

# AMAL

## Bunsen Burners



Orders and enquiries should be addressed to laboratory equipment suppliers, local overseas agents where applicable, or direct to:

The AMAL Carburetter Company  
Spitfire House, Castle Road, Salisbury, Wiltshire, SP1 3SB  
Tel: 00 44 (0) 1722 412500 Fax: 00 44 (0) 1722 334221  
[www.amalcarb.co.uk](http://www.amalcarb.co.uk) email: [info@amalcarb.co.uk](mailto:info@amalcarb.co.uk)

The AMAL Carburetter Company is a division of Burlen Fuel Systems Limited

ALT 9943

ALT 9943



# AMAL

## Amal Bunsen Burners

Amal have been leaders in the field of bunsen burner design for the past four decades and many present-day doctors, chemists and research scientists will have conducted their first experiments at school with the aid of an Amal bunsen.

Today, Amal retain their position as Britains leading supplier of bunsen burners to reserch establishments, teaching hospitals, universities, industrial laboratories and schools.

Amal busne burners are exported to many countries and can be used with all the varieties of fuel gas available in different parts of the world.

If you are fitting out a new laboratory, re-equipping an old one or converting to natural gas, you will find that Amal can satisfy all your bunsen burner requirements no matter how exacting.



The burner tube assembly of the bench-type bunsen burners described in the previous pages forms an excellent gas burner for many industrial applications. All models are available in industrial form with an externally threaded adaptor, complete with fixed jet, fitted in place of the laboratory-type base. Thus equipped, burner tubes can be screwed into suitably drilled and tapped holes in manifold piping, ring-shaped tubes, etc., for a variety of heating applications.

Mounted singly, an Amal 502/3/42 burner tube forms an ideal pilot light for main burner systems; alternatively, several burner tubes can be used to form a main burner.

## Amal Industrial Burner Tubes

### Approximate weights and dimensions

Model	Burner top	Height excluding thread		External thread	Weight	
		in	mm		oz	gm
Graduate	Perforated	4.5	114	½ in BSP	2	57
	Cylindrical	4.5	114	½ in BSP	2	57
	Fish-tail	4.5	114	½ in BSP	2	57
Minor	Perforated	4.25	108	¼ in BSP	7	198
Major	Perforated	6.06	154	¼ in BSP	9	255
Maximus	Perforated	6.37	162	¼ in BSP	13	368

### Amal Graduate industrial burner tubes

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Amal jet	Amal tube
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h			
Natural gas	8	20.0	2700	2.9	502/3/41	55	41 (perforated)
	8	20.0	4400	4.6	502/3/42	90	42 (cylindrical)
	8	20.0	3200	3.4	502/3/43	65	43 (fish-tail)
Liquefied petroleum gases	11	27.5	2900	3.1	502/3/41	30	41 (perforated)
	11	27.5	3400	3.6	502/3/42	35	42 (cylindrical)
	11	27.5	2900	3.1	502/3/43	30	43 (fish-tail)

### Amal Minor industrial burner tubes

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Amal jet
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h		
Natural gas	8	20.0	2700	2.9	122/450	55
Liquefied petroleum gases	11	27.5	2500	2.6	122/450	25

### Amal Major industrial burner tubes

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Amal jet
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h		
Natural gas	8	20.0	7800	8.2	122/350	160
Liquefied petroleum gases	11	27.5	4000	4.2	122/350	40

### Amal Maximus industrial burner tubes

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Three Amal jets
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h		
Natural gas	8	20.0	11 700	12.3	122/5700	80
Liquefied petroleum gases	11	27.5	15 600	16.5	122/5700	50

Please specify gas supply and Amal Type No. on all orders for industrial burner tubes.

Minor (left) and Graduate industrial burner tubes







## The Amal Maximus Bunsen Burner

This bunsen burner has been specially designed to give extra-large heat outputs from natural and liquefied petroleum gases. It is not suitable for use with town-gas supplies.

**Jets and aeration** – Whereas the Major model for natural and liquefied petroleum gases contains a single calibrated jet, the Maximus is fitted with three jets giving a larger, evenly distributed gas flow. At 2.7 in (69 mm) diameter, the burner plate is appreciably larger than that of the Major. Accurately predetermined aeration is provided by seven apertures drilled at the base of the burner tube.

**Flame pattern** – The mass of small perfectly aerated cones is similar in form to that of the

Major, but with a burner head of considerably larger surface area, the overall flame envelope (and hence heat output) is correspondingly greater.

**Flame control** – The Maximus is supplied as standard with a flame-control screw and gland. Clockwise rotation of the screw moves the tapered control stem into the gas inlet aperture, progressively restricting the gas flow.

**Weights and dimensions** – The Maximus weighs approximately 1 lb 9 oz (0.72 kg) and is 7.25 in (184 mm) high. Base diameter is 3.25 in (82 mm). Outside diameter of perforated burner plate is 2.7 in (69 mm). The gas connector is suitable for normal laboratory hoses.

### Amal Maximus bunsen burner – technical specification

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Three Amal jets No.
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h		
Natural gas	8	20.0	11 700	12.3	122/5450	80
Liquefied petroleum gases	11	27.5	15 600	16.5	122/5400	50

**Note:** This burner is not suitable for use with town-gas. Spare jets are not provided. **Please specify** gas supply and Amal Type No. on all orders.



