

PRESS P/N - P/N ECO SERIES

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.

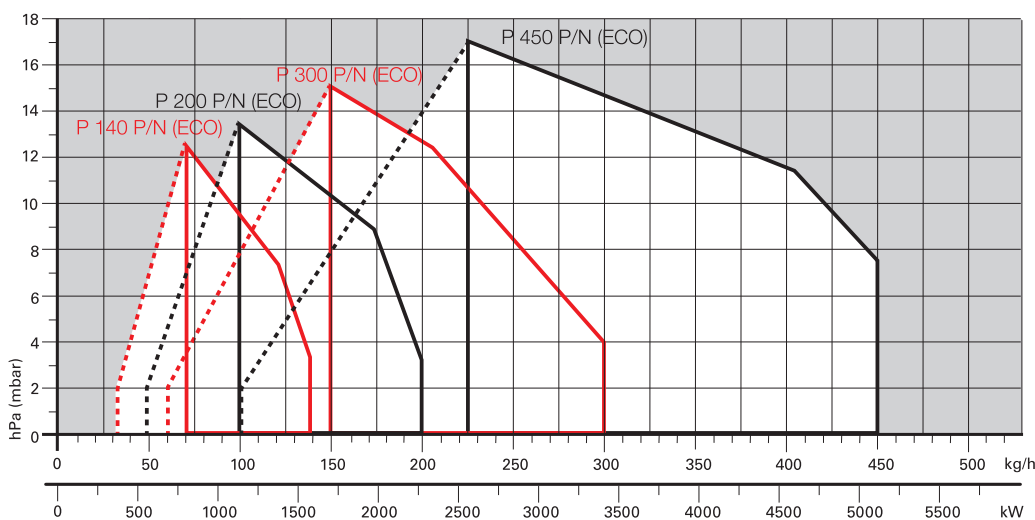
The versatility of this range makes the burner well suited for use on steam boilers where the load factor is subject to wide variations, on thermal oil boilers and on boilers for particular heating plants, as hospitals or similar.


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.



| | |
|---------------|---------------------|
| 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 |

FIRING RATES



 Useful working field for choosing the burner

 Modulation range

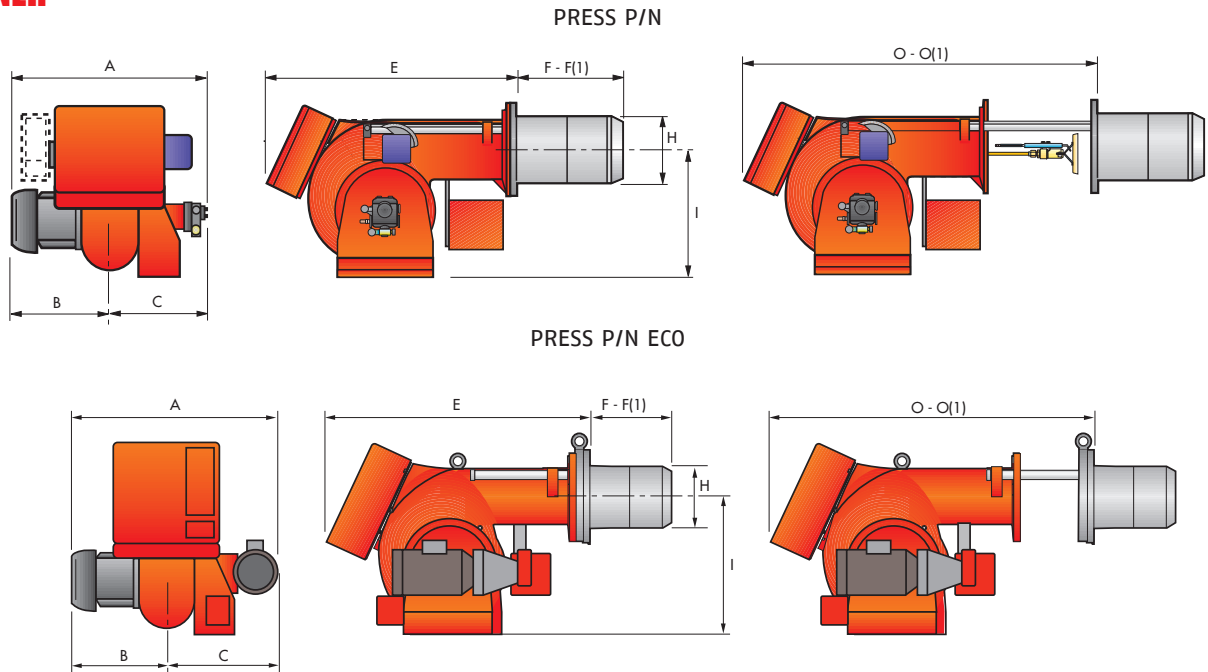
Test conditions conforming to EN267
 Temperature: 20°C
 Pressure: 1013,5 mbar
 Altitude: 0 m a.s.l.

