

Dehumidifying Dryers DP 619 - DP 624 Series



English

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PIOVAN

Customers. The core of our innovation



▶ Dehumidifying Dryers

DP 619 – DP 624 Series



DP 620

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Six models (DP 619, DP 620, DP 621, DP 622, DP 623, DP 624) powerful, modular and compact, capable of operating up to 200C in the HT version (High Temperature) and able to ensure a constant drying process with effective airflow from 200 to $800\text{ m}^3/\text{h}$ and Dew Point values lower than -45C .

The DP 620 - DP 624 Dryers are equipped with two lateral channel blowers, one for the process circuit and one for the regeneration circuit.

The DP 619 is the only model in the series to be equipped with one single blower that generates airflow for both the process and the regeneration circuits.

▶ Flexible configuration

The DP 619 - DP 624 Dryers can be combined with one or more drying hoppers with a capacity ranging from 300 to 2500 dm^3 and are suitable for individual or multiple hopper assemblies for dedicated or centralised drying solutions.



Multi-hopper solution

Dehumidifying Dryers DP 619 - DP 624 Series



Hoppers

All Piovan drying hoppers are made out of stainless steel and, thanks to a special diffusing cone, ensure uniform air flow, homogenous heating of the entire mass of granules and no material stagnation.

The integral insulation having thickness of 60mm or of 100mm, both of the cylindrical and the conical sections, avoids thermal dispersions and energy wastage.



Hopper hinged door



Multi-hopper Drying Systems: PTU

Extreme modularity is the main characteristic for the Piovan solutions.

The operator can simply and easily increase the number of hoppers at any time, by means of quick adaptors/connects, without the need to carry out any modification to the already-existing system.



Integral trolleys and frames

Hoppers with capacity from 30 to 200 dm³ have a mounting base which can be integrated in one single mobile unit.





Hoppers with capacity above 200 dm³ are positioned on dedicated frames that are equipped with a specific connection system.



▶ Precision and accuracy

One dedicated electronic control equips each of the hoppers being part of a multi-hopper drying system, and allows the management of the following parameters:

- > process temperature
- > automatic set-up of the safety temperature
- > individual **cooling-stop** for each hopper
- > **air flow control** that allows the automatic adjustment of the air flow in the hopper (optional)
- > **material consumption** that allows the automatic reduction of the temperature set point based on the material consumption (activation from loader signal)
- > standard RS 485 serial interface
- > display of the type of material contained in the hopper



The drying hopper's control

IES

Intelligent Energy Supervisor

In accordance to the effective requirements of the processing machine, the IES system optimises and adjusts the energy utilisation of the DP 619 - DP 624 Dryer Series, featuring the following functions:

IES Standard

- > **temperature-control based regeneration cycle:** the molecular sieves are heated and cooled only as much as necessary, resulting in energy savings of up to 50%
- > **regeneration programming:** the bed in process is used for a time that varies according to the material to be dried, thus reducing the number of regenerations

IES Plus (optional)

- > **Dew Point Control:** bed exchange controlled by the Dew point measuring instrument, with a process cycle duration based on the material's effective grade of humidity. (DP 620, DP 621, DP 622, DP 623, DP 624)
- > **Water Flow Control:** the process air cooling is activated only when necessary

IMD

Intelligent Material Drying

Material thermal degradation or over-drying is prevented by the IMD system, that in the DP 619 – DP 624 Dryer Series optimises the drying process managing the following functions:

IMD Standard

- > **automatic reduction of the process temperature:** it prevents the material from overheating in the case of prolonged stops (activation from processing machine)
- > **material consumption management:** it allows the automatic adjustment of the temperature set-point based on the material consumption (activation from loader signal)
- > **Cooling stop:** it allows the dryer to stop automatically after a period of time set by the operator. The material in the hopper is cooled thus avoiding its thermal degradation.

IMD Plus (optional)

- > **process air flow management:** it allows the automatic reduction of the air flow in the hopper, thus avoiding thermal degradation of the granules and at the same time significantly reducing the energy required to maintain the process air temperature.



Standard features

All models are equipped with:

- > two desiccant beds
- > stainless steel desiccant beds
- > high pressure lateral channel blowers
- > blowers and molecular sieves filtration system
- > microprocessor control
- > temperature-controlled regeneration
- > electronic control of the process temperature with self-tuning PID algorithm that ensures high precision
- > solid state relays (SSR) for the process heaters control
- > completely independent process air temperature safety control (temperature probe, power control and contactor)
- > automatic set-up of the process air safety temperature
- > warnings for the correct functioning of the coolers (thus avoiding the necessity of having the cooling water constantly switched on)
- > simple and complete operator interface



Optional features

- > MODBUS RS 485 serial interface
- > PROFIBUS serial interface
- > visual/acoustic alarm
- > timer (daily/weekly/annual switch on and off)
- > Dew Point indicator with alarm
- > bed exchange Dew Point control (DP 620, DP 621, DP 622, DP 623, DP 624)
- > cooling control
- > process circuit post-cooler (optional for DP 620, DP 621; standard on DP 622, DP 623, DP 624)
- > filter clog pressure switch
- > closed-loop regeneration circuit with on/off water control valve (DP 620, DP 621, DP 622, DP 623, DP 624)



Molecular sieve towers

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