

METROPOLITAN NY CHAPTER Refrigeration Service Engineers Society

Continued Education for the HVAC/R Industry

“Better Service Through Knowledge”

November 2009

WWW.METRONYRSES.ORG



Troubleshooting the Pilot Flame on a Gas-Fired Furnace or Boiler

Appearance	Possible Cause
Small Blue Flame	If the flame is too small, check for a clogged pilot orifice or gas filter. If the orifice and filter are clear then check for low gas pressure and adjust as necessary.
Lazy Yellow Flame	This problem may come from an overly large orifice, a dirty lint screen, or a dirty primary air opening.
Waving Blue Flame	The problem may be a result of an excessive draft at the pilot location. Install a shield to protect the pilot.
Noisy Lifting Blowing Flame	This may be the result of high inlet gas pressure. Install a pilot pressure reducer.
Hard Sharp Flame	The may be the result of a too-small orifice. However, this flame is normal for manufactured, butane-air or propane-air fuels.

CALCULATING THE HEAT INPUT RATE OF A GAS-FIRED FURNACE

1. Determine the gas flow rate per hour of the furnace. This can be done by turning off all other gas appliances, operating the furnace and observing the gas meter for a 15-minute period. Multiply the observed cubic feet of gas consumed times 4 and you will have determined the amount of cubic feet of gas consumed for a one-hour period.
2. After determining the gas flow rate of the furnace, obtain the gas heating value of the gas being supplied to the furnace. For the Pittsburgh area, a value of 1,050 BTU's per cubic foot can be used for most areas. However to be certain you should contact your gas supplier.
3. To determine the Heat Input Rate of the furnace simply multiply the gas flow rate by the gas heating value.

$$\text{Heat Input Rate} = \text{Gas Flow Rate} \times \text{Gas Heating Value}$$

INTERESTING BUT USELESS FACTS

- The average person falls asleep in seven minutes.
- The combination "ough" can be pronounced in nine different ways. The following sentence contains them all: "A rough-coated, dough-faced, thoughtful ploughman strode through the streets of Scarborough; after falling into a slough, he coughed and hiccoughed."
- The giant squid has the largest eyes in the world.
- The longest one-syllable word in the English language is "screeched."
- The Main Library at Indiana University sinks over an inch every year because when it was built, engineers failed to take into account the weight of all the books that would occupy the building.
- The microwave was invented after a researcher walked by a radar tube and a chocolate bar melted in his pocket.
- The national anthem of Greece has 158 verses. No one in Greece has memorized all 158 verses.

TROUBLESHOOTING GAS COMBUSTION

Problem	Cause	Remedy
Yellow Tipping	Shortage of primary air	Increase primary air
	Shortage of total combustion air	Clean burner
	Incorrect orifice	Check orifice and replace if needed
Lifting Flames	Too much primary air	Decrease primary air
	Incorrect gas pressure	Adjust gas pressure
	Incorrect orifice	Check orifice and replace if needed
Flashback	Primary air flow too high	Decrease primary air flow
	Gas flow is too low	Check gas input
		Replace burners
Extinction Pop	Defective gas valve	Replace gas valve
Wavering Flames	Drafts in combustion chamber	Check furnace panels and draft is satisfactory
	Cracked heat exchanger	Replace heat exchanger
Delayed Ignition	Improper gas pressure	Adjust gas pressure
	Slow opening gas valve	Replace gas valve
	Misdirected pilot flame	Redirect pilot flame
	Dirty orifice or burners	Clean orifice or burners
	Drafts across the burners	Check furnace panels
Flame Rollout	Shortage of combustion air	Check for a blockage of combustion air openings

EXPECT SUCCESS AND IT IS YOURS

~~~~~  
Set your goals high.

You'll find that when you expect good things to happen,  
strangely enough, they will happen.

Your expectation energizes your goals  
and gives them momentum.

Your life will always respond to your outlook.

You must first expect to succeed if you want to succeed.  
And you can't expect to succeed beyond your wildest expectations  
unless you begin with some pretty wild expectations.

The dreams you choose to believe in come to be.  
When you believe something good can happen, it does.

Success is a matter of expectation.

### HONESTY IS STILL THE BEST POLICY

~~~~~  
Before you lies two paths ~~ honesty and
dishonesty.

The shortsighted embark on the dishonest path,
the wise on the honest one.

When you help others you help yourself,

when you hurt others you are hurting yourself.

Character overshadows money,
and trust rises above fame.

