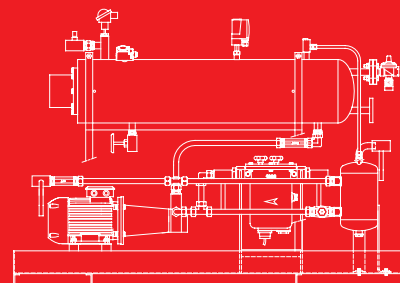


# Light Oil Pumping Unit Skids Heavy Oil Heating and Pumping Unit Skids Industrial Burners

SG - DG SERIES	380 ÷ 3600	l/h
SN - DN SERIES	540 ÷ 3600	l/h



## Light oil pumping unit skids heavy oil heating and pumping unit skids for Industrial Burners

The unit skids of SG, DG, SN and DN series to treat and prepare fuel are an integral part of the industrial burners. The system, designed for oil fuel with max viscosity 65°E at 50°C, consists mainly of a filter, a heater, a pump and a vent valve. Electric or steam/electric heaters may be used and a double system with backup filter and pump is also available.

The unit skids come ready assembled and tested for fast installation and the wide range of models available makes the system suitable for many different applications.

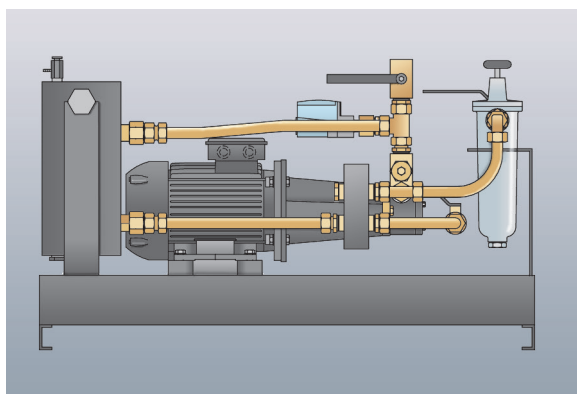
## General Description

<b>SG and DG series</b>	380 ÷ 3600 l/h	pre-set at 28 bar
<b>SN and DN series</b>	540 ÷ 3600 l/h	pre-set at 30 bar

## Light oil pumping unit skids

The unit skids of SG and DG series are designed to treat and prepare light oil; they consists mainly of a filter, a pump and a vent valve.

The unit skids come ready assembled and tested for fast installation and the wide range of models available makes the system suitable for many different application.



Example of light oil pumping unit skid of SG series

B	Gas separator bottle
F	Selfcleaning filter
PO	Minimum oil pressure switch
P	Pumping group with pressure regulator
MP	Pump electric motor
VR	Pressure regulator valve of degasing unit
VC	Drainage valve (normally closed)
MM	Pressure gauge on the delivery circuit

## Available Models

Models				Fuel	Port Size	Delivery At 15 bar (L/h)	Delivery At 28 bar (L/h)	Motor Power (Kw)
SG 250 SC	3/380/60	230/50-60	I	Light oil	1/2"	900	780	1,5
SG 320 SC	3/400/50-3/440/60	230/50-60	I	Light oil	1/2"	910*	810*	1,1*
SG 400 SC	3/400/50-3/440/60	230/50-60	I	Light oil	1/2"	1270*	1140*	2,2*
SG 800 SC	3/400/50-3/440/60	230/50-60	I	Light oil	3/4"	1960*	1700*	3,0*
DG 1000 SC	3/400/50-3/440/60	230/50-60	I	Light oil	1"	2800*	2200*	4,0*

\* these data are referred to 50 Hz supply

## Technical description

The unit skids of SG and DG series are an integral part of the industrial burners; they are equipped with:

