

## PRESS P/N – PN ECO Series

Modulating Heavy Oil Burners

|               |           |   |      |    |
|---------------|-----------|---|------|----|
| P 140 P/N     | 400/800   | ÷ | 1600 | kW |
| P 200 P/N     | 570/1140  | ÷ | 2280 | kW |
| P 300 P/N     | 683/1710  | ÷ | 3420 | kW |
| P 450 P/N     | 1140/2615 | ÷ | 5130 | kW |
| P 140 P/N ECO | 400/800   | ÷ | 1600 | kW |
| P 200 P/N ECO | 570/1140  | ÷ | 2280 | kW |
| P 300 P/N ECO | 683/1710  | ÷ | 3420 | kW |
| P 450 P/N ECO | 1140/2615 | ÷ | 5130 | kW |



The PRESS P/N series of burners covers a firing range from 800 to 5130 kW. They have been designed in three versions for use in commercial and industrial installation, to burn different oil viscosity from 7 up to 60°E @ 50°C. Operation can be "two stage progressive" or, alternatively, "modulating" with the installation of a PID logic regulator and respective probes, which guarantees a turn down ratio of 3:1.

The versatility of this range makes the burner well suited for use on steam boilers where the load factor is subject to wide variations, on thermal oil boilers and on boilers for particular heating plants, as hospitals or similar. Simplified maintenance is achieved by the Riello designed slide bar system, which allows easy access to all of the essential components of the combustion head.

A RIELLO burner (Heat Generator), where it is matched with a water-based boiler (Heater Housing) with a nominal output  $\leq 400$  kW, providing heat for heating purposes and heat to deliver sanitary hot water, can be installed:

- With boilers (heater housings) already in service in the field, for replacement, in conformity to Article 1, paragraph 2, point (G) of the EU Regulation No. 813/2013;
- With boilers (heater housings) on a new installation, put on the market after 26th of September 2015;
- With all new boilers (heater housings), where placed on the market before 26th of September 2015.

# Technical Data

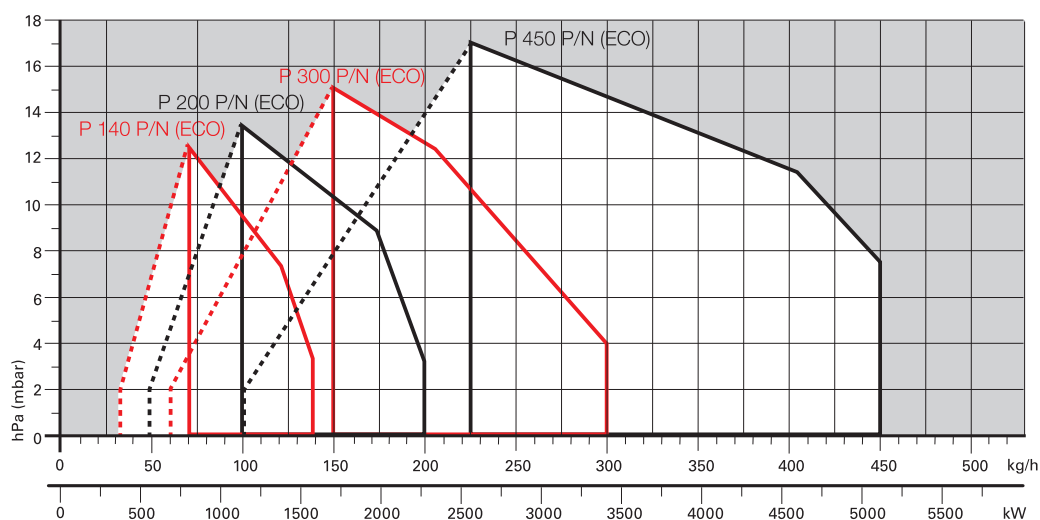
| MODEL                           |                          |              | P 140 P/N (ECO)   | P 200 P/N (ECO) | P 300 P/N (ECO)    | P 450 P/N (ECO)  |
|---------------------------------|--------------------------|--------------|---|-----------------|--------------------|------------------|
| Burner operation mode           |                          |              | Modulating (with regulator and probes accessories) or<br>Two stage progressive                                      |                 |                    |                  |
| Modulation ratio at max. output |                          |              | 4 ÷ 1   |                 |                    |                  |
| Servomotor                      | type                     |              | SQM 10  |                 |                    |                  |
|                                 | run time s               |              | 42  |                 |                    |                  |
| Heat output                     | kW                       |              | 399/798 ÷ 1595  | 570/1140 ÷ 2279 | 684/1709 ÷ 3418    | 1139/2564 ÷ 5128 |
|                                 | Mcal/h                   |              | 343/686 ÷ 1372  | 490/980 ÷ 1960  | 588/1470 ÷ 2940    | 980/2205 ÷ 4410  |
|                                 | Kg/h                     |              | 35/70 ÷ 140   | 50/100 ÷ 200    | 60/150 ÷ 300       | 100/225 ÷ 450    |
| Working temperature             | °C min./max.             |              | 0/40  |                 |                    |                  |
| FUEL/AIR DATA                   |                          |              |   |                 |                    |                  |
| Heavy oil net calorific value   | kWh/kg                   |              | 11.4  |                 |                    |                  |
|                                 | kcal/kg                  |              | 9800  |                 |                    |                  |
|                                 | MJ/kg                    |              | 41  |                 |                    |                  |
| Low viscosity version           | mm²/s (cSt)              |              | 50 @ 50°C   |                 |                    |                  |
| Pump                            | type                     |              | Suntec E7   | Suntec TA2      | Suntec TA3         | Suntec TA4       |
|                                 | delivery                 | Kg/h         | 340 (at 25 bar)   | 470 (at 25 bar) | 750 (at 25 bar)    | 940 (at 25 bar)  |
| Medium viscosity version        | mm²/s (cSt)              |              | 200 @ 50°C (with heavy oil kit already installed in factory)  |                 |                    |                  |
| Pump                            | type                     |              | Suntec E7   | Suntec TA2      | Suntec TA3         | Suntec TA4       |
|                                 | delivery                 | Kg/h         | 340 (at 25 bar)   | 470 (at 25 bar) | 750 (at 25 bar)    | 940 (at 25 bar)  |
| High viscosity version          | mm²/s (cSt)              |              | 450 @ 50°C (separate 1400 rpm pump + heavy oil kit + pipes heating cable<br>already installed installed in factory) |                 |                    |                  |
| Pump                            | type                     |              | Suntec A3   | Suntec TA4      | Suntec TA5         | HP NVBHR M       |
|                                 | delivery                 | Kg/h         | 380 (at 25 bar)   | 480 (at 25 bar) | 690 (at 25 bar)    | 1150 (at 25 bar) |
| Atomised pressure               | bar                      |              | 25  |                 |                    |                  |
| Fuel temperature                | max. °C                  |              | 140   |                 |                    |                  |
| Fan                             | type                     |              | Centrifugal with forward tilted blades  |                 |                    |                  |
| Air temperature                 | max. °C                  |              | 60  |                 |                    |                  |
| ELECTRICAL DATA                 |                          |              |   |                 |                    |                  |
| Start up                        | type                     |              | Star - Delta  |                 |                    |                  |
| Electrical supply               | Ph/Hz/V                  |              | 3N/50/400 ~ (± 10%)   |                 | 3/50/230 ~ (± 10%) |                  |
| Electrical power consumption    | Max. kW                  |              | 18.5  | 19.5            | 32                 | 37               |
| Electrical motor                | kW                       |              | 3   | 4               | 7.5                | 15               |
| Fan motor                       | rated current            | A            | 13.5/8  | 16.4/9.5        | 30/17.5            | 50.2/29          |
|                                 | start up current         | A            | 86/51   | 83/48           | 195/113            | 301/174          |
|                                 | protection level         | IP           | 55  |                 |                    |                  |
| Pump motor                      | electrical power         | kW           | 0.55  | 0.75            | 1.1                | 2.2              |
|                                 | rated current            | A            | 1.8/3.1   | 2.1/3.7         | 2.7/4.7            | 5.5/9.5          |
| Auxiliary electrical supply     | Ph/Hz/V                  |              | 1/50/230 ~ (± 10%)  |                 |                    |                  |
| Heaters electrical power        | kW                       |              | 14  | 14              | 19.6               | 19.6             |
| Auxiliary electrical power      | kW                       |              | 1.5   | 1.5             | 2.9                | 2.4              |
| Electrical protection           | IP                       |              | IP 40   |                 |                    |                  |
| Control box                     | type                     |              | LAL 1.25  |                 |                    |                  |
| Ignition transformer            | V1 - V2                  |              | 230 V - 1 x 8 Kv  |                 |                    |                  |
|                                 | I1 - I2                  |              | 1.8 A - 30 mA   |                 |                    |                  |
| Operation                       |                          |              | Intermittent (at least one stop every 24h)  |                 |                    |                  |
| EMISSIONS                       |                          |              |   |                 |                    |                  |
| Noise levels                    | sound pressure           | dB (A)       | 86.2  | 85.4            | 89.5               | 90               |
|                                 | sound power              |              | 97.2  | 96.4            | 100.5              | 101              |
|                                 | CO emission              | mg/kWh       | < 130   |                 | < 145              |                  |
| Light oil                       | grade of smoke indicator | N° Bacharach | < 6   |                 | < 5                |                  |
|                                 | CxHy emission            | mg/kWh       | --  |                 |                    |                  |
|                                 | NOx emission             | mg/kWh       | < 780   |                 | < 550              |                  |