Sooner or later everyone sits down

to a banquet of consequences.

It is better to fail with honor than succeed by fraud.
There is no right way to do something wrong.

JOHNSTONE [®] **Supplies Equipment**
JOHNSTONE [®] **Supply**

HVAC/R
 Parts
 Supplies
 Equipment

27-01 BROOKLYN QUEENS EXPRESSWAY WEST
 WOODSIDE, NY 11377

FAX (718) 274-4972

Large Local Stock
 Free Catalogue

718-545-4896
 WHOLESALE ONLY

Supco

SEALED UNIT PARTS CO., INC.

P.O. BOX 21
 2230 LANDMARK PLACE
 ALLENWOOD, NJ 08720 USA
 (732) 223-6644
 FAX: (732) 223-1617

CSI

Support Services for the HVAC Contractor

HVAC Water Treatment

Specialty Cleaning
 Pipe • Duct • Coil

HVAC Antifreeze

Lab Services

Indoor Air Quality

718-361-6666
 www.csiontheweb.com

UR TM

UNITED REFRIGERATION INC.
 Refrigeration, Air Conditioning, Heating, Supplies, Equipment & Parts

Jim Herlinger
 Branch Manager
 51-05 59th Place
 Woodside, NY 11377-7408

Tel: 718 476-2600
 Fax: 718 476-2648
 Branchv2@uri.com

HALSEY ^{SUPPLY CO. INC.}

FOR ALL YOUR

- AIR CONDITIONING
- REFRIGERATION
- EQUIPMENT
- PARTS SUPPLIES
- EPA-CERTIFICATION TESTING

241 HALSEY STREET
 BROOKLYN, NY 11216

(718) 574-4774
 FAX (718) 574-4778

COMING EVENTS

Defrost Technology & Controls
 Refrigeration Piping Problems
 Troubleshooting Electric Motors
 Electrical Safety
 Variable Frequency Drives
 Scroll Compressors

If you have any suggestions or requests for future programs, please let us know!

SEE US 1st

Sid Harvey's
 WHOLESALE DISTRIBUTORS
 Refrigeration/AC/Heating

BROOKLYN (718) 257-4039
 99-03 Foster Ave.

JAMAICA (718) 526-0330
 139-29 Queens Blvd.

MT. VERNON (914) 668-3631
 551 S. Columbus Ave.

OU PONT

Fire Ice Mechanical Inc.

HVAC/R Service Contractors

KURT J. EGGERT

Vogt Tube-Ice Authorized Dealer/
 Sales & Factory Certified Technicians
 Goldenrod Distributor;
 The Newest in Water Treatment Technology
 Air Conditioning & Refrigeration

Tel (718) 631-1503
 Fax (718) 279-4686

ThermatiX Supply

Plumbing, Heating, and Air Conditioning Supplies

"We keep you supplied"

73 Broadway, Hicksville, NY 11801
 toll free: (877) 390-9421
 tel: (516) 513-0985 / 0986
 fax: (516) 620-5942
 email: sales@thermatixsupply.com

ABCO

49-70 31st STREET
 L.I.C., NY 11101
 Phone: 718-937-9000
 Fax: 718-392-1296
 1-800-937-9000

OU PONT

Suva [®]

Riccardo's by the bridge

WEDDINGS
OUR SPECIALTY
 Special Attention Given To
 Dinner Dances • Company Parties
 Cocktail Parties • Business Meetings
 Fund Raisers • Fashion Shows
 Engagement Parties • Christenings
 Special Discounts Given to Senior Citizens

Riccardo's by the bridge

21-01 24th Avenue, Astoria, NY 11102
 718 721-7777
ANTHONY M. CORBISIERO
RICHARD F. CORBISIERO

METROPOLITAN NEW YORK CHAPTER, RSES

For Information Call: Stan Hollander, CMS (718) 232-6679

COMING IN MARCH:

**ALL DAY SEMINAR – 2 SESSIONS (morning & afternoon)
VFD (Variable Frequency Drive) Motors
plus Scroll Compressor Technology**

Wednesday November 11th, 2009 at 7:30pm

at

RICCARDO'S

21-01 24th Avenue, Astoria NY 11102

Defrost Technology & Controls

By

Bill Maier—GE / Grasslin Controls

PLACE LABEL HERE

EDUCATIONAL PROGRAM
Wednesday November 11th, 2009
at 7:30pm
SEE DETAILS—THIS PAGE

