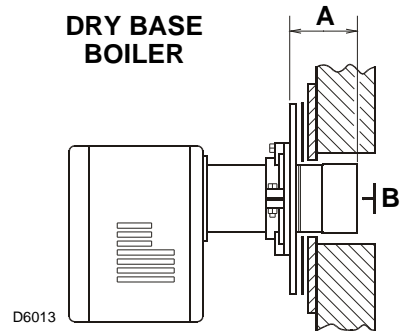
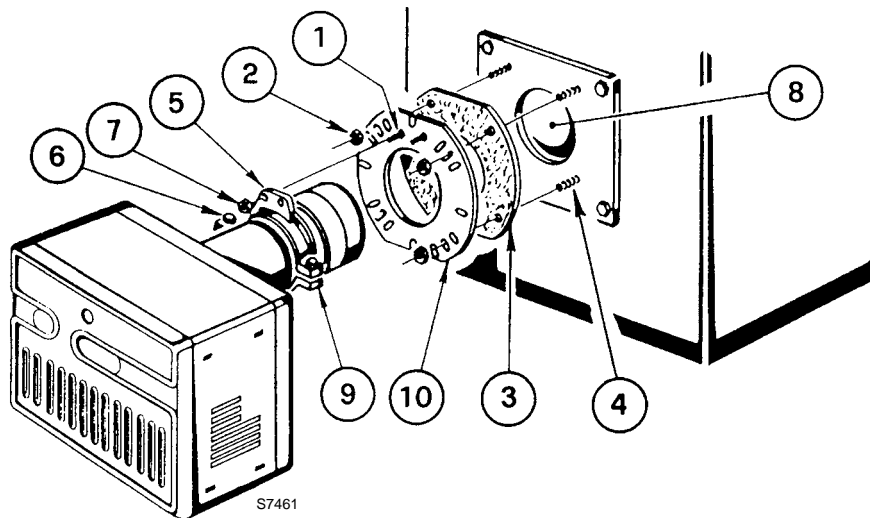
- Carefully pull the DRAWER ASSEMBLY out of the AIR TUBE, install the required nozzle (see page 8) and set aside.
- C) Remove the two BOLTS (3) from FRONT PLATE (4) of the BURNER CHASSIS. Align the two holes on the AIR TUBE HOLDING PATE (5) with the two holes on the BURNER CHASSIS FRONT PLATE with the BOLTS (3) removed. Replace the BOLTS and fingers tighten only. Re-install DRAWER ASSEMBLY into AIR TUBE. Tighten SCREW (2) securely.
- D) Tighten the two bolts (3) securely.

MOUNTING THE BURNER TO THE BOILER OR FURNACE

There are three possible methods to mount the burner, depending on the individual application. These are:

- 1) Universal flange bolted to Boiler/Furnace unit.
- 2) Semi-flange collar bolted to Boiler/Furnace unit.
- 3) Universal flange mounted to optional Pedestal mount, where flange mounting direct to appliance is not possible. Pedestal kit must be ordered separately.

METHOD 1 – UNIVERSAL MOUNTING FLANGE



- A) Insert the two BOLTS (1) into the UNIVERSAL MOUNTING FLANGE (10) from the flat side, ensuring the bolt heads are flush with the flat surface. Secure in place using two special CHROME NUTS (2) provided.
- B) Position the MOUNTING GASKET (3) between the flat surface of the UNIVERSAL MOUNTING FLANGE (10) and the appliance. Line up the holes in the UNIVERSAL MOUNTING FLANGE with the STUDS (4) on the appliance mounting plate and securely bolt the UNIVERSAL MOUNTING FLANGE to the plate.
- C) Secure the two semi-flanges of the ADJUSTABLE COLLAR (9) to the AIR TUBE using the two long BOLTS (6). Be sure that the ADJUSTABLE COLLAR (9) is properly positioned so the outside edge of the END CONE will be at least 1/4" inch (6.5 mm) back from the inside wall of the refractory of the combustion chamber (see dimension B above). The measured length (A) is to include MOUNTING GASKET and FLANGE, if used.
- D) The burner may now be attached to the heating unit by insetting the AIR TUBE through the BURNER ACCESS HOLE (8) and into the appliance, making sure the BOLTS (1) line up with the two HOLES (5) in the ADJUSTABLE COLLAR (9). Secure the burner in place using two NUTS (7).

A visual verification of the air tube insertion into the combustion chamber of the heating unit is suggested. Dimension B should be at least 1/4" (see drawing).

NOTE:

A suggested method for creating mounting bolt holes in the mounting gasket: Hold the gasket against the appliance mounting bolts using the mounting flange for proper positioning. Lightly tap the flange with a hammer to form the holes.

METHOD 2 – SEMI-FLANGE COLLAR

- A) Follow item C from METHOD 1.
- B) Align the air tube and attached adjustable collar so air tube is centered in the burner access hole of the boiler/furnace unit. Mark the center of the two holes in the ADJUSTABLE COLLAR on to the front plate of the heating unit. Then drill 1/4" inch (6.5 mm) holes through the front plate of the unit, using marks as a guide.
- C) Install two short BOLTS (1) through the front plate of the heating unit from the inside, and secure on the outside using the two special CHROME NUTS (2).
- D) Follow item D from METHOD 1.

METHOD 3 – PEDESTAL MOUNT

Secure the MOUNTING FLANGE to MOUNTING PEDESTAL using the hardware provided with the pedestal. Secure burner to MOUNTING FLANGE as in METHOD 1, item A, C and D.

NOTE:

It is suggested that the pedestal be anchored in position on the floor by installing brackets over the pedestal tube and securing brackets to the floor.



WHEN THE COMBUSTION CHAMBER IS LINED WITH A REFRACTORY MATERIAL, IT IS IMPERATIVE THAT THE END CONE NOT PROTRUDE INTO THE CHAMBER AREA, AS EXCESSIVE HEAT AT BURNER SHUT DOWN WILL DAMAGE THE END CONE.

AMULET INSTALLATION INSTRUCTIONS

(Required on some models)

The amulets provided have been selected by Riello to protect the combustion tube from hot exhaust gases and flame. This protection may be needed in applications where the combustion tube opening in the combustion chamber refractory is larger than the tube outside diameter.

The amulet has been sized to fit Riello Model 40 sizes F3 and F5 plus the Riello Model R35.

When installing this amulet, handle it carefully.

