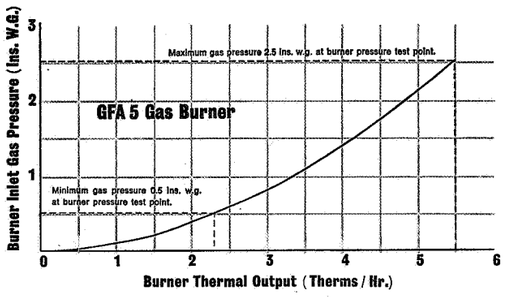
Gas Burner Output

The gas output of each burner varies with the pressure in inches w.g. from the gas governor. The graphs shown indicate the maximum and minimum outputs in therms/hour of each burner in accordance with the gas pressure into the burner. The curves shown are based on the performance of burners when using Town Gas, but are also true for burners using Natural or Liquid Petroleum Gases. The gas to be used should be stated when ordering the burner.

The burner required can be selected by the following formula:

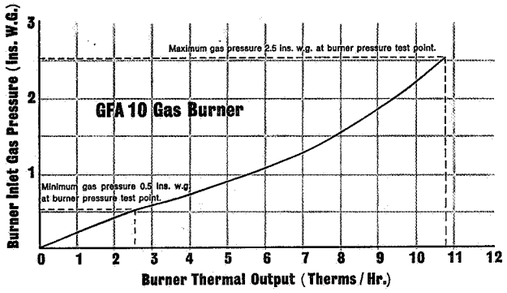
BOILER OUTPUT BTU'S/HR x 100 / BOILER EFFICIENCY % x 100,000 = Thermal output of Burner

Model GFA5



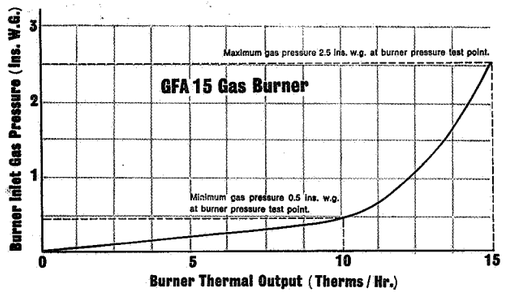
GFA.5
Maximum burner output at 2.5" W.G.— 5.5 Therms/Hour
Minimum burner output at 0.5" W.G.— 2.3 Therms/Hour

Model GFA10



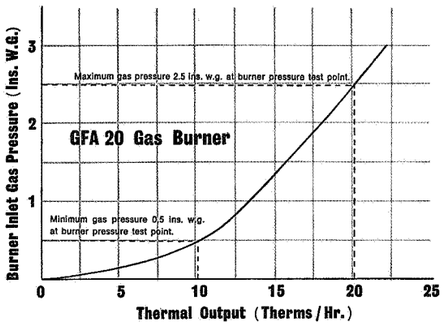
GFA.10
Maximum burner output at 2.5" W.G.— 10.8 Therms/Hour
Minimum burner output at 0.5" W.G.— 2.5 Therms/Hour

Model GFA15



GFA.15
Maximum burner output at 2.5" W.G.— 15.0 Therms/Hour
Minimum burner output at 0.5" W.G.— 10.0 Therms/Hour

Model GFA20



GFA.20
Maximum burner output at 2.5" W.G.— 20.0 Therms/Hour
Minimum burner output at 0.5" W.G.— 10.0 Therms/Hour