| MODEL           | P 140 P/N (ECO)                      | P 200 P/N (ECO) | P 300 P/N (ECO) | P 450 P/N (ECO) |
|-----------------|--------------------------------------|-----------------|-----------------|-----------------|
| <b>APPROVAL</b> |                                      |                 |                 |                 |
| Directive       | 2006/42/EC – 2014/30/UE – 2014/35/UE |                 |                 |                 |
| Conforming to   | EN 267                               |                 |                 |                 |
| Certification   | --                                   |                 |                 |                 |

Reference conditions: Temperature: 20°C – Pressure: 1013.5 mbar – Altitude: 0 m a.s.l. – Noise measured at a distance of 1 meter. Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

## Firing Rates

### PRESS 140-200-300-450 P/N (ECO)



Useful working field  
for choosing the  
burner

Test conditions  
conforming to  
EN267  
Temperature: 20°C  
Pressure: 1013.5  
mbar  
Altitude: 0 m a.s.l.

# Fuel Supply

## HYDRAULIC CIRCUIT

Various hydraulic circuits are available, depending on fuel output asset according to local norms of steam generators. The burners are fitted with two valves and an oil preheater with thermostats along the oil line from the pump to the nozzle, where the opening is regulated from a needle valve.

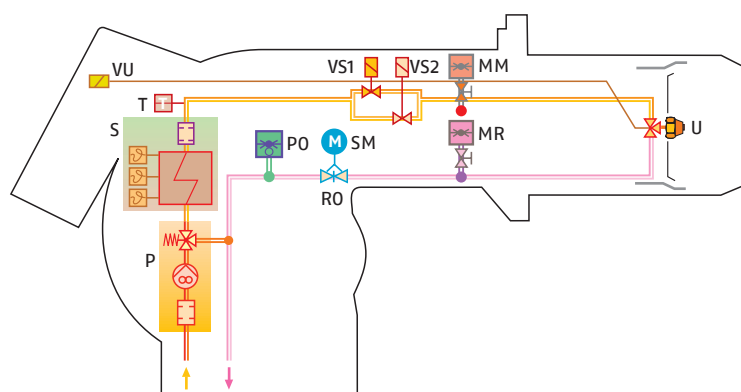
A pressure regulator on the return circuit from the nozzle allows to vary the quantity of fuel burnt.

For heavy oil preheating, a special kit with three electrical heaters at the pump, at the regulator and at the nozzle can be used.

The models are fitted with a maximum pressure switch on the oil return circuit.