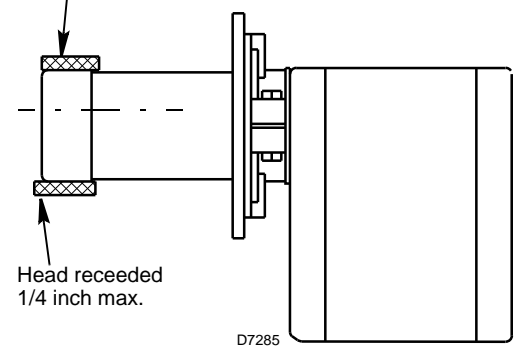
Do not exert undue pressure when pushing the amulet over the combustion tube.

Excessive force can result in a broken amulet!

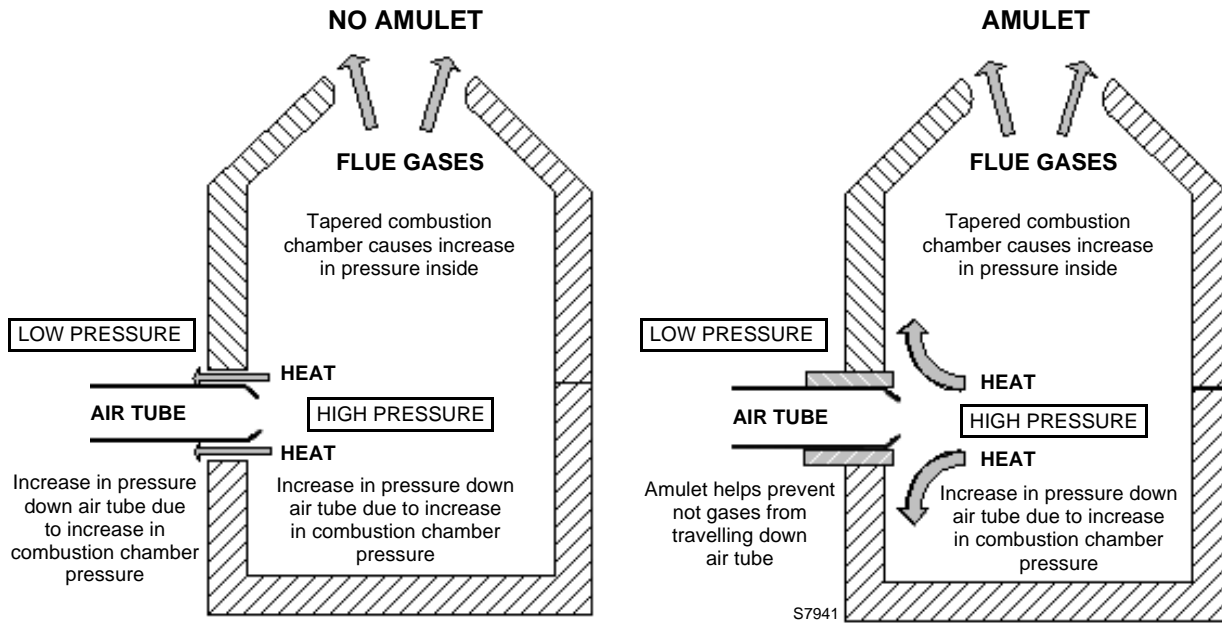
If the amulet will not fit easily onto the tube, remove a small amount of the inner diameter with a sharp knife to provide the necessary clearance.

The diagram below shows the proper position of the amulet after installation.

Amulet shown in the flush mounted position



D7285

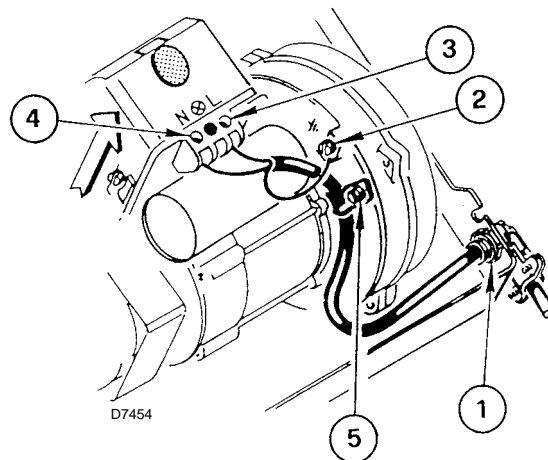


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ELECTRICAL CONNECTIONS

It is advisable to leave the control box off the sub-base while completing the electrical connection to the burner.

- 1) Wire access hole (Use BX electrical connector)
- 2) Earth ground conductor terminal (Green wire)
- 3) Hot conductor terminal (Black wire)
- 4) Neutral conductor terminal (White wire)
- 5) Strain relief clamp



WARNING:

The hot (black) wire must be connected to the L terminal and the neutral (white) wire must be connected to the N terminal or the primary safety control will be damaged. Do not connect wither wire to the terminal marked ⊗.

The burner may be controlled using either a DIRECT LINE VOLTAGE control circuit (120V AC 60 cycle) **OR** a LOW VOLTAGE control (24V AC 60 cycle) using a R8038A Honeywell switching relay **OR** a LOW VOLTAGE thermostat input (T-T).

Using the appropriate diagram below, make electrical connections to burner. All wiring must be done in accordance with existing electrical codes, both national and local. When all electrical connections have been made, the control box may be put back in place on the sub-base.

WARNING: DO NOT activate burner until proper oil line connections have been made, or failure of the pump shaft seal may occur.

APPLICATION FIELD WIRING - RIELLO 530 SE/C PRIMARY CONTROL

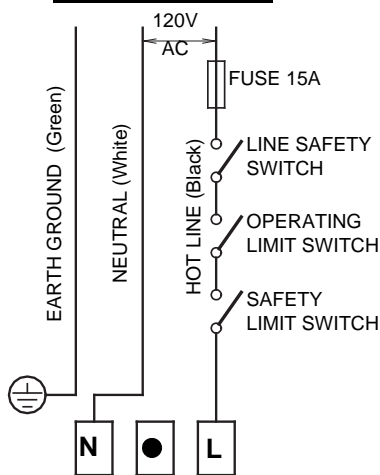
REMOTE SENSING OF SAFETY LOCKOUT

The SAFETY SWITCH in the 530 SE/C CONTROL BOX is equipped with a contact allowing remote sensing of burner lockout. The electrical connection is made at terminal 4 (●) on the SUB-BASE.