## The Amal Graduate Bunsen Burner

**Designed primarily** for school and university use, the Amal Graduate is an efficient and reliable bunsen burner which is also well suited for scientific, medical, and industrial laboratories. It is available in three variants, giving a choice of three different flame patterns.

With its low centre-of-gravity base and smart, durable finish, the Graduate makes an attractive piece of scientific equipment for any laboratory.

**Burner tubes and flame patterns** – The Graduate is available with a choice of three burner tubes as illustrated on this page. Type 41 with a belled top to the tube and perforated burner plate produces a mass of small perfectly aerated cones within an

overall flame envelope; Type 42 with a sturdy concentric-cylinder-type retention head offers a taller flame envelope of smaller diameter; and Type 43 with a fish-tail head gives a wider but thinner flame envelope.

**Aeration** is smoothly adjustable by rotation of the captive one-piece air sleeve positioned over the air vent at the base of the burner tube.

**Weights and dimensions** – The Amal Graduate weighs approximately 9 oz (0.25 kg) and is 5.6 in (143 mm) high. The base diameter is 3.5 in (89 mm) and the gas connector is grooved and tapered from approximately  $\frac{3}{8}$  in (9.5 mm) to  $\frac{1}{4}$  in (6.4 mm) to accept normal laboratory hoses.

### Amal Graduate bunsen burner – technical specification

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Amal jet	Amal tube
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h			
Natural gas	8	20.0	2700	2.9	502/2/41	55	41
	8	20.0	4400	4.6	502/2/42	90	42
Liquefied petroleum gases	11	27.5	2900	3.1	502/2/41	30	41
	11	27.5	3400	3.6	502/2/42	35	42
	11	27.5	2900	3.1	502/2/43	30	43

**Please specify** gas supply and Amal Type No. on all orders. Town-gas types available if required.

### Graduate Type 502/2/42



**Burner Tube 41**  
Perforated burner plate producing mass of perfectly aerated cones



**Burner Tube 42**  
Concentric-cylinder retention head producing taller flame envelope of smaller diameter



**Burner Tube 43**  
Fish-tail burner head producing wide thin flame envelope





## The Amal Minor Bunsen Burner

With heavy black stove-enamelled base for good stability, dull chrome-finished burner tube, and medium heat output, this bunsen burner is ideally suited to the majority of laboratory uses.

The air inlet holes are sized to give optimum proportion of air to gas and aeration is non-adjustable.

**Flame pattern** – The circular burner plate forming the top of the burner tube is made from multi-perforated chromium-plated steel. The resulting flame pattern consists of a mass of small perfectly aerated cones within an overall flame envelope, and the perforated plate helps to prevent flash-back down the burner tube at low gas settings.

**Jets and flame control** – The Minor bunsen burner for use with natural gas or liquefied petroleum gases (butane, propane, etc.) is fitted with a fixed jet accurately calibrated to give the optimum air-to-gas mixture for the

gas in question. Each burner is also supplied with three alternative jets and a jet key to take care of any slight local variations from the normal in either gas pressure or composition.

Flame adjustment for the Minor bunsen burner for natural or liquefied petroleum gases is by means of the laboratory bench tap.

**Insulated handle** – The Amal Minor is fitted with a handle which remains permanently cool, enabling the burner to be moved about on the laboratory bench with complete ease and safety.

**Weights and dimensions** – The Amal Minor weighs approximately 1 lb 2 oz (0.51 kg) and is 5.2 in (132 mm) high. Base diameter is 3.25 in (82 mm). Outside diameter of perforated burner plate is 1 in (25 mm). The gas connector is suitable for normal laboratory hoses.

### Amal Minor bunsen burner – technical specification

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Amal jet	Extra jets for aeration adjustment
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h			
Natural gas	8	20.0	2700	2.9	122/5900	55	50, 60, 70
Liquefied petroleum gases	11	27.5	2500	2.6	122/6000	25	20, 30, 35

Please specify gas supply and Amal Type No. on all orders. Town-gas types available if required.



Minor Type 122/5900 for natural-gas and LPG supply

## The Amal Major Bunsen Burner

The Amal Major bunsen burner has the same base as the Minor, but is fitted with a larger burner tube and head to give approximately double the heat output. It is similar to the Minor in all other respects.

**Weights and dimensions** – The Amal Major weighs approximately 1 lb 4 oz (0.57 kg) and is 7.06 in (179 mm) high. Base diameter is 3.25 in (82 mm). Outside diameter of perforated burner plate is 1.7 in (43 mm). The gas connector is suitable for normal laboratory hoses.

### Amal Major bunsen burner – technical specification

Gas supply	Pressure at burner inlet		Approximate heat input		Amal Type No.	Amal jet	Extra jets for aeration adjustment
	inH <sub>2</sub> O	mbar	Btu/h	MJ/h			
Natural gas	8	20.0	7800	8.2	122/5950	160	150, 170, 180
Liquefied petroleum gases	11	27.5	4000	4.2	122/6001	40	30, 50, 60

Please specify gas supply and Amal Type No. on all orders. Town-gas types available if required.



Major Type 122/5950 for natural-gas and LPG supply