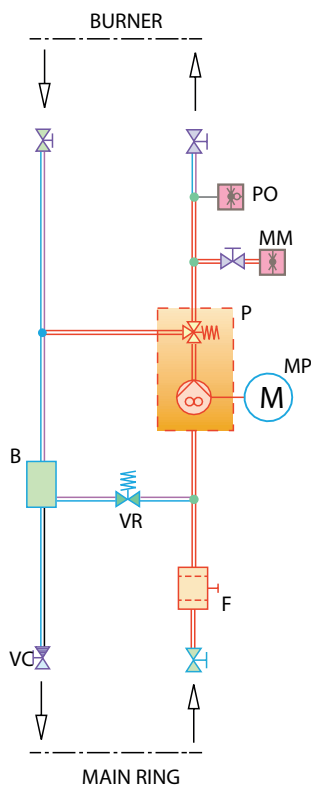
- a self-cleaning filter for a treatment of fuel (see F)
- a motorised pumping group with pressure regulator (see P and MP)
- a pressure gauge on the delivery circuit (see MM)
- a minimum oil pressure switch on the delivery circuit to check the supply pressure to the burner (see PO)
- a gas separator bottle to prevent problem of air in the oil circuit (see B)
- a pressure regulator valve of gas separator bottle to maintain the correct value of pressure in the degassing unit (see VR)
- a drainage valve (normally closed) to facilitate the start-up and maintenance (see VC).

The unit skids of DG series have a double pumping group with filter to enable operation during maintenance or break-down phases.

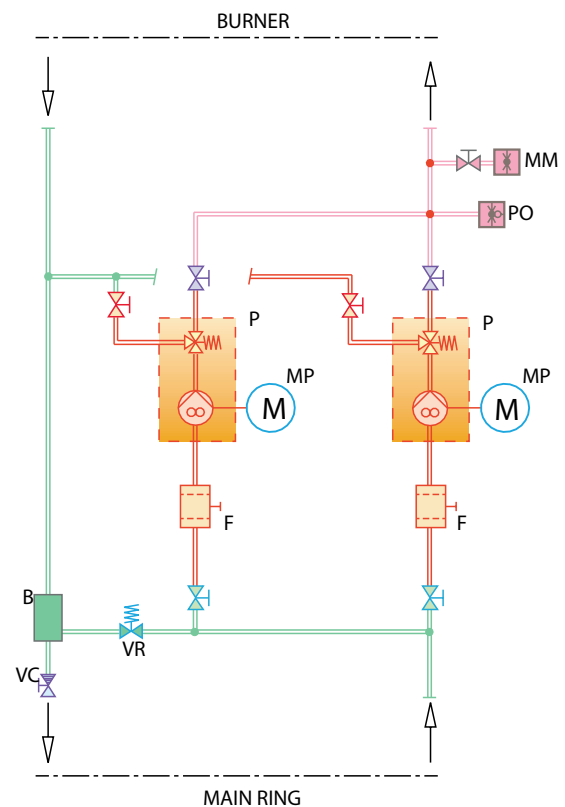
With light oil fuel, the supply circuit from the tank to the unit skids of the burner can be of two types:

- by suction
- pump assisted main ring (typical supply condition: 1 bar).

### SG MODELS:

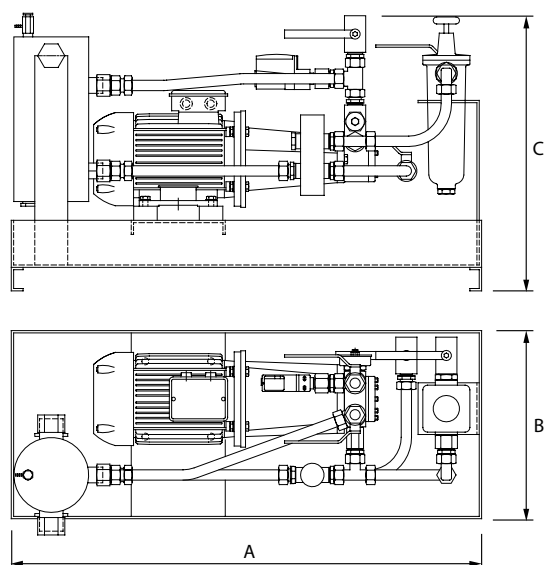


### DG MODELS:



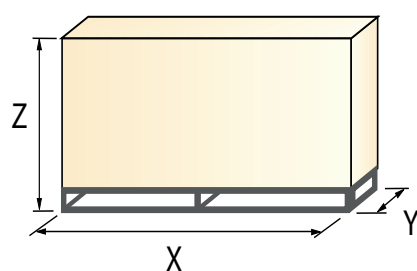
## Overall Dimensions (mm)