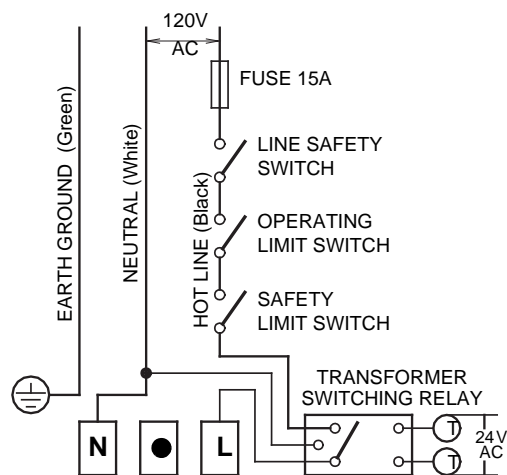
Should lockout occur the 530 SE/C CONTROL BOX will supply a power source of 120Vac to the connection terminal.

The maximum allowable current draw on this terminal (4) is 1 Amp.

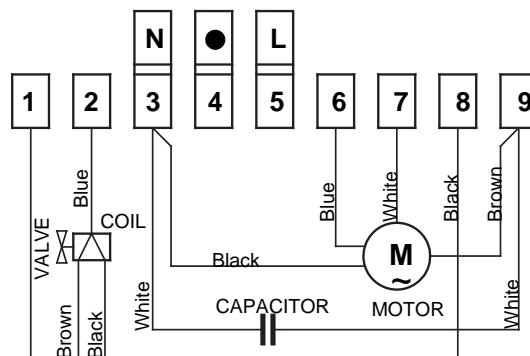
DIRECT LINE VOLTAGE



LOW VOLTAGE

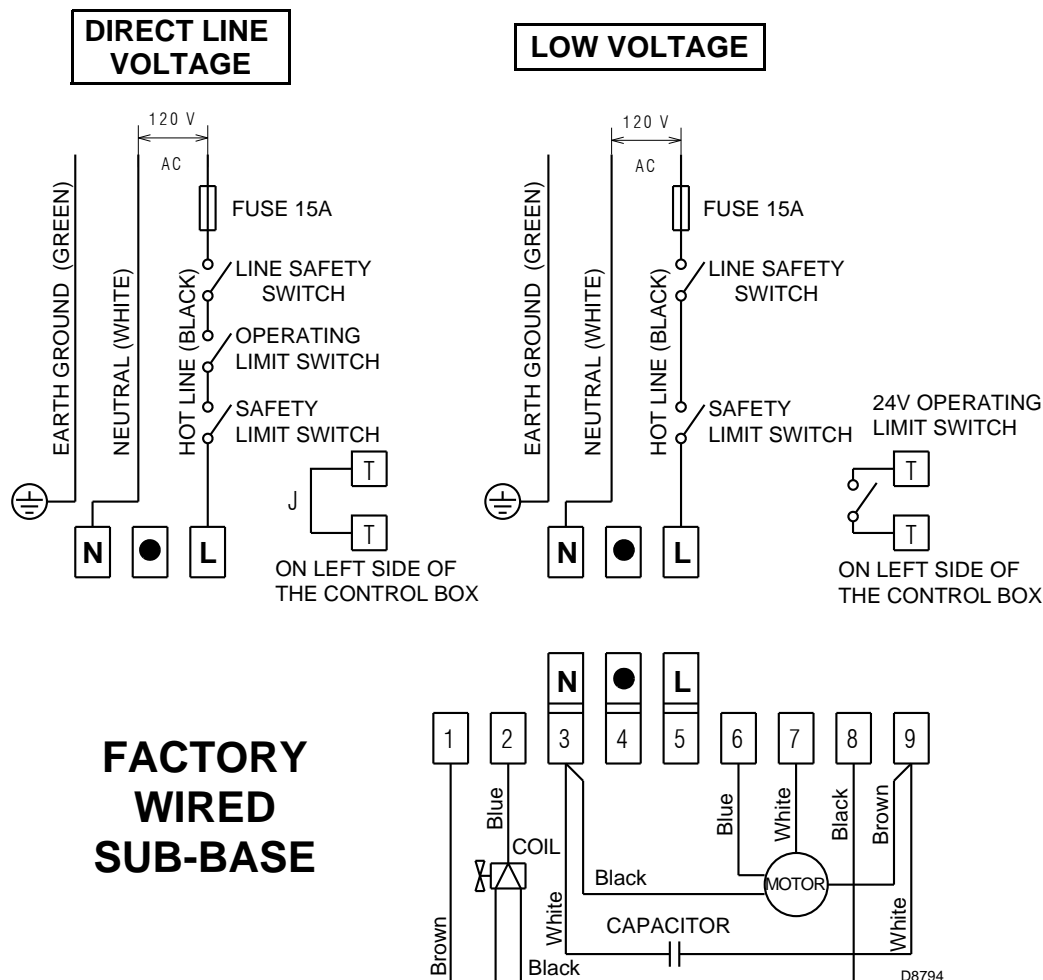


FACTORY WIRED SUB-BASE



WARNING *If a neutral or ground lead is attached to this terminal, the CONTROL BOX on the burner will be damaged should lockout occur.*

APPLICATION FIELD WIRING - RIELLO 530 SE/C 24V PRIMARY CONTROL



REMOTE SENSING OF SAFETY LOCKOUT

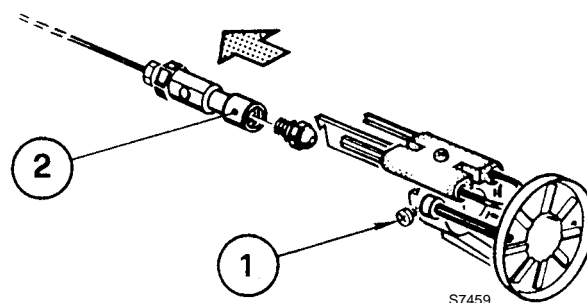
The SAFETY SWITCH in the 530 SE/C 24V CONTROL BOX is equipped with a contact allowing remote sensing of burner lockout. The electrical connection is made at terminal 4 (●) on the SUB-BASE. Should lockout occur the 530 SE/C 24V CONTROL BOX will supply a power source of 120Vac to the connection terminal. The maximum allowable current draw on this terminal (4) is 1 Amp.