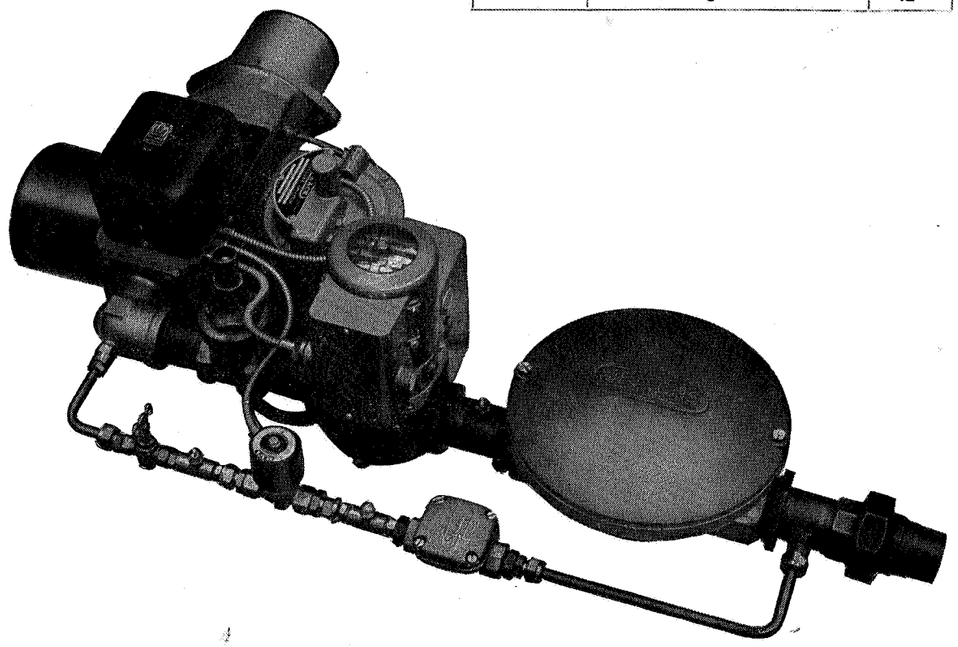
Gas Burner Controls & Safety Features

BURNER CONTROL SYSTEM

Each Gas Burner is monitored and operated by an Ultra Violet cell control system. This control system programmes the operation of the burner motor, ignition system and automatic safety shut-off valves in a proper sequence. All four models operate on an on/off basis, and establish their main flame through a pilot flame sequence. Ignition on each model is provided by a single spark electrode. The control box timing and sequences are shown in the adjacent schedule. A number of safety sequences are incorporated in the control system, and trial period for ignition is precisely restricted. In the event of any flame failure during the burner starting cycle, or after the flame proving period, then the gas solenoid safety shut-off valve (GFA 5) will close within one second, and the hydraulically operated safety shut-off valve on models GFA 10, 15 and 20, within two seconds.

CONTROL BOX TIMING AND SEQUENCES

Burner Model	*Ultra Violet Cell System*	*Time Secs.*
ALL MODELS	1. Pre-Purge Period	68
	2. Ignition and Pilot Gas on — Flame Proved	2
	3. Ignition off	
	4. Pilot Flame Burning	5
	5. Main Gas on and/Main Flame Proved	2
	6. Pilot Flame off	
	7. Burner off by Control Thermostat as required.	
	8. Post Purge	12



GAS CONTROL SYSTEM

On each model, gas is fed to the burner combustion head through a series of controls, consisting of gas governors, electrically or hydraulically operated safety shut-off valves, which are connected to the burner control box, and hand operated shut-off valves. The layout of this equipment which is included on both pilot and main gas supply lines is shown in the adjacent illustration. In each case, the gas governor, through which the burner output is controlled, will be factory set to provide the output required.

In order that the gas pressure may be checked, pressure test points are included on both the pilot and main gas supplies immediately up-stream and down-stream of the solenoid operated safety shut-off valve on the Model GFA5 burner, and the hydraulically and solenoid operated safety shut-off valves on models GFA10, 15 and 20. It should be noted, that during the burner starting period, when the pilot gas system is in operation, less than 3% of the maximum burner gas flow rate is allowed to pass into the heat exchanger combustion chamber. In order to ensure that sufficient combustion air is always available, all models are fitted with an air pressure switch which, should the combustion air supply be restricted in any way, will cause the burner control to close all automatic gas valves. In this case, the burner control box will recycle and restart only when the air supply is restored.

