

# LIQUID FUEL (OIL) BURNERS

# Major

Established 1912

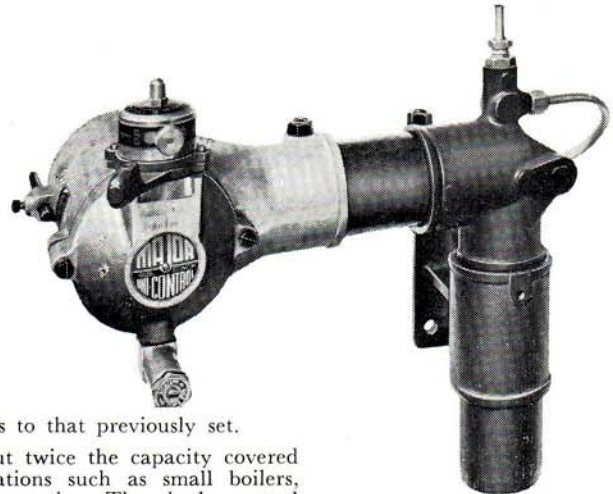
## UNI-CONTROL BURNER

These "Major" low pressure air atomising fuel oil burners have the air and oil valves internally coupled so that by the operation of one lever only, constant burning conditions apply throughout their wide operating range, eliminating the need for mixture setting adjustments every time the fire size is changed. A further advantage of this single control feature is that automatic control can be fitted at any time.

The patented feature which makes this possible, is a slot formed by the inter-relation of two rectangular oil ports. Adjustment screws set the width and minimum opening of this slot, and its length is altered by moving the control lever. At the same time as the slot length is varied and thereby the quantity of oil flowing through it, so also is a valve controlling the flow of air through the burner. By these means and the provision of an overriding orifice, the size of which may be pre-set, the desired constant air/oil ratio can be maintained. For ease in starting, the mixture may be temporarily enriched by pressing on the cap by hand. When released, the mixture reverts to that previously set.

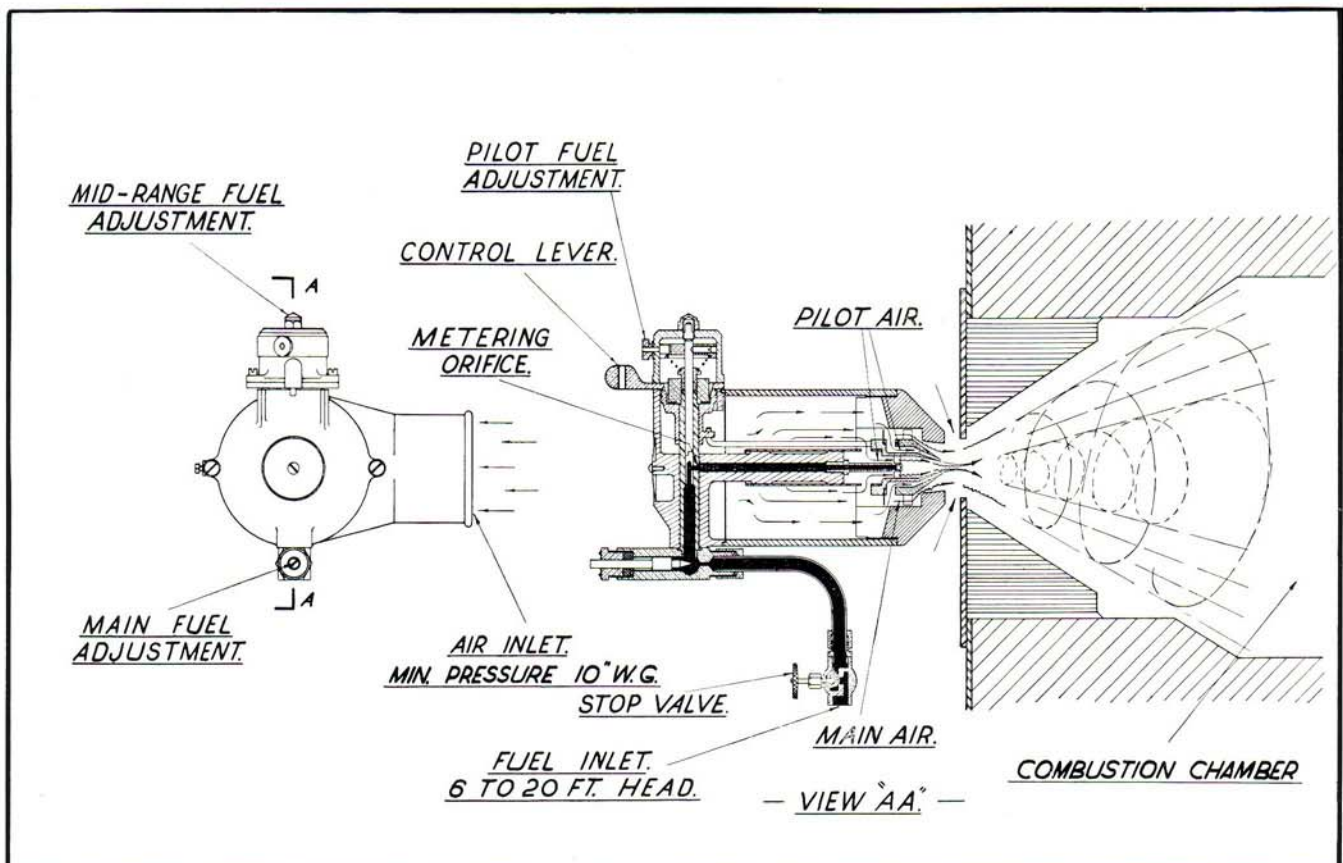
The rated maximum atomising capacity of these burners is about twice the capacity covered by the air flow through the burner, and on suitable applications such as small boilers, secondary air may be used to increase the maximum oil consumption. The single control feature may be retained by connecting the secondary air control shutter to the burner control lever through a suitable linkage.