Modulating Heavy Oil Burners

PRESS P/N - P/N ECO SERIES

Overall dimensions (mm)

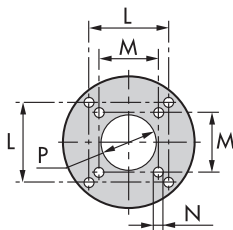
BURNER



| 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 |

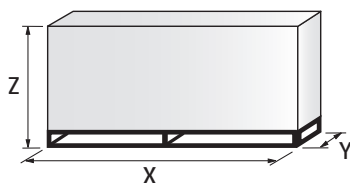
(1) Length with extended combustion head

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 |

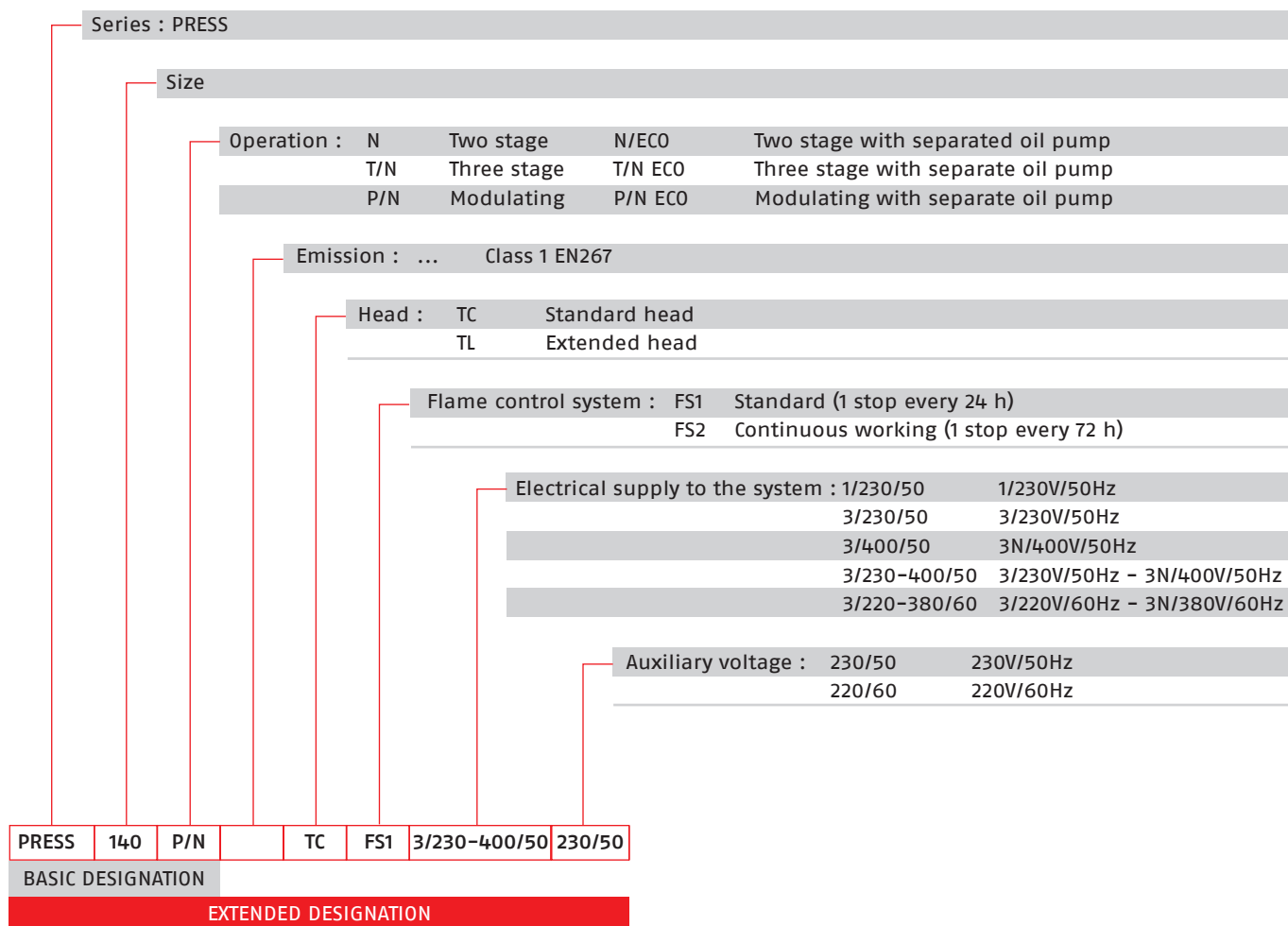
PACKAGING



| 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 |

Specification

DESIGNATION OF SERIES



Modulating Heavy Oil Burners

PRESS P/N - P/N ECO SERIES

Specification

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

PRESS P/N - P/N ECO SERIES

Available models

| CODE | MODEL | | | | HEAT OUTPUT | | TOTAL ELECTRICAL POWER (kW) | CERTIFICATION | NOTE |
|---------|-----------|----|------------------|--------|----------------|-------------|-----------------------------|---------------|------|
| | | | | | (kW) | (kg/h) | | | |
| 3436876 | P 140 P/N | TC | FS1 3/230-400/50 | 230/50 | 400/800÷1600 | 35/70÷140 | 19 | - | |
| 3436877 | P 140 P/N | TL | FS1 3/230-400/50 | 230/50 | 400/800÷1600 | 35/70÷140 | 19 | - | |
| 3437776 | P 200 P/N | TC | FS1 3/230-400/50 | 230/50 | 570/1140÷2280 | 50/100÷200 | 20 | - | |
| 3437777 | P 200 P/N | TL | FS1 3/230-400/50 | 230/50 | 570/1140÷2280 | 50/100÷200 | 20 | - | |
| 3438989 | P 300 P/N | TC | FS1 3/230/50 | 230/50 | 683/1710÷3420 | 60/150÷300 | 30 | - | (1) |
| 3438987 | P 300 P/N | TC | FS1 3/230-400/50 | 230/50 | 683/1710÷3420 | 60/150÷300 | 30 | - | |
| 3438991 | P 300 P/N | TC | FS1 3/400/50 | 230/50 | 683/1710÷3420 | 60/150÷300 | 30 | - | (1) |
| 3438990 | P 300 P/N | TL | FS1 3/230/50 | 230/50 | 683/1710÷3420 | 60/150÷300 | 30 | - | (1) |
| 3438988 | P 300 P/N | TL | FS1 3/230-400/50 | 230/50 | 683/1710÷3420 | 60/150÷300 | 30 | - | |
| 3438992 | P 300 P/N | TL | FS1 3/400/50 | 230/50 | 683/1710÷3420 | 60/150÷300 | 30 | - | (1) |
| 3439385 | P 450 P/N | TC | FS1 3/230/50 | 230/50 | 1140/2615÷5130 | 100/225÷450 | 34 | - | (1) |
| 3439387 | P 450 P/N | TC | FS1 3/400/50 | 230/50 | 1140/2615÷5130 | 100/225÷450 | 34 | - | (1) |
| 3439386 | P 450 P/N | TL | FS1 3/230/50 | 230/50 | 1140/2615÷5130 | 100/225÷450 | 34 | - | (1) |
| 3439388 | P 450 P/N | TL | FS1 3/400/50 | 230/50 | 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 2004/108 - 2006/95 - 2006/42 EC Directive and EN 267 Norm.

(1) Star-delta starting

For ECO models ask for specific code.

Viscosity

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 mm²/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 mm²/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 mm²/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 mm²/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.