Hydraulic circuit



|            |   |
|------------|---|
| <b>MM</b>  | Oil delivery gauge  |
| <b>MR</b>  | Pressure gauge on the return circuit                                  |
| <b>P</b>   | Pump with filter and pressure regulator on the output circuit         |
| <b>PO</b>  | Oil pressure switch on the return circuit                             |
| <b>RO</b>  | Pressure regulator on the return circuit                              |
| <b>S</b>   | Oil preheater with filter, maximum, minimum and regulation thermostat |
| <b>SM</b>  | Servomotor  |
| <b>T</b>   | Thermometer   |
| <b>U</b>   | Nozzle  |
| <b>VU</b>  | Nozzle needle valve   |
| <b>VSn</b> | Delivery oil valves   |

## HYDRAULIC CIRCUIT

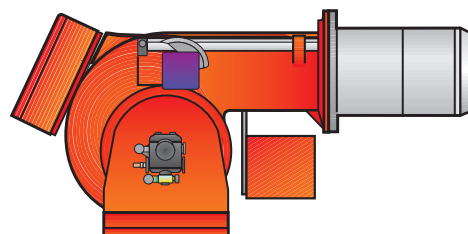
The modulating burner P/N series can burn different heavy oil types from 7 up to 60°E @ 50°C (50 up to 450 cSt @ 50°C). For different viscosity levels Riello recommends 3 different configurations:

- 1) PRESS P/N version for viscosity up to 7°E (50 mm<sup>2</sup>/s, cSt), Type MEDIUM HEAVY OIL / USA n° 4:  
basic version with 2800 rpm oil pump installed directly on fan motor shaft (see available codes in the table above)
- 2) PRESS P/N version for viscosity up to 20°E (150 mm<sup>2</sup>/s, cSt), Type BUNKER B / USA n° 5:  
as basic version + heavy oil heating cartridges factory installed on nozzle, pump and valves group (please ask for specific code)
- 3) PRESS P/N ECO version for viscosity up to 20°E (150 mm<sup>2</sup>/s, cSt), Type BUNKER B / USA n° 5:  
with separate 1400 rpm low speed pump, heavy oil heating cartridges factory installed on nozzle, pump and valves group (please ask for specific code)
- 4) PRESS P/N and PRESS P/N ECO versions for viscosity up to 60°E (450 mm<sup>2</sup>/s, cSt), Type BUNKER C / USA n° 6:  
as versions 2) or 3) with pipes heating cable factory installed (please ask for specific code).

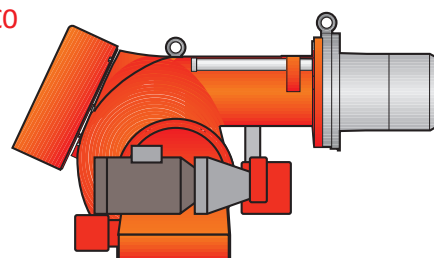
Special configuration on demand:

- Steam oil pre-heater on P/N ECO models.

### PRESS P/N



### PRESS P/N ECO



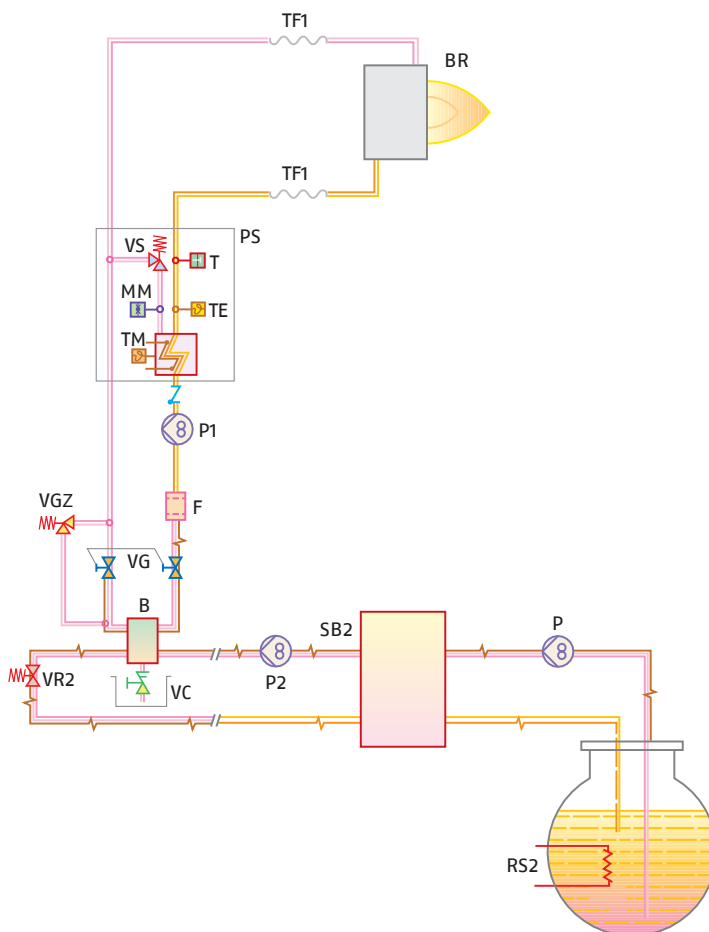
## SELECTING THE FUEL SUPPLY LINES

The fuel feed must be completed with the safety devices required by the local regulations in force.

### IMPORTANT NOTES

- The oil could easily flow through the pipes if those are properly sized, protected and heated (by electricity, steam or hot water).
- In order to limit gas or steam production the oil pressure into the gas separator shall be set in function of the supply temperature, see instructions manual.
- The forwarding pump should have at least a double capacity than that one of the burner.

For several burners supplied through the same ring supply line, the forwarding pump should have a capacity of approximatively 30% more than the sum of the single burners outputs.

