



The KBE rotary cup burner is an optimized, standardized design of Aalborg Industries' wellproven KB burner. With the electronic air/fuel ratio control, an extremely precise combustion control is achieved. The KBE burner is compact and low weight, and the control system user-friendly and safe.

Capacity range: 0.3 – 0.97 MW_e
150–1,300 kg/h

KBE 150 – KBE 1300

rotary cup burner

Description

The KBE rotary cup burner is an optimized version of the KB burner based on well-proven technology. It meets the requirements of stable operation and easy maintenance. Born with an electronic air/fuel ratio control, a very exact control of the KBE burner is possible, and its ignition point enables the most dependable ignition. The KBE burner comes with an improved control panel design, a logical positioning of connection points, and is simple to operate. The KBE burner also has a 5-15% lower power consumption than the KB (relative to burner size). The low weight KBE burner can be bolted or welded onto the boiler and is designed to sustain shipment well due to its sleek design.

The **working principle** of rotary cup burners is based on atomizing by centrifugal force. The atomizing cup is driven at high speed via a heavy-duty belt drive. The oil is gently positioned at low pressure into the spinning cup where gradually, and forced by the centrifugal action of the cup, it moves forward until it is thrown off the cup rim as a very fine, uniform film.

The high-velocity primary air discharged around the cup strikes the oil film, breaks it up and converts it into a mist of fine particles, which are introduced into the combustion zone and burner. The secondary air necessary for complete combustion is supplied by a forced-draught fan through

the windbox and burner air register. A safety device built into the KBE prevents wrong adjustment of tertiary air that may cause damage to the swirler and cup. Normally, atomizing takes place at a viscosity of approx. 45 cSt., which ensures a particle size small enough to burn quickly and completely.

Heavy fuel oil fired rotary cup burner

The KBE burner is a typical rotary cup burner with combustion air according to the forced draught fan location principle. For KBE 150-750 the fan is mounted on the burner. On KBE1000-1300 the fan is delivered as a loose item. Primary air is supplied from the integrated primary air fan for burner types KBE 150-1300.

STANDARD PRODUCT RANGE

Capacity and dimensions

Burner type	Guideline boiler output kg/h	Capacity Min. - max. MW	Capacity Min. - max. kg/h	Burner motor max. power 50 / 60 Hz kW	Burner air pressure loss mm WG	Air flow max. Nm ³ /h	Primary air fan Motor size 60 Hz kW	Air inlet flange position
KBE 150	1,900	0.55-1.7	50-150	2.2 / 2.6	200	2,300	3-6	180°
KBE 250	3,200	0.60-2.8	55-250	2.2 / 2.6	220	3,700	5-9	180°
KBE 350	4,000	0.65-3.9	60-350	3.0 / 3.6	240	5,200	9-13	180°
KBE 450	5,000	0.70-5.0	65-450	3.0 / 3.6	265	6,700	9-17	180°
KBE 550	6,300	0.80-6.2	75-550	5.5 / 6.6	265	8,100	21	180°
KBE 650	8,000	1.1-7.3	100-650	5.5 / 6.6	275	9,000	34	180°
KBE 750	10,000	1.2-8.4	110-750	5.5 / 6.6	305	10,800	Integrated	180°
KBE 1000	12,000	1.3-11.2	115-1,000	7.5 / 9.0	300	13,300	34	0-360°
KBE 1100	14,000	1.35-12.3	120-1,100	7.5 / 9.0	305	15,400	Integrated	0-360°
KBE 1300	16,000	1.9-14.5	170-1,300	7.5 / 9.0	315	17,600	Integrated	0-360°

General burner data

Heavy fuel oil data

Max. viscosity at 50°C	700	cSt	Excess air ratio	1.15	-
Max. viscosity at burner inlet	45	cSt	Combustion air temperature, design	45	°C
Calorific value	40.2	MJ/kg	Fuel oil delivery pressure	2.5	bar (g)

Diesel oil data (for ignition burner)

Viscosity	1.3-12	cSt	Main voltage	440/380	V
Calorific value	42.2	MJ/kg	Pilot voltage	220/110	V
			Frequency	50/60	Hz

General electrical data

Excess air ratio	1.15	-
Combustion air temperature, design	45	°C
Fuel oil delivery pressure	2.5	bar (g)
Main voltage	440/380	V
Pilot voltage	220/110	V
Frequency	50/60	Hz