### Light oil pumping unit skids



Model	A	B	C
SG 160	1000	400	600
SG 250	1000	400	600
SG 320	1000	400	600
SG 400	1000	400	600
SG 500	1000	400	600
SG 800	1000	400	600
SG 1000	1300	400	650
SG 1500	1300	400	650
DG 160	1000	600	600
DG 250	1000	600	600
DG 320	1000	600	600
DG 400	1000	600	600
DG 500	1000	600	600
DG 800	1000	600	600
DG 1000	1300	800	650
DG 1500	1300	800	650

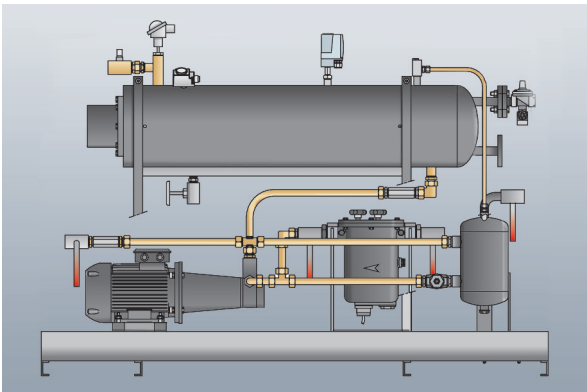
### Packaging



Model	X	Y	Z
SG 160	1260	640	840
SG 250	1260	640	840
SG 320	1260	640	840
SG 400	1260	640	840
SG 500	1260	640	840
SG 800	1260	640	840
SG 1000	1560	640	890
SG 1500	1560	640	890
DG 160	1260	840	840
DG 250	1260	840	840
DG 320	1260	840	840
DG 400	1260	840	840
DG 500	1260	840	840
DG 800	1260	840	840
DG 1000	1560	1040	890
DG 1500	1560	1040	890

# Heavy oil heating and pumping unit skids

The unit skids of SN-EP, DN-EP, SN-EV and DN-EV series are designed to treat and prepare heavy oil with max viscosity 65°E at 50°C; they consists mainly of a filter, a heater, a pump and a vent valve.  
The heater can be Electrical or Electrical/Steam type.  
The unit skids come ready assembled and tested for fast installation and the wide range of models available makes the system suitable for many different application.



B	Gas separator bottle
F	Selfcleaning filter
P0	Minimum oil pressure switch
RS	Heating cartridge
P	Pumping group with pressure regulator
MP	Pump electric motor
PS	Heavy oil heater
TM	Maximum thermostat
Tm	Minimum thermostat
VR	Pressure regulator valve of degasing unit
VC	Drainage valve (normally closed)
VV	Steam circuit solenoid valve
MM	Pressure gauge on the delivery circuit
TP	Temperature probe
VS	Safety valve

## Available Models

Code	Models	Fuel	Port Size	Delivery At 15 bar (l/h)	Delivery At 30 bar (l/h)	Motor Power (Kw)	Electrical heated output (%)	Max Delivery (Kg/h)
on demand	SN 250 EP SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	1/2"	580*	540*	1,1*	14*	265*
on demand	SN 320 EP SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	950*	700*	1,5*	20*	350*
on demand	SN 650 EP SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	1400*	1200*	2,2*	40*	590*
on demand	SN 800 EP SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	1900*	1700*	3*	30*	800*
on demand	DN 800 EP SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	1900*	1700*	3+3*	40"	775*