B.L.P. Burners (Data Sheet No. 6) are usually preferable for the firing of boilers other than the very small sizes.



The "MAJOR"  
Patent Uni-Control  
Oil Burner

## DIAGRAM



# UNI-CONTROL- OPERATION

The "Major" Uni-control burner is suitable for use with normal light fuel oil without preheating, or with preheated heavy fuel oil or tar.

Heat input (after adjusting) is varied by moving the control lever only. They can be arranged for automatic control either individually or in a group, by the addition of suitable equipment. Data Sheet No. 7 illustrates two methods of applying individual automatic control.

When first set up, the burners must be adjusted to suit the local conditions of fuel viscosity and head, and air pressure. Fuel head should be between 6 and 20 feet, and air pressure 12 inches W.G. minimum. Adjustments should be made after the combustion chamber is hot, and in the following order:

(1) **Mid Range:**

Set control lever about one-third open. Rotate engraved plate in centre of cap after slackening central nut.

(2) **Pilot Fire:**

Set control lever at minimum, loosen locking nut and slowly turn to right or left to give the desired mixture.

(3) **High Fire:**

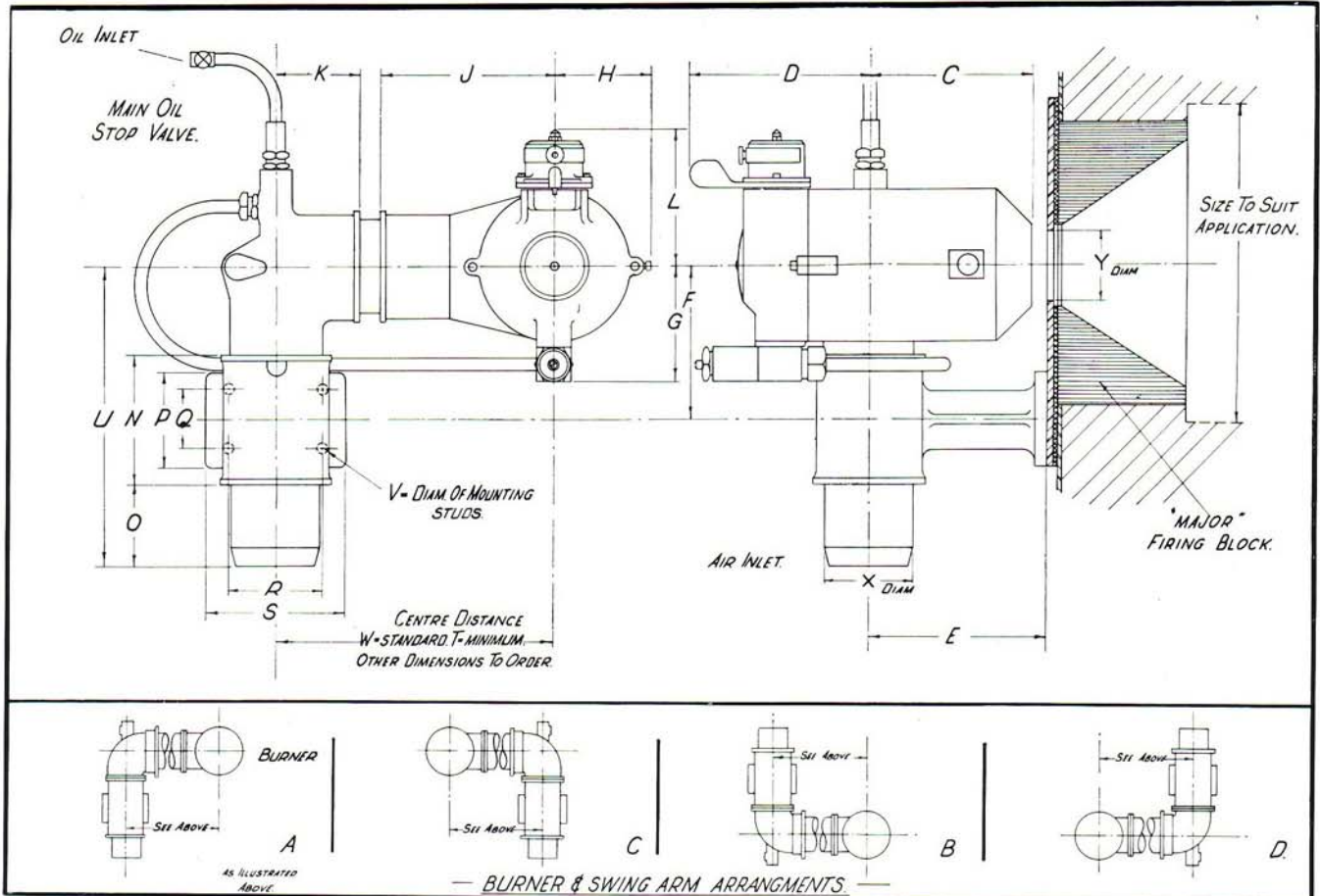
Set control lever at maximum and adjust main fuel screw to suit.