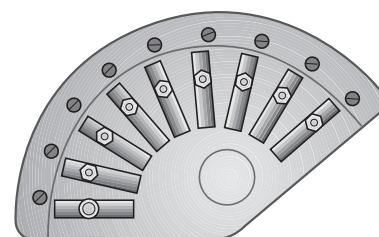


|            |   |
|------------|---|
| <b>B</b>   | Gas separator bottle  |
| <b>BR</b>  | Burner  |
| <b>F</b>   | Oil filter  |
| <b>MM</b>  | Oil delivery gauge  |
| <b>P</b>   | Double pumping unit with filter and heater on transfer ring |
| <b>PS</b>  | Electrical preheater  |
| <b>P1</b>  | Pump with heater – burner circuit                           |
| <b>P2</b>  | Double pumping unit with filter and heater on main ring     |
| <b>RS2</b> | Tank heater   |
| <b>SB2</b> | Service tank  |
| <b>T</b>   | Thermometer   |
| <b>TE</b>  | Temperature switch regulation                               |
| <b>TF1</b> | Flexible oil line   |
| <b>TM</b>  | Max oil temperature switch                                  |
| <b>VC</b>  | Vent valve  |
| <b>VGZ</b> | Safety valve – burner circuit                               |
| <b>VR2</b> | Oil valve – main ring                                       |
| <b>VS</b>  | Preheater safety valve                                      |

## Ventilation

The ventilation circuit is provided with a forward blades centrifugal fan, which guarantees high pressure levels at the required air deliveries and permits installation flexibility.

In spite of the remarkable output power and of the very high pressure performances, structures of PRESS models are extremely compact. The use of sound proofing boxes helps in reducing the noise level. A variable profile cam connects fuel and air setting, ensuring fuel efficiency in all firing rates.



Mechanical cam for air/fuel setting

## Combustion Head

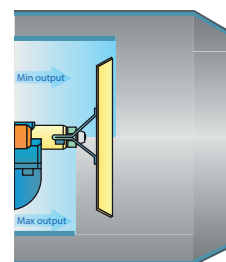
Two different lengths of the combustion head can be chosen for the various models of the PRESS P/N series of burners.

The choice depends on the thickness of the front panel and the type of the boiler.

Depending on the type of heat generator, it is necessary to check the correct head penetration into the combustion chamber.

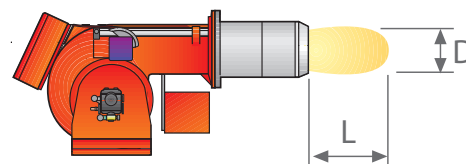
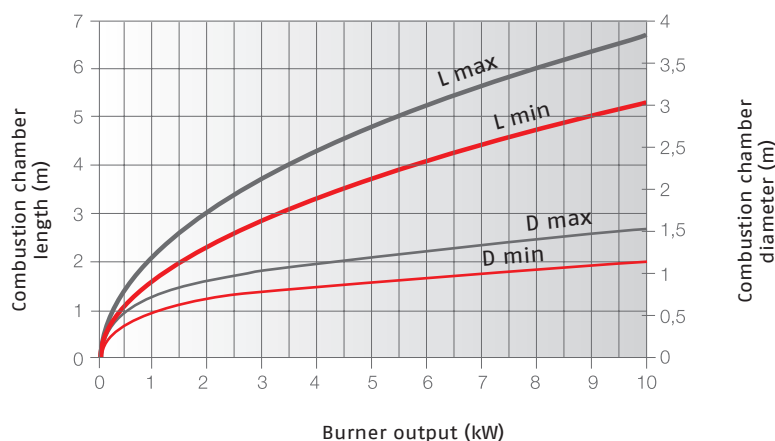
The internal position of the combustion head can easily be adjusted: refer to the burner instruction manual for the complete procedure.

The following diagram shows the flame dimensions in relation to the burner output. The length and diameter shown in the diagram below should be employed preliminary check: it is required a more careful investigation if combustion chamber dimensions are much different from the above reported values.



Combustion head

### SUGGESTED COMBUSTION CHAMBER DIMENSIONS



Example:

Burner thermal output = 3500 kW;

L Combustion Chamber (m) = 3.5 m (medium value);

D Combustion Chamber (m) = 1 m (medium value)

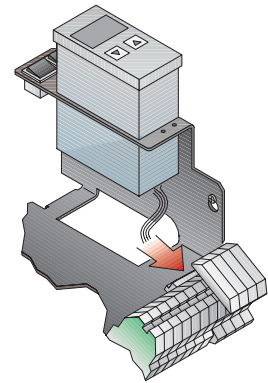
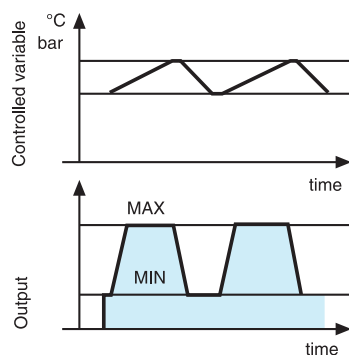
# Operation

## BURNER OPERATION MODE

The PRESS P/N series of burners can have “two stage progressive” or “modulating” operation.

On “two stage progressive” operation, the burner gradually adapts the output to the requested level, by varying between two pre-set levels.

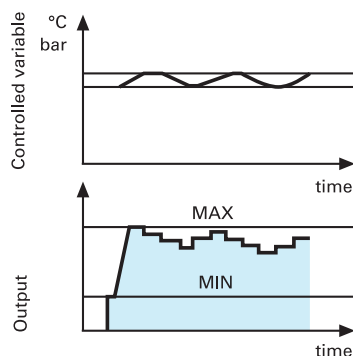
### “TWO STAGE PROGRESSIVE” OPERATION



Regulator

On “modulating” operation, normally required in steam generators, in superheater boilers or diathermic oil burners, a specific regulator and probes are required. These are supplied as accessories that must be ordered separately. The burner can work for long periods at intermediate output levels.