\* these data are referred to 50 Hz supply - oil viscosity max 65°E at 50°C

Code	Models	Fuel	Port Size	Delivery At 15 bar (l/h)	Delivery At 30 bar (l/h)	Motor Power (Kw)	Electrical heated output (%)	Max Delivery (Kg/h)
on demand	SN 250 EV SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	1/2"	580*	540*	1,1*	100	265*
on demand	SN 400 EV SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	1400*	1200*	2,2*	70	415*
on demand	SN 400 EV SC 3/380/60 230/50-60 I	Heavy oil	3/4"	1680	1440	2,2	70	415
on demand	SN 500 EV SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	1400*	1200*	2,2*	65	590*
on demand	SN 650 EV SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	1900*	1700*	3,0*	70	700"
on demand	SN 800 EV SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	3/4"	1900*	1700*	3,0*	70	800"
on demand	SN 1000 EV SC 3/400/50-3/440/60 230/50-60 I	Heavy oil	1"	2700*	2200*	5,5*	70	1083"

\* these data are referred to 50 Hz supply - oil viscosity max 65°E at 50°C

\*\* percentage of output with electrical heater only

## Technical description

The unit skids of SN-EP, DN-EP, SN-EV and DN-EV series are an integral part of the industrial burners; they are equipped with:

- a self-cleaning filter, heated by electrical resistance, for a treatment of fuel (see F)
- a motorised pumping group with pressure regulator, heated by electrical resistance (see P and MP)
- a pressure gauge on the delivery circuit (see MM)
- an electrical or electrical/steam heavy oil heaters (see PS)
- a minimum and a maximum thermostat to check the oil supply temperature to the burner (see Tm and TM)
- a minimum oil pressure switch on the delivery circuit to check the oil supply pressure to the burner (see PO)
- a temperature probe for the electronic control (see TP)
- a gas separator bottle, heated by electrical resistance, to prevent problem of air in the oil circuit (see B)
- a pressure regulator valve of gas separator bottle to maintain the correct value of pressure in the degasing unit (see VR)

- a drainage valve (normally closed) to facilitate the start-up and maintenance (see VC).

The electrical/steam heaters of SN-EV and DN-EV series are furthermore equipped with:

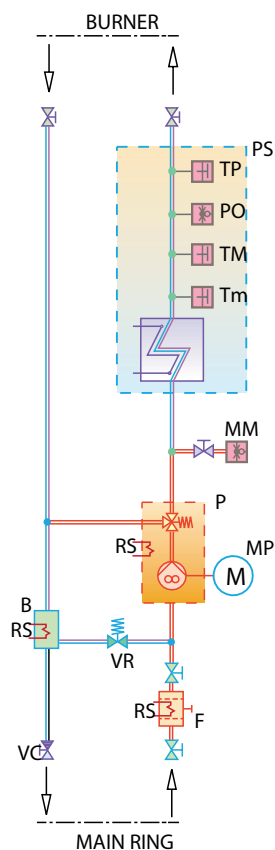
- a steam circuit solenoid valve to allow steam passage through the heater
- a safety valve

An electronic control device on the basis of required heat, regulates steam circuit solenoid valve opening and electrical resistances energising to maintain heavy oil temperature at the correct value.

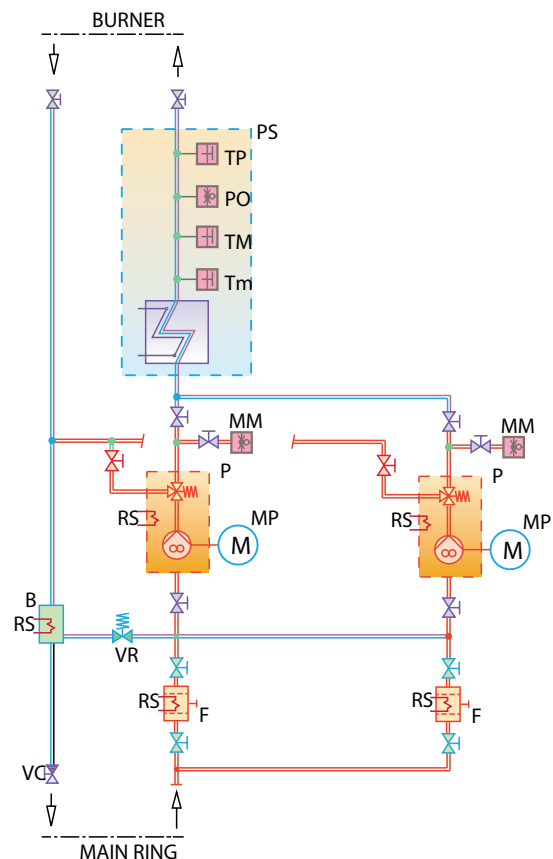
The unit skids of DN-EP and DN-EV series have a double pumping group with filter and pressure gauge to enable operation during maintenance or break-down phases.