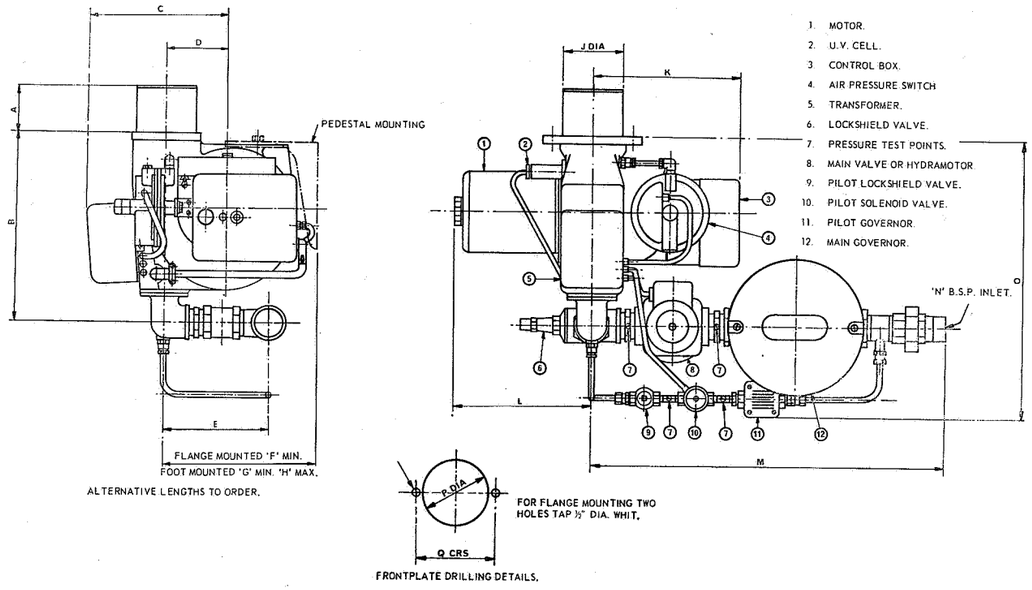
When the burner is supplied for use at its maximum rating, the switch will be factory set for an air pressure of 0.9" w.g. when the burner is to operate below its maximum output, then, the switch will be set accordingly down to 0.2" w.g. at minimum burner output.

The gas control equipment supplied for both main and pilot gas supply lines is suitable for operation on either Town, Natural or Liquid Petroleum Gases.

It should be noted, that on multi-gas burner installations, each burner will require its own gas governor.

Leading Dimensions

ALL BURNERS ARE SUPPLIED FOR FLANGE MOUNTING



Burner	A min.	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q
GFA5	3¼"	13⅛"	9¾"	4 5/16"	7¼"	10⅛"	10⅜"	12⅜"	4⅛"	10½"	10"	22"	2"	19⅞"	4⅝"	5½"
GFA10	3¼"	13⅛"	9¾"	4 5/16"	7¼"	10⅛"	10⅜"	12⅜"	4⅛"	10½"	10"	24½"	2"	19⅞"	4⅝"	5½"
GFA15	3¼"	16½"	11½"	5⅛"	8⅞"	11⅛"	17⅜"	20⅛"	5¼"	11½"	13"	28"	2"	24"	5¾"	6¾"
GFA20	3¼"	16½"	11½"	5⅛"	8⅞"	11⅛"	17⅜"	20⅛"	5¼"	11½"	13"	28"	2"	24"	5¾"	6¾"

GENERAL DATA

Burner Model	Motor H.P.	Start Current Amps.	Run Current Amps.	Draught Required over Flame	Burner Net Weights
GFA5	⅓	15.0	3.2	0.02" W.G.	80 lbs.
GFA10	⅓	15.0	3.2	0.02" W.G.	90 lbs.
GFA15	¾	25.0	4.8	0.02" W.G.	120 lbs.
GFA20	¾	25.0	4.8	0.02" W.G.	125 lbs.