### “MODULATING” OPERATION

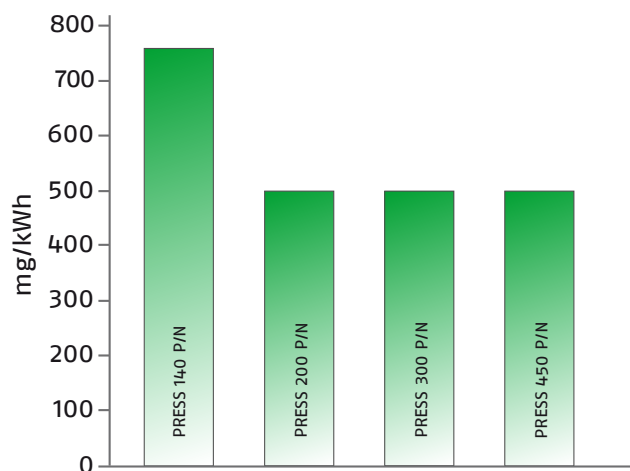




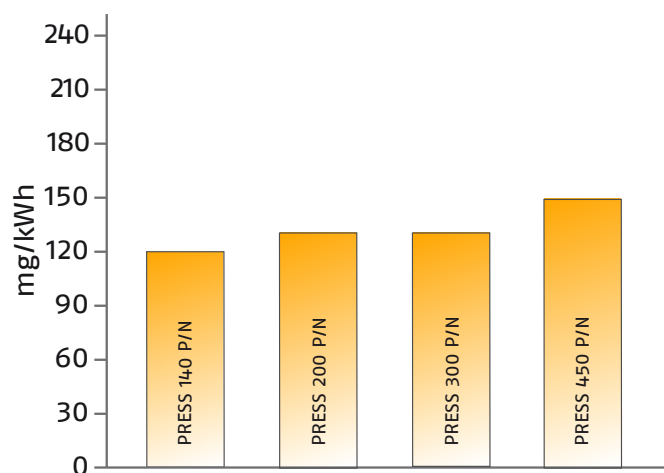
## Emissions

The emission data has been measured in the various models at maximum output, according to EN 267 standard.

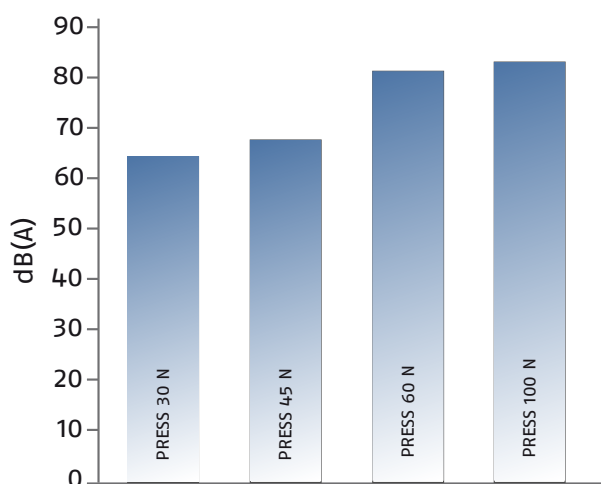
### NO<sub>2</sub> EMISSIONS



### CO EMISSIONS



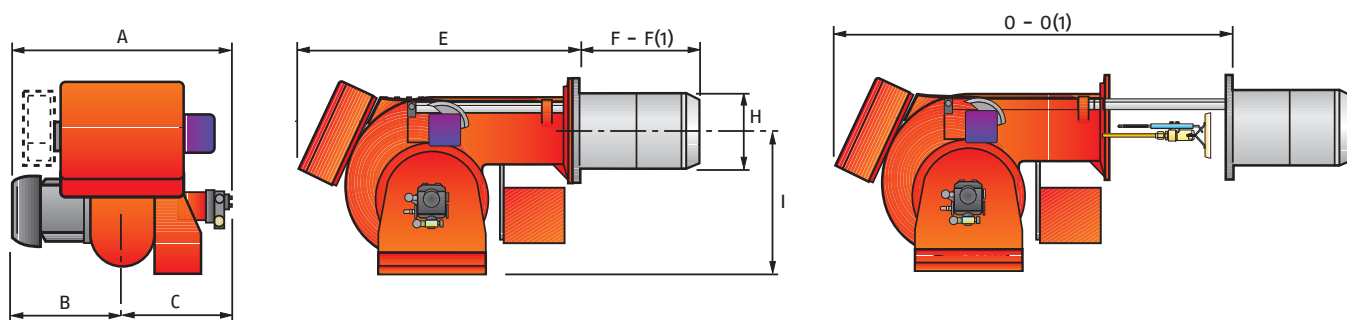
### NOISE EMISSIONS



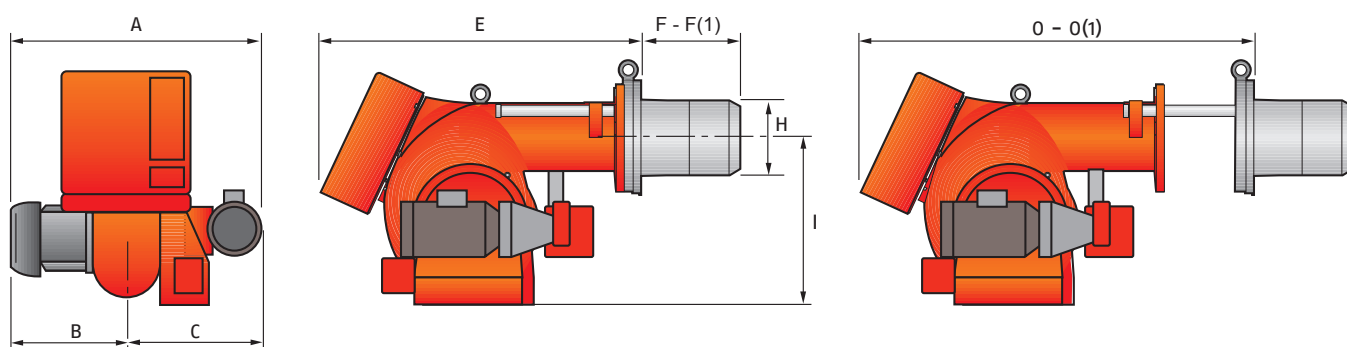
## Overall Dimensions (mm)

These models are distinguished by their reduced size, in relation to their outputs, which means they can be fitted to any boiler on the market.