With heavy oil fuel, the supply circuit from the tank to the unit skids of the burner is a pump assisted main ring (typical supply condition: 1,5 bar – 60°C).

### SN EP MODELS:

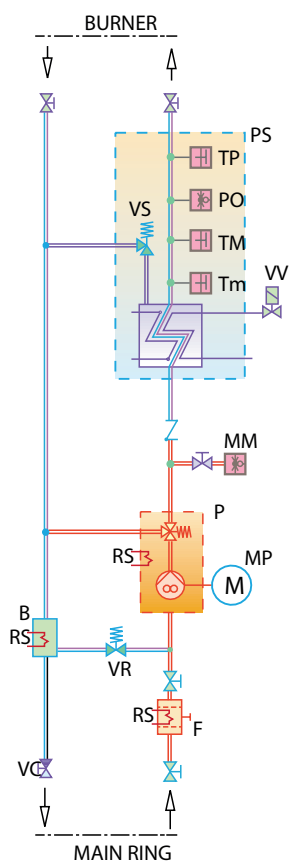


### DN EP MODELS:

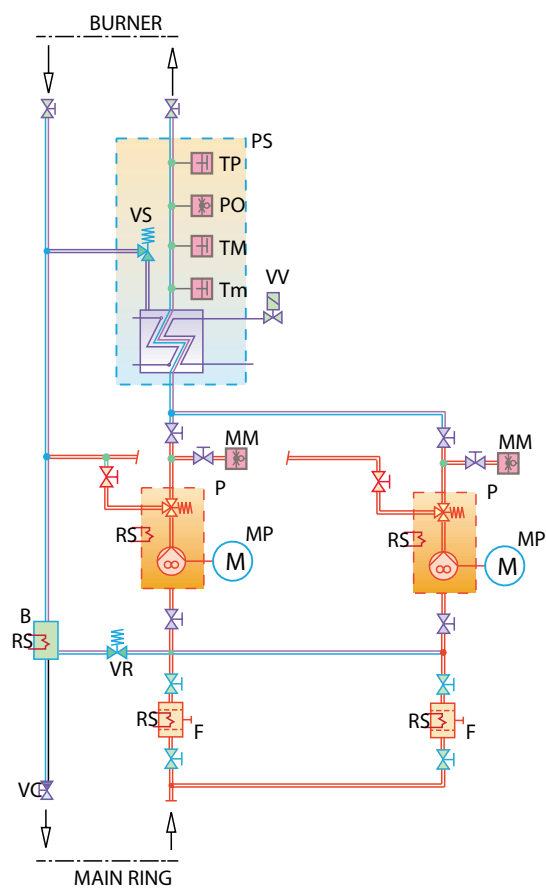




**SN EV MODELS:**



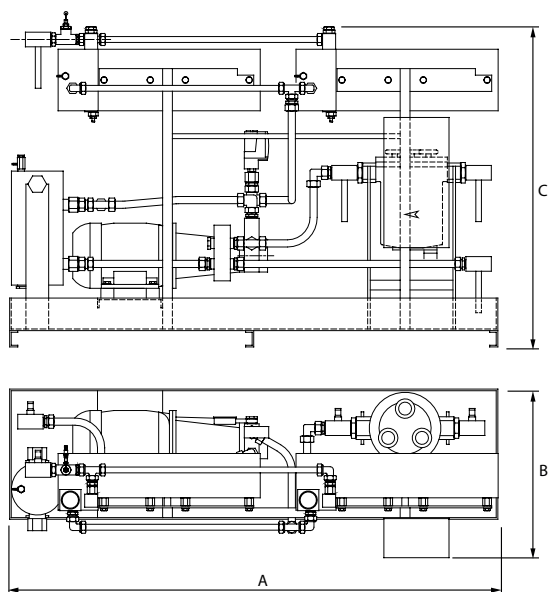
**DN EV MODELS:**



## Overall Dimensions (mm)

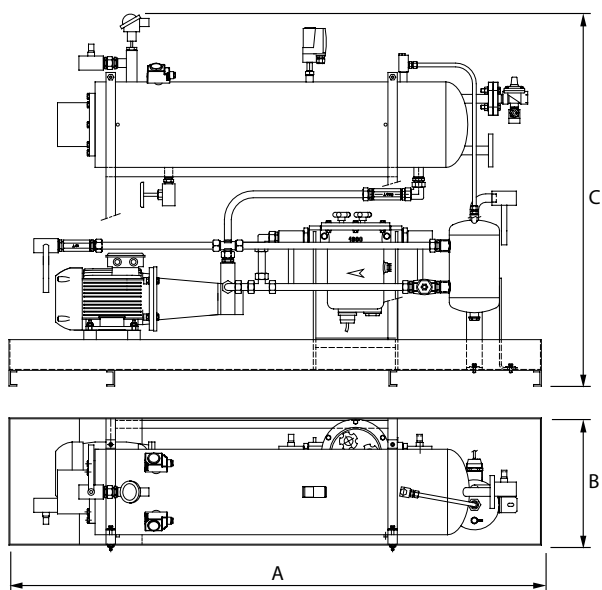
### Heavy oil heating and pumping unit skids

#### Electrical heater



Model	A	B	C
SN 250 EP	1400	400	985
SN 320 EP	1400	400	985
SN 400 EP	1500	400	1100
SN 500 EP	1500	400	1100
SN 650 EP	1500	400	1100
SN 800 EP	1500	400	1100
SN 1000 EP	1500	600	1100
SN 1500 EP	1500	600	1100