Motor: Totally enclosed. 220/240v/1ph/50 AC All burner motors 2 pole 2850 r.p.m.

Electrical loadings: Calculated on 220/240v 1 ph./50 cycles AC supply. Contactor overloads are supplied only on Models GFA15 and GFA20.

Ignition: Intermittent 5000v transformer rated 23 MA.

T.V. suppressed

Finish: Gold Hammer.

Manufactured by
NU-WAY HEATING PLANTS LTD.
DROITWICH, ENGLAND
Telephone: Droitwich 2331(6 lines) 2527 (4 lines).

NU·WAY Oil & Gas Firing

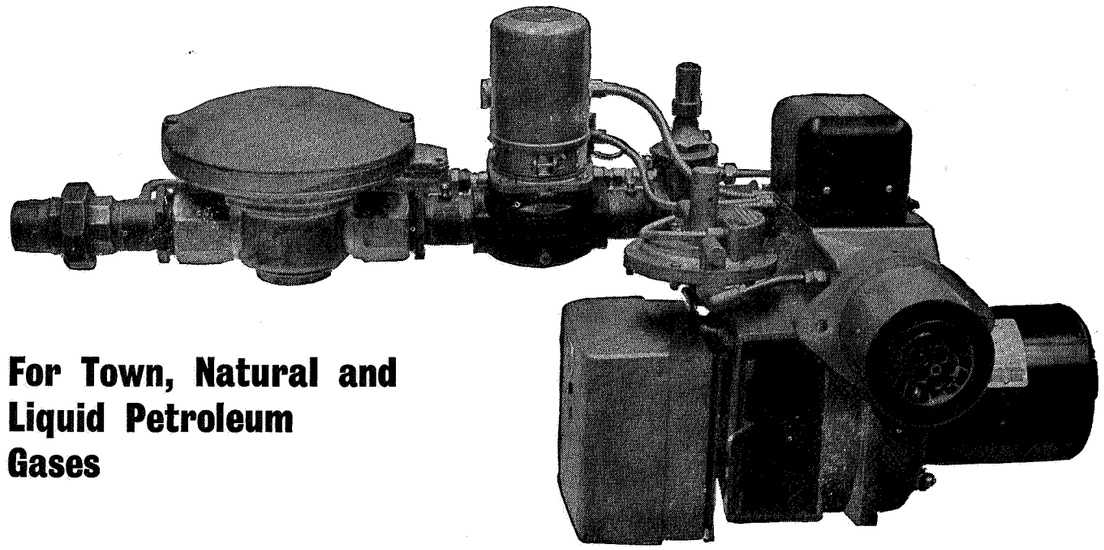
NU·WAY

Data Sheet No. D70B

Models GFA5, GFA10 GFA15 & GFA20

Fully automatic Gas Burners

NU·WAY Oil & Gas Firing



MODEL GFA10

For Town, Natural and Liquid Petroleum Gases

Nu-way now offer a range of four fully automatic gun type Gas Burners for application as original or conversion equipment to Boiler, Air Heater or Process Heating Plant. These four models, GFA.5, GFA.10, GFA.15 and GFA.20, which are interchangeable with the "ZL" range of Pressure Jet Oil Burners, are suitable for operation on either Town, Natural or Liquid Petroleum Gases.

Each Gas Burner operates on an on/off basis, and establishes main flame through a pilot flame sequence. The combustion head fitted to this range of burners is designed to give a rapid and thorough mixing of gas and air, and provides an excellent base for flame formation, stability and propogation, while giving effective control over the flame shape produced.

All four models will be supplied complete with a Cyclic Programme Control Box, mounted and pre-wired together with Gas Governors and safety shut-off valve equipment which will be incorporated in the main and pilot gas supply systems.

- **Fully automatic On/off Operation**
- **Pilot Flame Ignition**
- **Ultra Violet Cell Flame Monitor**
- **Cyclic programme Control**