### PRESS P/N



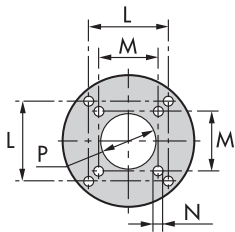
### PRESS P/N ECO



| MODEL         | A    | B   | C   | E    | F - F (1) | H   | I   | O - O (1)   |
|---------------|------|-----|-----|------|-----------|-----|-----|-------------|
| P 140 P/N     | 796  | 396 | 400 | 910  | 323 - 433 | 222 | 467 | 1390 - 1390 |
| P 200 P/N     | 796  | 396 | 400 | 910  | 352 - 462 | 250 | 467 | 1390 - 1390 |
| P 300 P/N     | 858  | 447 | 411 | 1020 | 376 - 506 | 295 | 496 | 1535 - 1685 |
| P 450 P/N     | 950  | 508 | 442 | 1090 | 435 - 565 | 336 | 525 | 1665 - 1820 |
| P 140 P/N ECO | 900  | 396 | 504 | 890  | 323 - 433 | 222 | 467 | 1370 - 1370 |
| P 200 P/N ECO | 900  | 396 | 504 | 890  | 352 - 462 | 250 | 467 | 1370 - 1370 |
| P 300 P/N ECO | 984  | 447 | 537 | 1000 | 376 - 506 | 295 | 496 | 1515 - 1665 |
| P 450 P/N ECO | 1100 | 508 | 592 | 1090 | 435 - 565 | 336 | 525 | 1665 - 1820 |

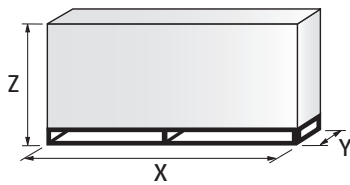
(1) Length with extended combustion head

**BURNER – BOILER MOUNTING FLANGE**



| MODEL           | L   | M   | N    | P   |
|-----------------|-----|-----|------|-----|
| P 140 P/N (ECO) | 260 | 230 | M 14 | 225 |
| P 200 P/N (ECO) | 260 | -   | M 16 | 255 |
| P 300 P/N (ECO) | 260 | -   | M 18 | 300 |
| P 450 P/N (ECO) | 310 | -   | M 20 | 350 |

**PACKAGING**



| MODEL           | X    | Y    | Z    | kg  |
|-----------------|------|------|------|-----|
| P 140 P/N (ECO) | 1740 | 990  | 950  | 180 |
| P 200 P/N (ECO) | 1740 | 990  | 950  | 220 |
| P 300 P/N (ECO) | 2040 | 1180 | 1125 | 238 |
| P 450 P/N (ECO) | 2040 | 1180 | 1125 | 300 |

## Installation Description

Skilled and qualified personnel must perform installation, start up and maintenance.

All operations must be carried in accordance with the technical handbook supplied with the burner.

### BURNER SETTING

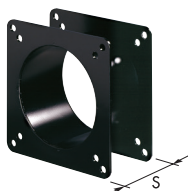
- ▶ All the burners have slide bars, for easier installation and maintenance.
- ▶ After removing the cover, the split pin and the pin, the nuts and the screws, dismantle the blast tube from the burner of approximately 100–120mm and fix it to the boiler.
- ▶ Adjust the combustion head.
- ▶ Refit the burner casing to the slide bars.
- ▶ Install the nozzles, choosing these on the basis of the maximum boiler output and following the diagrams included in the burner instruction handbook.
- ▶ Check the position of the electrodes.
- ▶ Close the burner, fasten the screws, the nuts, the split pin and the pin.

### HYDRAULIC AND ELECTRICAL CONNECTIONS AND START-UP

- ▶ The burners are supplied for connection to two pipes fuel supply system.
- ▶ Connect the ends of the flexible pipes to the suction and return pipework using the supplied nipples.
- ▶ Make the electrical connections to the burner following the wiring diagrams included in the instruction handbook.
- ▶ Prime the pump by turning the motor (after checking rotation direction if it is a three phase motor).
- ▶ On start up, check:
  - pressure pump and valve unit regulator (to max. and min.);
  - combustion quality, in terms of unburned substances and excess air.

## Burner accessories

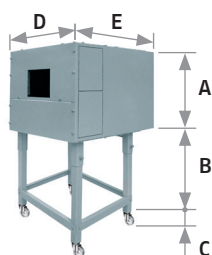
### SPACER KIT



If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the list.

| BURNER                | SPACER THICKNESS<br>S (mm) | CODE    |
|-----------------------|----------------------------|---------|
| P 140 P/N - P 200 P/N | 110                        | 3000722 |
| P 300 P/N             | 130                        | 3000723 |
| P 450 P/N             | 130                        | 3000751 |

### SOUND PROOFING BOX



If noise emission needs reducing even further, sound-proofing boxes are available. In case of generator heights, where a lower dimension "B" is required, ask for the Box Support Kit code 20065135.

The useful dimensions are 40 mm less than the total dimensions indicated in the table (A, D, E). Not suitable for outdoor use.

| BURNER              | BOX<br>TYPE | A<br>(mm) | B (mm)<br>min-max | C<br>(mm) | D<br>(mm) | E<br>(mm) | [dB(A)]<br>(*) | CODE    |
|---------------------|-------------|-----------|-------------------|-----------|-----------|-----------|----------------|---------|
| P 140 - 200 P/N     | C4/5        | 850       | 160-980           | 110       | 980       | 930       | 10             | 3010404 |
| P 300 - 450 P/N     |             |           |                   |           |           |           |                |         |
| P 140 - 200 P/N ECO | C7          | 1255      | 160-980           | 110       | 1140      | 1345      | 10             | 3010376 |
| P 300 - 450 P/N ECO |             |           |                   |           |           |           |                |         |

(\*) Average noise reduction according to EN 15036-1 standard

### SELF-CLEANING FILTER



For cleaning heavy oil from dirty particles and impurities, it is equipped with a thermostatic heater for oil with 60°E viscosity at 50°C.

| FILTER TYPE                 | FILTERING<br>DEGREE (µm) | CODE    |
|-----------------------------|--------------------------|---------|
| ø = 1" 1/2 (60°E - at 50°C) | 300                      | 3010022 |

| HEATER / THERMOSTAT TYPE           | CODE    |
|------------------------------------|---------|
| Thermostatic heater with LED       | 3010060 |
| Heater                             | 3010061 |
| Thermostat (two-stage / regulable) | 3010062 |

**GAS SEPARATOR BOTTLE**

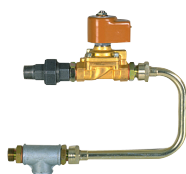
Gas separator bottle connects the burner oil circuit to the main ring circuit. It allows to recover heat in excess and discharge return circuit gas.