WARNING *If a neutral or ground lead is attached to this terminal, the CONTROL BOX on the burner will be damaged should lockout occur.*

NOZZLE PLACEMENT

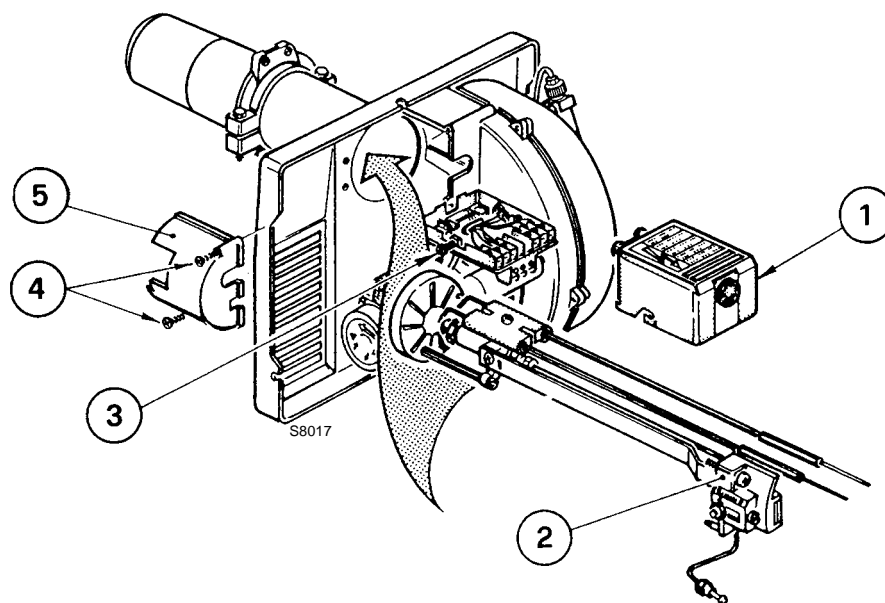
- Determine the proper firing rate for the boiler or furnace units, considering the specific application, and then use the Burner Setup charts on page 11 to select the proper nozzle and pump pressure to obtain the required input from the burner.
- Remove the NOZZLE ADAPTER (2) from the DRAWER ASSEMBLY by loosening the SCREW (1).
- Insert the proper NOZZLE into the NOZZLE ADAPTER and tighten securely (Do not over tighten).
- Replace adapter, with nozzle installed, into drawer assembly and secure with screw (1).



INSTALLATION/REMOVAL OF DRAWER ASSEMBLY

Removal:

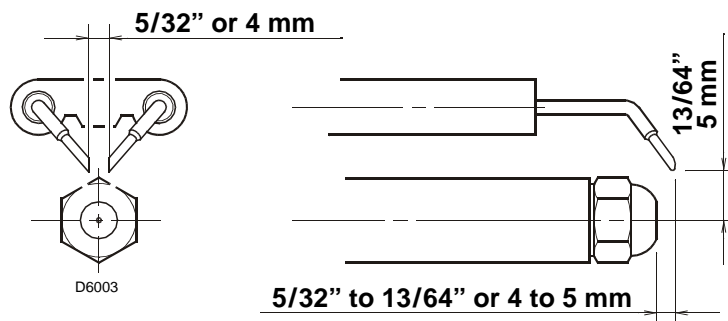
- Loosen off oil delivery tube nut from pump.
- Loosen SCREW (3), and then unplug CONTROL BOX (1) by carefully pulling it back and then up.
- Remove the AIR TUBE COVER PLATE (5) by loosening the retaining SCREW (4) (Two SCREWS – Model F5).
- Loosen SCREW (2), and then slide the complete drawer assembly out of the combustion head as shown.
- To insert drawer assembly, reverse the procedure in items A to D above.



ELECTRODE SETTING

IMPORTANT:

These dimensions must be observed and verified.



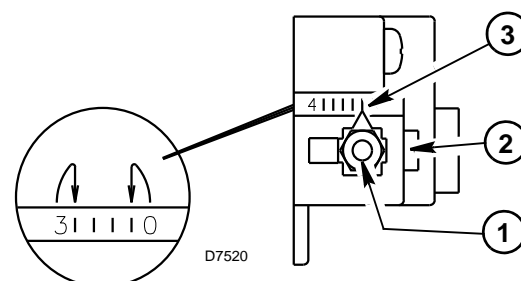
TURBULATOR SETTING

- Loosen NUT (1), and then turn SCREW (2) until the INDEX MARKER (3) is aligned with the correct index number as per the Burner Setup charts, or OEM specifications given with the appliance.
- Retighten the RETAINING NUT (1).

NOTE: OEM specifications take priority over retrofit specifications shown in this manual.

MODEL F3: Zero and three are scale indicators only. From left to right the first line is 3 and the last line 0.

MODEL F5: Same as above, except scale indicators are 0 and 4.



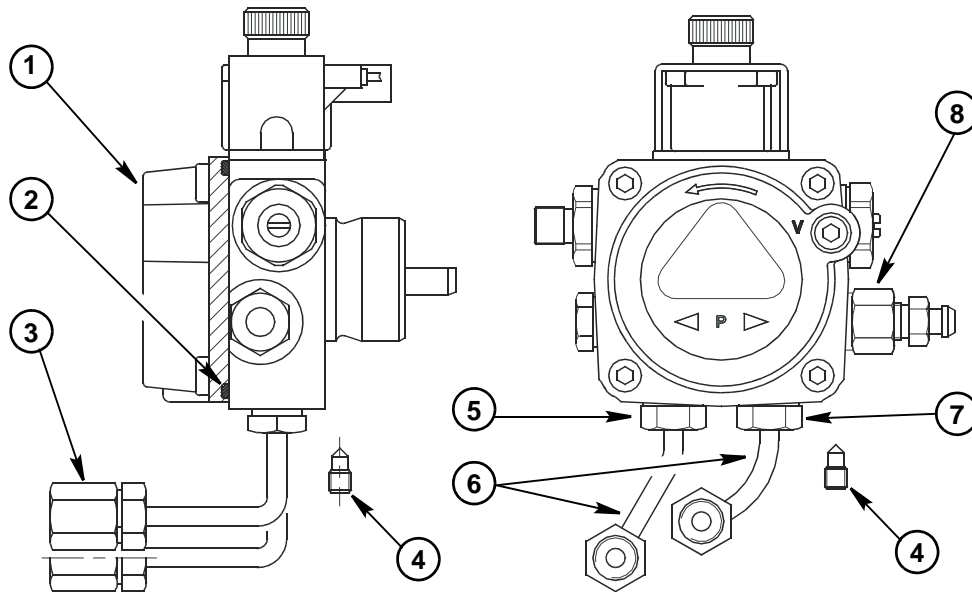
OIL LINE CONNECTIONS

This burner is shipped with the oil pump set to operate on a **single** line system. To operate on a **two-line** system the by-pass plug must be installed.

WARNING: Do not operate a **single** line system with the by-pass plug installed. Operating a **single** line system with the by-pass plug installed will result in damage to the pump shaft seal.