DN 250 EP	1400	700	985
DN 320 EP	1400	700	985
DN 400 EP	1500	700	1100
DN 500 EP	1500	700	1100
DN 650 EP	1500	700	1100
DN 800 EP	1500	700	1100
DN 1000 EP	1500	900	1100
DN 1500 EP	1500	900	1100

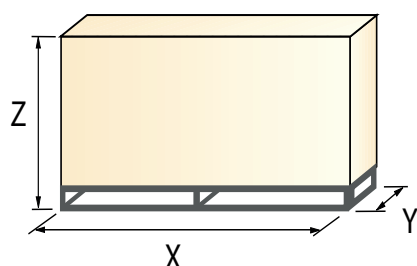
#### Electrical/steam heater



Model	A	B	C
SN 250 EV	1700	400	1105
SN 320 EV	1700	400	1200
SN 400 EV	1700	400	1200
SN 500 EV	1700	400	1200
SN 650 EV	1700	400	1200
SN 800 EV	1700	400	1200
SN 1000 EV	1900	600	1300
SN 1500 EV	1900	600	1300
SN 2000 EV	1900	600	1300
DN 250 EV	1700	700	1105
DN 320 EV	1700	700	1200
DN 400 EV	1700	700	1200
DN 500 EV	1700	700	1200
DN 650 EV	1700	700	1200
DN 800 EV	1700	700	1200
DN 1000 EV	1900	900	1300
DN 1500 EV	1900	900	1300
DN 2000 EV	1900	900	1300