Burner accessories

Available for P/N and P/N ECO versions

Nozzles

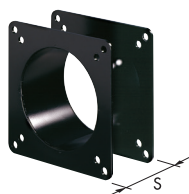


The nozzles must be ordered separately. The following table shows the features and codes on the basis of the maximum required output.

NOTE: each burner needs N° 1 nozzle.

| BURNER | RATED OUTPUT kg/h | NOZZLES BERGONZO B5 45°- WITH "AA" NEEDLE CODE | NOZZLES FLUIDICS W2 45°- WITH "AA" 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 |

Spacer kit

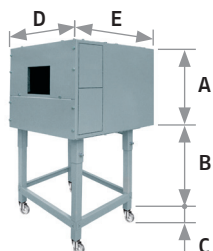


If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the list.

| BURNER | SPACER THICKNESS S (mm) | KIT CODE |
|-------------------------|----------------------------|----------|
| ▶ P 140 P/N - P 200 P/N | 102 | 3000722 |
| ▶ P 300 P/N | 130 | 3000723 |
| ▶ P 450 P/N | 130 | 3000751 |

Burner accessories

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

(*) 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 DEGREE (µm) | FILTER CODE |
|----------------------------|-----------------------|-------------|
| ▶ Ø = 1"1/2 (60°E at 50°C) | 300 | 3010022 |

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

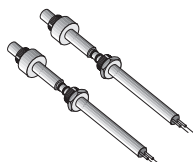
Gas separator bottle



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 P/N - P 200 P/N | 3000748 |
| ▶ P 300 P/N - P 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 mm²/s, cSt), Type BUNKER B / USA n° 5.

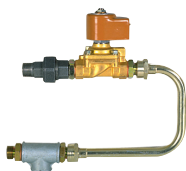
| BURNER | KIT CODE |
|---|----------|
| ▶ P 140 P/N - P 200 P/N - P 300 P/N - P 450 P/N | 3000721 |

Modulating Heavy Oil Burners

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Burner accessories

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 | KIT CODE |
|-------------------------|----------|
| ► P 140 P/N - P 200 P/N | 3000749 |
| ► P 300 P/N - P 450 P/N | 3000750 |

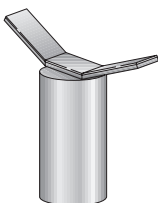
Cartridge filter



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.

| BURNER | FILTER CODE |
|---|-------------|
| ► P 140 P/N - P 200 P/N - P 300 P/N - P 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 | SUPPORT CODE |
|-------------------------|--------------|
| ► P 300 P/N - P 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 P/N - P 200 P/N - P 300 P/N - P 450 P/N | RWF 40 | 3010211 |



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

| BURNER | PROBE TYPE | RANGE (°C) (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 | POTENTIOMETER KIT CODE |
|---|------------------------|
| ► P 140 P/N - P 200 P/N - P 300 P/N - P 450 P/N | 3010021 |