NOTE: Pump pressure must be set at time of burner start-up. A pressure gauge is attached to the **PRESSURE PORT** (8) for pressure readings. Two **PIPE CONNECTORS** (6) are supplied with the burner for connection to either a single or two-line system. Also supplied are two **ADAPTORS** (3), two female 1/4" NPT, to adapt oil lines to burner pipe connectors. All pump port threads are **British Parallel Thread** design. Direct connection of NPT threads to the pump **will damage** the pump body.

Riello manometers and vacuum gauges **do not** require any adapters, and can be safely connected to the pump ports. An NPT (metric) adapter **must** be used when connecting other gauge models.



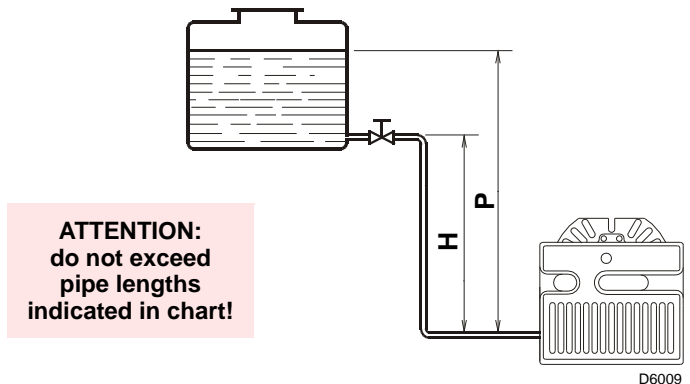
SINGLE LINE (GRAVITY FEED SYSTEM)

A) The burner is shipped configured for use in single line applications. No changes to the oil pump are required for use in single line applications.

NOTE: If the **pump cover** (1) is removed for any reason, be sure the O-ring (2), is properly seated in the pump cover (1) before re-attaching the pump cover to the pump housing.

B) Connect the pipe connector to the **SUPPLY PORT**(5) of the pump. Attach the NPT adapter to the pipe connector. Attach the required piping to this pipe adapter. Be sure that the plug in the **RETURN PORT** (7) is tightened securely.

SINGLE LINE SYSTEM-PIPE LENGTHS					
H		3/8" OD		1/2" OD	
FT	M	FT	M	FT	M
1.5	0.5	33	10	65	20
3.0	1.0	65	20	130	40
5.0	1.5	130	40	260	80
6.5	2.0	195	60	325	100

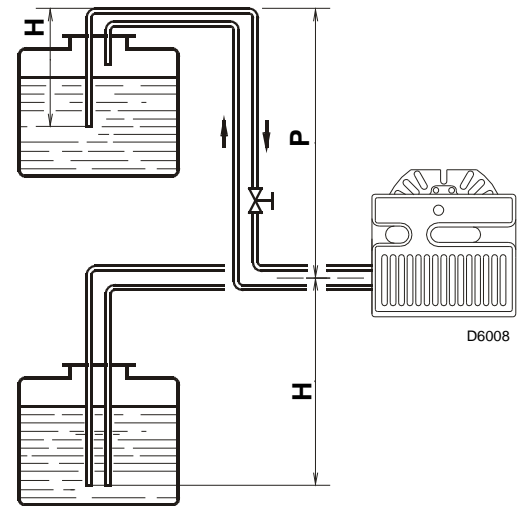


TWO LINE (LIFT SYSTEM)

- A) If a two-line system is required, install the By-pass plug provided. The by-pass plug is installed in the return port of the pump. A 2.5-mm hexagonal key provided with the by-pass plug is to be used to install the plug. DO NOT use an inch size hexagonal key; damage to the by-pass plug may result. When operating on a two-line system, supply and return lines should be the same diameter and both **should extend to the same depth inside the fuel tank**. Be sure there are no air leaks or blockages in the piping system. Any obstructions in the return line will cause failure of the pump shaft seal.

2 LINE (LIFT) SYSTEM-PIPE LENGTHS					
H		3/8" OD		1/2" OD	
FT	M	FT	M	FT	M
0.0	0.0	115	35	330	100
1.5	0.5	100	30	330	100
3.0	1.0	80	25	330	100
5.0	1.5	65	20	295	90
6.5	2.0	50	15	230	70
9.5	3.0	25	8	100	30
11	3.5	20	6	65	20

ATTENTION:
do not exceed
pipe lengths
indicated in chart!



To install the by-pass plug:

- 1) Remove the return plug (7).
- 2) Install the by-pass plug (4) using the 2.5 mm hexagonal key.

- B) Attach the two PIPE CONNECTORS (6) to the pump SUPPLY and pump RETURN PORTS (5 and 7). Attach the required piping to these two pipe connectors using the NPT/ METRIC ADAPTERS that are supplied with the burner.

WARNING:

- Pipe dope or Teflon tapes are NOT to be used on any direct oil connection to the fuel pump.
- The height 'P' in Pipe Length Charts should not exceed 13 feet (4 m).
- The vacuum should not exceed 11.44 inches of mercury.

IMPORTANT:

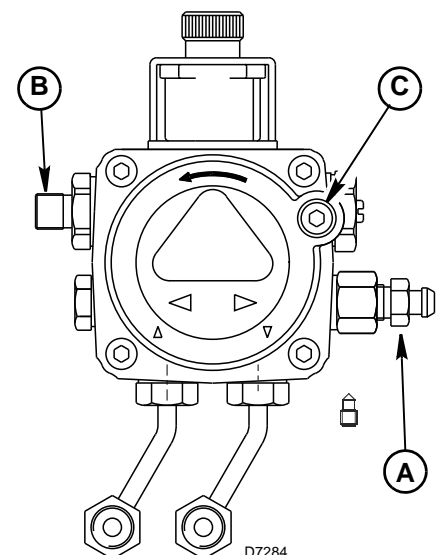
An external, appropriately listed and certified oil filter must be placed in the fuel line between the fuel tank and the burner pump.

PUMP PURGE

NOTE: To protect the pump gears, it is advisable to lubricate the pump prior to purging a lift system. Apply oil through the VACUUM PORT (C).

A) SINGLE LINE (GRAVITY FEED SYSTEM)

- I. Loosen the bleeder valve (A) until oil flows out. Tighten the bleeder valve securely and start burner.
- II. When bleeding the pump by pressure:
 - 1) Loosen the bleeder valve (A).
 - 2) Disconnect nozzle oil supply line at the pump nozzleport (B).
 - 3) Attach a flexible plastic tube to the pump nozzle, port directing the oil flow into a bucket.
 - 4) Loosen the screw(s) securing the air tube cover, allowing it to be removed freely.
 - 5) Holding the air tube cover in its proper location start the burner.
 - 6) When the solenoid valve is engaged approximately 10 seconds after starting, remove the air tube cover and shine a light source on the photocell, allowing it to see false light.