## Overall Dimensions (mm)

### Packaging



Model	X	Y	Z
SN 250 EP	1660	640	1450
SN 320 EP	1660	640	1450
SN 400 EP	1660	640	1450
SN 500 EP	1660	640	1450
SN 650 EP	1660	640	1450
SN 800 EP	1660	640	1450
SN 1000 EP	1660	840	1450
SN 1500 EP	1660	840	1450
DN 250 EP	1660	940	1450
DN 320 EP	1660	940	1450
DN 400 EP	1660	940	1450
DN 500 EP	1660	940	1450
DN 650 EP	1660	940	1450
DN 800 EP	1660	940	1450
DN 1000 EP	1660	1140	1450
DN 1500 EP	1660	1140	1450

Model	X	Y	Z
SN 250 EV	1860	640	1450
SN 320 EV	1860	640	1450
SN 400 EV	1860	640	1450
SN 500 EV	1860	640	1450
SN 650 EV	1860	640	1450
SN 800 EV	1860	640	1450
SN 1000 EV	1995	840	1550
SN 1500 EV	1995	840	1550
SN 2000 EV	1995	840	1550
DN 250 EV	1860	940	1450
DN 320 EV	1860	940	1450
DN 400 EV	1860	940	1450
DN 500 EV	1860	940	1450
DN 650 EV	1860	940	1450
DN 800 EV	1860	940	1450
DN 1000 EV	1995	1140	1550
DN 1500 EV	1995	1140	1550
DN 2000 EV	1995	1140	1550

## Fan Accessories

### Pumping unit for main ring

Model	Electrical supply Ph/V/Hz	Connection in/out	Delivery at 9 bar (l/h)	Electric motor (kW)	Motor speed (rpm)	Code
Max viscosity 12°E at 50 °C						
RG 600	3/400/50	Rp 1/2	600	0,37	1400	3093220
	3/440/60		720	0,43	1700	
RG 1000	3/400/50	Rp 3/4	1000	0,55	1400	3093221
	3/440/60		1200	0,65	1700	
RG 1500	3/400/50	Rp 3/4	1500	0,75	1400	3093222
	3/440/60		1800	0,88	1700	
RG 2000	3/400/50	Rp 3/4	2000	1,1	1400	3093223
	3/440/60		2400	1,27	1700	
RG 3000	3/400/50	Rp 1	3000	1,5	1400	3093224
	3/440/60		3600	1,8	1700	
RG 4500	3/400/50	Rp 1	4500	2,2	1400	on demand
	3/440/60		5400	2,5	1700	
RG 6000	3/400/50	Rp 1	6000	3	1400	3093226
	3/440/60		7200	3,5	1700	
Max viscosity 65°E at 50 °C						
RGS 670	3/400/50	Rp 1	670	0,75	950	3093232
	3/440/60		800	0,88	1100	
RGS 1000	3/400/50	Rp 1	1000	1,1	950	3093227
	3/440/60		1200	1,27	1100	
RGS 1330	3/400/50	Rp 1	1330	1,5	950	3093228
	3/440/60		1600	1,8	1100	
RGS 2000	3/400/50	Rp 1 1/4	2000	2,2	950	on demand
	3/440/60		2400	2,5	1100	
RGS 3000	3/400/50	Rp 1 1/4	3000	3	950	on demand
	3/440/60		3600	3,5	1100	
RGS 4000	3/400/50	Rp 1 1/4	4000	4	950	3093231
	3/440/60		4800	4,8	1100	

### Pumping group with pressure regulator

Model	Electrical supply Ph/V/Hz	Connection in/out	Delivery at 9 bar (l/h)	Electric motor (kW)	Motor speed (rpm)	Code
Max viscosity 65°E at 50 °C						
GP 700	3/400/50	Rp 3/4	700	1,5	1400	3093211
	3/440/60		840		1700	
GP 1200	3/400/50	Rp 3/4	1200	2,2	1400	3093212
	3/440/60		1440		1700	
GP 1700	3/400/50	Rp 3/4	1700	3,0	1400	3093213
	3/440/60		2040		1700	
GP 2200	3/400/50	Rp 1	2200	4,0	1400	3093217
	3/440/60		2640		1700	