| BURNER          | CODE    |
|-----------------|---------|
| P 140 – 200 P/N | 3000748 |
| P 300 – 450 P/N | 3010012 |

**HEAVY OIL KIT**

Equipped with electrical heaters, it permits the employment of PRESS P/N burners with fuel oil of max. viscosity at 50°C: 20°E (150 mm<sup>2</sup>/s, cSt), Type BUNKER B / USA n° 5.

| BURNER                      | CODE    |
|-----------------------------|---------|
| P 140 – 200 – 300 – 450 P/N | 3000721 |

**HEAVY OIL PRECIRCULATION KIT**

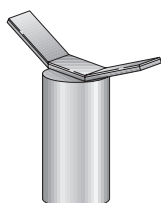
This kit, used with oil with high viscosity, in maintains fuel circulation in the oil circuit for avoiding system stop at start up.

| BURNER          | CODE    |
|-----------------|---------|
| P 140 – 200 P/N | 3000749 |
| P 300 – 450 P/N | 3000750 |

**CARTRIDGE FILTER**

For cleaning heavy oil from dirty particles and impurities, it is equipped with a cartridge system equipped with electronic resistance for oil with 7°E viscosity at 50°C.

| FILTER TYPE                 | CODE    |
|-----------------------------|---------|
| P 140 – 200 – 300 – 450 P/N | 3005209 |

**BURNER SUPPORT**

For easier maintenance, a mobile burner support has been designed, which means the burner can be dismantled without the need of forklift trucks.

| BURNER          | CODE    |
|-----------------|---------|
| P 300 – 450 P/N | 3000731 |

## Accessories for modulating operation



To obtain modulating operation, the PRESS P/N series of burners requires a regulator.

| BURNER                      | REGULATOR TYPE | REGULATOR CODE |
|-----------------------------|----------------|----------------|
| P 140 - 200 - 300 - 450 P/N | RWF 50.2       | 20100018       |
|                             | RWF 55.5       | 20101965       |



The relative temperature or pressure probes fitted to the regulator, must be chosen on the basis of the application.

| BURNER                      | PROBE TYPE         | RANGE (°C)<br>(bar) | PROBE CODE |
|-----------------------------|--------------------|---------------------|------------|
| P 140 - 200 - 300 - 450 P/N | Temperature PT 100 | -100 ÷ 500°C        | 3010110    |
| P 140 - 200 - 300 - 450 P/N | Pressure 4 ÷ 20 mA | 0 ÷ 2.5 bar         | 3010213    |
| P 140 - 200 - 300 - 450 P/N | Pressure 4 ÷ 20 mA | 0 ÷ 16 bar          | 3010214    |
| P 140 - 200 - 300 - 450 P/N | Pressure 4 ÷ 20 mA | 0 ÷ 25 bar          | 3090873    |



Depending on the servomotor fitted to the burner, a three-pole potentiometer (1000 Ω) can be installed to check the position of the servomotor.

| BURNER                      | CODE    |
|-----------------------------|---------|
| P 140 - 200 - 300 - 450 P/N | 3010021 |

## Available for P/N and P/N ECO versions

### NOZZLE



The nozzles must be ordered separately. The following table shows the features and codes on the basis of the maximum required output.

NOTE: each burner needs N° 1 nozzle.

| BURNER                | RATED OUTPUT<br>(kg/h) | NOZZLES BERGONZO<br>B5 45°- WITH "AA"<br>NEEDLE CODE | NOZZLES FLUIDICS W2<br>45°- WITH "AA"<br>NEEDLE CODE |
|-----------------------|------------------------|--|--|
| P 140 P/N             | 70                     | 3009203  | 3045426  |
| P 140 P/N             | 80                     | 3009205  | 3045427  |
| P 140 P/N             | 90                     | 3009207  | 3045428  |
| P 140 P/N – P 200 P/N | 100                    | 3009209  | 3045430  |
| P 140 P/N – P 200 P/N | 125                    | 3009211  | 3045432  |
| P 200 P/N – P 300 P/N | 150                    | 3009213  | 3045434  |
| P 200 P/N – P 300 P/N | 175                    | 3009215  | 3045436  |
| P 200 P/N – P 300 P/N | 200                    | 3009800  | 3045438  |
| P 200 P/N – P 300 P/N | 225                    | 3009801  | 3045440  |
| P 300 P/N – P 400 P/N | 250                    | 3009802  | 3045442  |
| P 300 P/N – P 400 P/N | 275                    | 3009803  | 3045444  |
| P 300 P/N – P 400 P/N | 300                    | 3009804  | 3045446  |
| P 450 P/N             | 325                    | 3009805  | 3045448  |
| P 450 P/N             | 350                    | 3009806  | 3045450  |
| P 450 P/N             | 375                    | 3009807  | 3045452  |
| P 450 P/N             | 400                    | 3009808  | 3045454  |
| P 450 P/N             | 425                    | 3009809  | 3045455  |
| P 450 P/N             | 450                    | 3009810  | 3045456  |



# Specification

## DESIGNATION OF SERIES

A specific index guides your choice of burner from the various models available in the PRESS P/N series. Below is a clear and detailed specification description of the product.