- 7) Run the burner until the fuel pump has been purged of air, then tighten the bleeder valve and immediately shut down the burner.
- 8) Reinstall the air tube cover and nozzle line.
- 9) The burner can now be started normally.

WARNING: Omitting steps 2 and 3 will result in a collection of unburned oil in the combustion chamber creating a hazardous situation upon burner startup.

B) TWO LINE (LIFT SYSTEM)

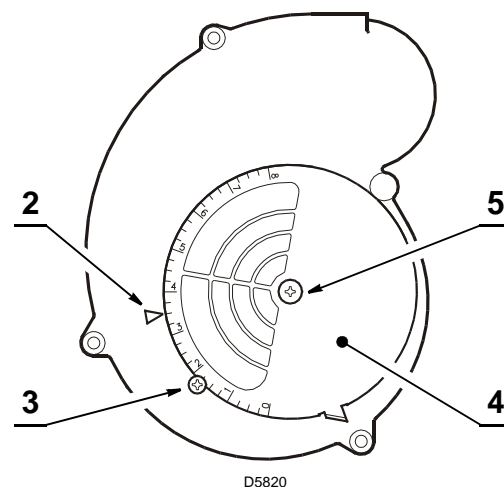
Turn off the main power source to the burner and remove the air tube cover. Shines a light source on the photocell (now visible where the air tube cover was removed), return power to the burner and activate the burner. With the light source in place, the burner will operate in prepurge only. When the pump is sufficiently purged, the hydraulic air shutter will open. Once the burner is purged, turn off the power source and replace the air tube cover. Return power to the burner. The burner is now ready to operate.

ATTENTION: It is important that the fuel line be completely sealed and free from air leaks or any internal blockages.
WARNING! WHEN THE BYPASS PLUG IS INSTALLED, A TWO-PIPE SYSTEM MUST BE USED OR FAILURE OF THE PUMP SHAFT WILL OCCUR.

SETTING THE AIR ADJUSTMENT PLATE

- A) Regulation of the combustion airflow is made by adjustment of the manual AIR ADJUSTMENT PLATE (4) after loosening the FIXING SCREWS (3 & 5). The initial setting of the air adjustment plate should be made according to BURNER ADJUSTMENT TABLE.
- B) The proper number on the manual AIR ADJUSTMENT PLATE (4) should line up with the SETTING INDICATOR (2) on the fan housing cover. Once set, the air adjustment plate should be secured in place by tightening FIXING SCREWS (3 & 5).
- C) The final position of the air adjustment plate will vary on each installation. Use instruments to establish the proper setting for maximum CO₂ and a smoke reading of zero.

NOTE: Variations in flue gas, smoke, CO₂ and temperature readings may be experienced when burner cover is put in place. Therefore, the burner cover **must** be in place when making final combustion instrument readings, to ensure proper test results.

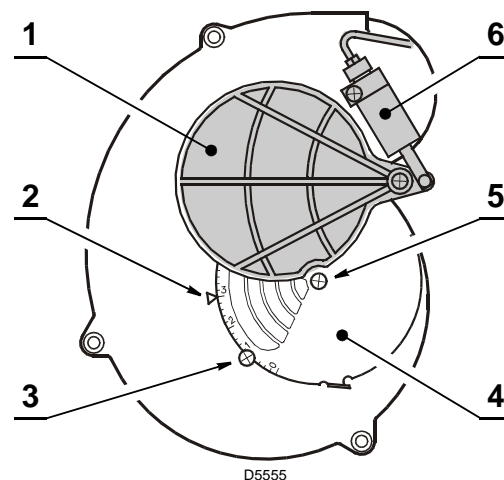


OPTIONAL - pos. 1 - 6

OPTIONAL

The HYDRAULIC AIR SHUTTER (1) is operated by the HYDRAULIC JACK(6), assuring complete opening of the combustion air intake.

Setting the air adjustment plate: same as above.
 Manually open and release the HYDRAULIC AIR SHUTTER (1) to ensure it has free movement.



BURNER ADJUSTMENT TABLE

NON-RETROFIT APPLICATIONS

If this burner is being installed in a packaged unit (i.e. Burner comes with a boiler or furnace), follow the installation and set-up instructions supplied with the heating appliance, as settings will differ from those shown in this manual.

MODEL F3 BURNER					
Actual firing rate 5% ±	Nozzle size	Pump pressure		Turbulator setting	Air damper setting
		US GPH	GPH		
0.50	.40 x 60°/80°	160	11.0	0.0	2.3
0.60	.50 x 60°/80°	150	10.4	0.5	2.7
0.75	.60 x 60°/80°	150	10.4	1.5	3.4
0.80	.65 x 60°/80°	150	10.4	2.0	3.6
0.95	.75 x 60°/80°	160	11.0	3.0	4.3

MODEL F5 BURNER					
Actual firing rate 5% ±	Nozzle size	Pump pressure		Turbulator setting	Air damper setting
		US GPH	GPH		
0.75	.60 x 60/ 80°	145	10	0.0	2.25
0.85	.65 x 60/ 80°	145	10	0.5	2.5
1.00	.85 x 60/ 80°	145	10	1.0	2.75
1.10	1.00 X 60/ 80°	145	10	2.0	3.0
1.25	1.10 x 60/ 80°	145	10	2.5	3.5
1.50	1.25 x 60/ 80°	145	10	3.0	4.25
1.65	1.35 X 60/ 80°	145	10	4.0	6.0



The above set up charts are a starting point only.