(4) Repeat from (1) until mixture is constant throughout range.

When making adjustments, it should be noted that too much oil causes dense black smoke. Far too little oil may cause an explosive whitish smoke. The best setting, unless heavily oxidising or reducing atmospheres are desired, is that just giving light grey smoke at the stack.

More detailed instructions will be supplied with the burner on request.

## DIMENSIONS - CAPACITIES - HAND OF ASSEMBLY



BURNER SIZE CODE	NOMINAL BURNING RATE (Gallons per hour)			DIMENSIONS [in inches]																	AIR REQUIRED BY BURNER						
	Maximum		Min.	C	D	E	F	G	H	J	K	L	N	O	P	Q	R	S	T	U	V	W	X	Y	Pressure ins. W.G.	Volume C.F.M.	
	Against Slight Back-Pressure (Furnaces)	With Extra Air Induced By Stack (Boilers)																									Pilot Fire
U1	1	2	0.13	2½	4½	2½	3 5/16	2½	2½	2½	2½	2½	3½	4½	2½	5½	4	1½	3	6½	9½	¾	8	2½	1½	12	30
U2	2	4	0.25	3½	5	4	4½	2½	2½	3½	2½	3½	4½	2½	5½	4	1½	3	6½	9½	¾	8	2½	1½	12	60	
U4	4	8	0.5	5	6½	5½	5½	3½	3½	6	3½	4½	4½	2½	5½	4	1½	3	9½	10½	¾	12	3	1½	12	120	
U8	8	16	1.0	7	7½	7½	6½	4½	4½	7½	3½	5½	5½	3½	4	2½	4	6	11½	12½	¾	15	4	2½	12	240	
U16	16	32	2.0	8½	10	9½	7½	5½	5½	9½	5½	6½	7½	5	5	2½	5½	7½	15½	17½	¾	18	5½	3½	12	480	

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