|  |     |     |  |                      |     |              |        |
|--|-----|-----|--|----------------------|-----|--------------|--------|
| Series: PRESS  |     |     |  |                      |     |              |        |
| Size:  |     |     |  |                      |     |              |        |
| Operation: N Two stage N/ECO Two stage with separated oil pump |     |     |  |                      |     |              |        |
| T/N Three stage T/N ECO Three stage with separated oil pump    |     |     |  |                      |     |              |        |
| P/N Modulating P/N ECO Modulating with separated oil pump      |     |     |  |                      |     |              |        |
| Emission: ... Class 1 EN267                                    |     |     |  |                      |     |              |        |
| Head: TC Standard head   |     |     |  |                      |     |              |        |
| TL Extended head   |     |     |  |                      |     |              |        |
| Flame control system: FS1 Standard (1 stop every 24 h)         |     |     |  |                      |     |              |        |
| FS2 Continuous working (1 stop every 72 h)                     |     |     |  |                      |     |              |        |
| Electrical supply to the system:                               |     |     |  |                      |     |              |        |
| 1/230/50 1 / 230V / 50 Hz                                      |     |     |  |                      |     |              |        |
| 3/230/50 3 / 230V / 50Hz                                       |     |     |  |                      |     |              |        |
| 3/400/50 3N / 400V / 50Hz                                      |     |     |  |                      |     |              |        |
| 3/230-400/50 3 / 230V / 50 Hz - 3N / 400V / 50Hz               |     |     |  |                      |     |              |        |
| 3/220-380/60 3 / 220V / 60 Hz - 3N / 380V / 60Hz               |     |     |  |                      |     |              |        |
| Auxiliary voltage:   |     |     |  |                      |     |              |        |
| 230/50 230V / 50Hz   |     |     |  |                      |     |              |        |
| 220/60 220V / 60Hz   |     |     |  |                      |     |              |        |
| PRESS  | 140 | P/N |  | TC                   | FS1 | 3/230-400/50 | 230/50 |
| BASIC DESIGNATION  |     |     |  | EXTENDED DESIGNATION |     |              |        |

## AVAILABLE BURNER MODELS

| BURNER MODELS |                  | HEAT OUTPUT    |             | TOTAL ELECTRICAL POWER | CERTIFICATION | NOTE |
|---------------|------------------|----------------|-------------|------------------------|---------------|------|
|               |                  | (kW)           | (kg/h)      | (kW)                   |               |      |
| P 140 P/N     | FS1 3/230-400/50 | 400/800÷1600   | 35/70÷140   | 19                     | -             |      |
| P 140 P/N     | FS1 3/230-400/50 | 400/800÷1600   | 35/70÷140   | 19                     | -             |      |
| P 200 P/N     | FS1 3/230-400/50 | 570/1140÷2280  | 50/100÷200  | 20                     | -             |      |
| P 200 P/N     | FS1 3/230-400/50 | 570/1140÷2280  | 50/100÷200  | 20                     | -             |      |
| P 300 P/N     | FS1 3/230/50     | 683/1710÷3420  | 60/150÷300  | 30                     | -             | (1)  |
| P 300 P/N     | FS1 3/230-400/50 | 683/1710÷3420  | 60/150÷300  | 30                     | -             |      |
| P 300 P/N     | FS1 3/400/50     | 683/1710÷3420  | 60/150÷300  | 30                     | -             | (1)  |
| P 300 P/N     | FS1 3/230/50     | 683/1710÷3420  | 60/150÷300  | 30                     | -             | (1)  |
| P 300 P/N     | FS1 3/230-400/50 | 683/1710÷3420  | 60/150÷300  | 30                     | -             |      |
| P 300 P/N     | FS1 3/400/50     | 683/1710÷3420  | 60/150÷300  | 30                     | -             | (1)  |
| P 450 P/N     | FS1 3/230/50     | 1140/2615÷5130 | 100/225÷450 | 34                     | -             | (1)  |
| P 450 P/N     | FS1 3/400/50     | 1140/2615÷5130 | 100/225÷450 | 34                     | -             | (1)  |
| P 450 P/N     | FS1 3/230/50     | 1140/2615÷5130 | 100/225÷450 | 34                     | -             | (1)  |
| P 450 P/N     | FS1 3/400/50     | 1140/2615÷5130 | 100/225÷450 | 34                     | -             | (1)  |

Net calorific value: 11.16 kWh/kg; 9600 kcal/kg

The burners of PRESS series are in according to 2014/30/UE – 2014/35/UE – 2006/42 EC Directive and EN 267 Norm.

For ECO model, ask for specific code.

## STATE OF SUPPLY

Monoblock forced draught oil burner with two-stage progressive or modulating operation, with a specific kit, fully automatic, made up of:

- Air suction circuit lined with sound-proofing material
- Fan with forward curved blades high performance pressure levels
- Air damper for air setting and automatic oil output regulator controlled by a servomotor with variable cam
- Fan motor at 2850 rpm, three-phase 400V with neutral, 50Hz
- Combustion head, that can be set on the basis of the combustion output, fitted with:
  - stainless steel end cone, resistant to corrosion and high temperatures
  - ignition electrodes
  - flame stability disk
- Gears pump for high pressure fuel supply, fitted with:
  - filter
  - pressure regulator
  - connections for installing a pressure gauge and vacuumeter
  - internal by-pass for single pipe installation
- Heavy oil heating cartridges (P/N ECO version)
- Pipes heating cable (P/N ECO version)
- Oil pump motor at 1400 rpm (P/N ECO version)
- Valve unit with a double oil safety valve on the output circuit
- Electrical preheater for heavy oil
- Safety oil pressure switch
- Photocell for flame detection
- Burner safety control box, fitted with control function for the correct positioning of the servomotor and possibility of post-ventilation by just changing the electric wiring
- Flame inspection window
- Slide bars for easier installation and maintenance
- Protection filter against radio interference
- IP X0D (IP 40) electric protection level.

### Standard equipment:

- 2 flexible pipes for connection to the oil supply network
- 2 nipples for the connection to the pump
- Wiring looms fittings for electrical connections
- 4 screws for fixing the burner flange to the boiler
- 2 slide bar extensions (for the extended head models of P 300 P/N and P 450 P/N)
- Gasket for flange
- Starter\*
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

\* for versions with star-delta starting

### Conforming to:

- 2014/30 UE Directive (electromagnetic compatibility)
- 2014/35 UE Directive (low voltage)
- 2006/42 EC Directive (machine)
- EN 267 (liquid fuel burners)

### Available accessories to be ordered separately:

- Spacer kit
- Sound proofing box
- Self cleaning filter
- Gas separator bottle
- Heavy oil kit
- Heavy oil precirculation kit
- Cartridge filter
- Burner support
- Nozzle

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

10/2016

TS0043UK03



[ 1 ]



[ 2 ]

[ 1 ] BURNERS PRODUCTION PLANT  
S. PIETRO, LEGNAGO (VERONA) - ITALIA

[ 2 ] HEADQUARTER BURNERS DIVISION  
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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