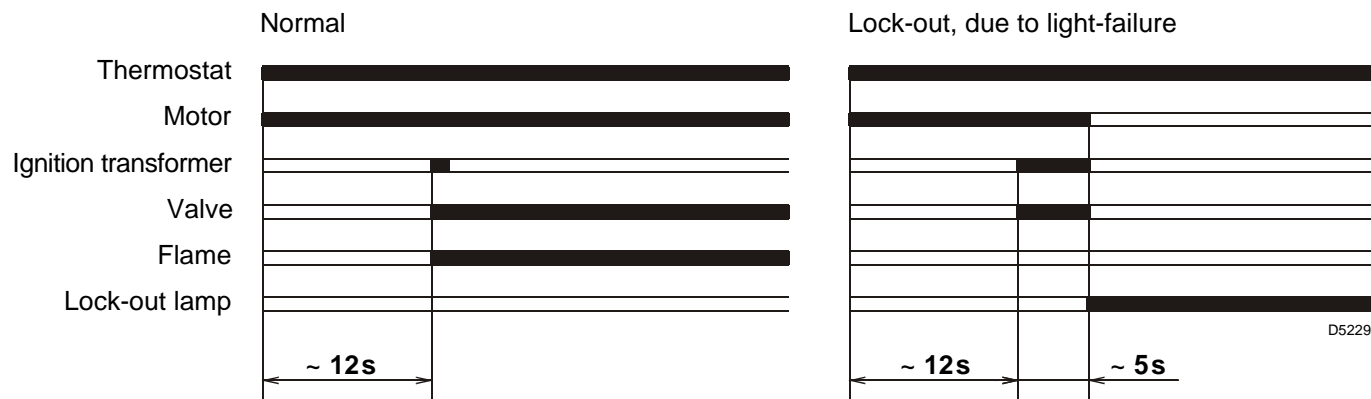
The burner and appliance must be properly set up using proper combustion testing equipment.

Any approved oil burner nozzle type, angle and manufacturer maybe used, as long as input is corresponding the correct BTU/hr or US gph input rating of the appliance.

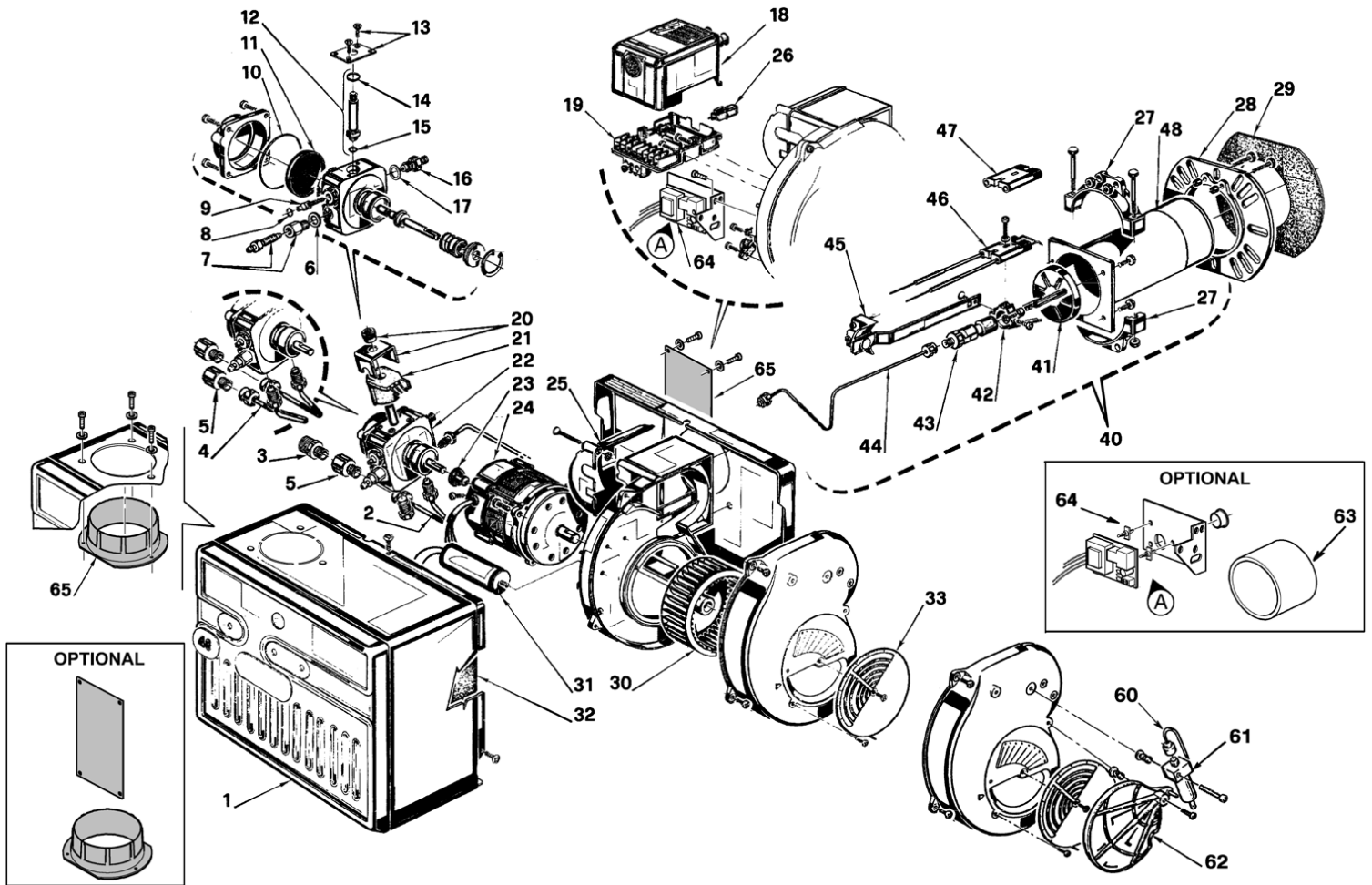
COMBUSTION CHAMBER

Follow the instructions furnished by the boiler/furnace manufacturer. Size retrofit application according to the appropriate installation codes (e.g. CSA B139 or NFPA #31).