## Automatic gas separator

Type	Connection in/out	Max working delivery (l/h)	Code
GS 150	1"1/2 - 1"	1000	3000748
GS 250	1"1/2 - 1" 1/2	2000	3010012

## Heating cartridge

Type	Electrical power (W)	Code
HC 100	100	on demand
HC 160	160	3090621
HC 280	280	3090622

## Line filter

Type	Electrical power (W)	Connection in/out	Max delivery (l/h)	Code
Cartridge filter 100 µm (light oil)				
LOCF 3800	-	Rp 1	3800	3090236
Selfcleaning filter 300 µm				
SCOF 2000	80	Rp 1 1/2	2000	3000790
SCOF 4000	80 - 300	Rp 1 1/2	4000	3010022

## Pressure regulator

Type	Setting range (bar)	Connection in/out	Max delivery (l/h)	Code
BGH 3/4	1 - 4	Rp 3/4	2000	3090569
BGHG 1	1 - 4	Rp 1	6000	3090316
BGHG 1 1/4	1 - 4	Rp 1 1/4	10000	on demand

## Specification

### Designation of series

Series: S single pumping and filtering unit D double pumping and filtering unit									
Fuel: G Light oil K Kerosene N Heavy oil									
Type: 160 - 250 - 320 - 400 - 500 - 650 - 800 - 1000 - 1500 - 2000									
Heating type: EP electrical heating EV mixed heating: electrical/steam V steam heating AS superheated water heating									
Electrical connection: SB shunt box SC direct connection (standard)									
Electrical supply: 3/400/50 3/440/60 3/380/60 3/230/50 3/254/60 3/220/60									
Control circuit electrical supply: 230/50-60Hz 110/50-60Hz									
Output meter: CL local meter CI impulses emitter meter									
Emulsion kit: D1 n°1 distributor D2 n°2 distributors									
Motorized filter: MF									
Installation: I internal O external									

S	N	500	EV	SB	3/400/50	230/50-60	-	-	-	I
BASIC DESIGNATION										
EXTENDED DESIGNATION					OPTIONS AVAILABLE ON REQUEST					

## State of supply

- Base in painted steel sheet
- Manual shut off valve on the output circuit
- Selfcleaning filter (double on the D version)
- Gas separator group
- Heavy oil pressure regulator on the burner oil circuit
- Pumping group (double on the D version)
- Pressure gauge
- Electrical heater (on the EP models)
- Mixed heating: electrical/steam (on the EV models)
- Minimum oil pressure switch
- Maximum thermostat
- Minimum thermostat
- Shunt box
- Steam circuit solenoid valve
- Temperature probe
- Safety valve
- Heating cartridge.

# Riello Burners a world of experience in every burner we sell.

05/2016

TS0022UK02



[ 1 ]



[ 2 ]

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S. PIETRO, LEGNAGO (VERONA) - ITALIA

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S. PIETRO, LEGNAGO (VERONA) - ITALIA

Across the world, Riello sets the standard in reliable and high efficiency burner technology.

With burner capacity from 5 kW to 48 MW, Riello gas, oil, dual fuel and Low Nox burners deliver unbeatable performance across the full range of residential and commercial heating applications, as well as in industrial processes.

With headquarter in Legnago, Italy, Riello has been manufacturing premium quality burners for over 90 year. The manufacturing plant is equipped with the most innovative systems of assembling lines and modern manufacturing cells for a quick and flexible response to the market.

Besides, the Riello Combustion Research Centre, located in Angiari, Italy, represents one of the most modern facility in Europe and one of the most advanced in the world for the development of the combustion technology.

Today, the company's presence on worldwide markets is distinguished by a well-constructed and efficient sales network, alongside many important Training Centres located in various countries to meet its customers' needs. Riello has 13 operational branches abroad (in Europe, America and Asia), with customers in over 60 countries.

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