BURNER START-UP CYCLE



EXPLODED SPARE PARTS LIST



SPARE PARTS LIST

No.	CODE	F3	F5	DESCRIPTION	No.	CODE	F3	F5	DESCRIPTION
1	3020506	•		BURNER BACK COVER					OPTIONAL
1	3020508	•	•	BURNER BACK COVER	60	3008048 C7001058	•	•	CAPILLARY TUBE
2	3006992	•	•	PIPE CONNECTOR - SUPPLY	60	3008049 C7001059	•	•	CAPILLARY TUBE
3	3006571	•	•	3/8" NPT/METRIC ADAPTER - MALE	61	3006911	•	•	HYDRAULIC JACK
4	3006993	•	•	PIPE CONNECTOR - RETURN	62	3000878	•	•	HYDRAULIC AIR SHUTTER
5	3005847	•	•	1/4" NPT/ METRIC ADAPTER - FEMALE	63				AMULET - CERAFELT SLEEVE KIT
6	3007077	•	•	CRUSHABLE METAL WASHER 3/8" ID	64				AL 1009 POST PURGE DEVICE KIT
7	3007568	•	•	BLEEDER	65	3002761	•	•	DUCTED COMBUSTION AIR INTAKE KIT
8	3007028	•	•	O-RING - PUMP PRESSURE REGULATOR					
9	3007202	•	•	REGULATOR SCREW					
10	3007162 C7010002	•	•	O-RING - PUMP COVER					
11	3005719	•	•	PUMP SCREEN		3000932	•	•	ADJUSTABLE STEEL FLANGE
12	3006925	•	•	VALVE STEM					
13	3007203	•	•	VALVE STEM PLATE					
14	3007029	•	•	O-RING - VALVE STEM UPPER					
15	3007156	•	•	O-RING - VALVE STEM LOWER					
16	3007268	•	•	NOZZLE OUTLET FITTING					
17	3007087	•	•	CRUSHABLE METAL WASHER 5/8" ID					
18	3001157 C7001029	•	•	PRIMARY CONTROL 530 SE/C					
18	20010004	•	•	PRIMARY CONTROL 530 SE/C 24V					
19	3002278	•	•	PRIMARY CONTROL SUB BASE					
20	3006553	•	•	COIL U-BRACKET AND KNURLED NUT					
21	3002279	•	•	COIL					
22	3007802 C7001010	•	•	PUMP					
23	3000443	•	•	PUMP DRIVE KEY					
24	3008451	•	•	MOTOR					
25	3007315	•	•	AIR TUBE COVER					
25	3007316	•	•	AIR TUBE COVER					
26	3002280	•	•	PHOTOCELL					
27	3005854	•	•	SEMI FLANGE (2 REQUIRED)					
28	3005855	•	•	UNIVERSAL MOUNTING FLANGE					
29	3020248 C6880000	•	•	MOUNTING GASKET					
30	3005708	•	•	FAN					
31	3005798	•	•	CAPACITOR 4 µF					
32	3002864 C6950050	•	•	ACOUSTIC LINER					
32	3007320	•	•	ACOUSTIC LINER					
33	3007204	•	•	MANUAL AIR SHUTTER					

SPARE PARTS LIST

No.	CODE	F3	F5	DESCRIPTION	No.	CODE	F3	F5	DESCRIPTION
40	3948876	•		VSBT COMBUSTION HEAD 3"	40	3948877	•		COMBUSTION HEAD 8 7/8"
40	3948976		•	VSBT COMBUSTION HEAD 3"	40	3948975		•	COMBUSTION HEAD 8 7/8"
41	3006968	•		TURBULATOR DISC	41	3006968	•		TURBULATOR DISC
41	3006977		•	TURBULATOR DISC	41	3006977		•	TURBULATOR DISC
42	3006966	•	•	ELECTRODE SUPPORT	42	3006966	•	•	ELECTRODE SUPPORT
43	3006965	•	•	NOZZLE ADAPTER	43	3006965	•	•	NOZZLE ADAPTER
44	3008627	•		NOZZLE OIL TUBE	44	3008790	•		NOZZLE OIL TUBE
44	3008629		•	NOZZLE OIL TUBE	44	3008628		•	NOZZLE OIL TUBE
45	3008633	•		REGULATOR ASSEMBLY	45	3008846	•		REGULATOR ASSEMBLY
45	3008634		•	REGULATOR ASSEMBLY	45	3008635		•	REGULATOR ASSEMBLY
46	3008630	•		ELECTRODE ASSEMBLY	46	3008789	•		ELECTRODE ASSEMBLY
46	3008631		•	ELECTRODE ASSEMBLY	46	3008632		•	ELECTRODE ASSEMBLY
47	3005869	•	•	ELECTRODE PORCELAIN	47	3005869	•	•	ELECTRODE PORCELAIN
48	3008623	•		AIR TUBE	48	3008788	•		AIR TUBE
48	3008626		•	AIR TUBE	48	3008625		•	AIR TUBE
40	3948873	•		SBT COMBUSTION HEAD 6" (271T)					
40	3948973		•	SBT COMBUSTION HEAD 6" (271T)	40	3948874	•		LBT COMBUSTION HEAD 10" (271T2)
41	3006968	•		TURBULATOR DISC	40	3948974		•	LBT COMBUSTION HEAD 10" (271T2)
41	3006977		•	TURBULATOR DISC	41	3006968	•		TURBULATOR DISC
42	3006966	•	•	ELECTRODE SUPPORT	41	3006977		•	TURBULATOR DISC
43	3006965	•	•	NOZZLE ADAPTER	42	3006966	•	•	ELECTRODE SUPPORT
44	3006969	•		NOZZLE OIL TUBE	43	3006965	•	•	NOZZLE ADAPTER
44	3006973		•	NOZZLE OIL TUBE	44	3006970	•		NOZZLE OIL TUBE
45	3006324	•		REGULATOR ASSEMBLY	44	3006974	•	•	NOZZLE OIL TUBE
45	3006323		•	REGULATOR ASSEMBLY	45	3005867	•		REGULATOR ASSEMBLY
46	3006330	•		ELECTRODE ASSEMBLY	45	3005878		•	REGULATOR ASSEMBLY
46	3006329		•	ELECTRODE ASSEMBLY	46	3005870	•		ELECTRODE ASSEMBLY
47	3005869	•	•	ELECTRODE PORCELAIN	46	3005880		•	ELECTRODE ASSEMBLY
48	3007592	•		AIR TUBE	47	3005869	•	•	ELECTRODE PORCELAIN
48	3007594		•	AIR TUBE	48	3007593	•		AIR TUBE
					48	3007595		•	AIR TUBE

BURNER START-UP REPORT

Model number: _____	Serial number: _____
Project name: _____	Start-up date: _____
Installing contractor: _____	Phone number: _____

LIGHT OIL OPERATION			
Oil supply pressure: _____	CO ₂ : Low Fire _____	High Fire _____	
Oil suction pressure: _____	O ₂ : Low Fire _____	High Fire _____	
Control Power Supply: _____	CO: Low Fire _____	High Fire _____	
Burner Firing Rate: _____	NO _x : Low Fire _____	High Fire _____	
Low Fire Flame Signal: _____	Net Stack Temp - Low Fire: _____	High Fire _____	
High Fire Flame Signal: _____	Comb. Efficiency - Low Fire: _____	High Fire _____	
Low Fire Nozzle Size: _____	Overfire Draft: _____		
High Fire Nozzle Size: _____	Smoke number: _____		

CONTROL SETTINGS			
Operating Setpoint: _____	Low Oil Pressure: _____		
High Limit Setpoint: _____	High Oil Pressure: _____		
Low Gas Pressure: _____	Flame Safeguard Model Number: _____		
High Gas Pressure: _____	Modulating Signal Type: _____		

NOTES

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Subject to modifications