

Compressed Air Resin Dryer

An energy efficient, compressed air dryer – the economic alternative to conventional drying systems.

Comet's 3DX series compressed air dryers combine perfect drying results with minimal operating costs, and virtually maintenance-free operation. It is an economical alternative to conventional drying systems (e.g. desiccant dryers), and is ideally suited for all plastic resins with small- to mid-volume throughputs. Its design is unique in the dryer industry and is based on the 3D compressed air principle (see explanation on page 3) that efficiently manages batch drying fluctuations caused by residual moisture.

The 3DX series is completely modular and comes in 38 standard base hopper sizes so the operator can easily adapt to different materials, shot weights, or changing production conditions. The dryer's flexible design also allows for quick hopper size changes, so depending on drying requirements, only a few base modules are necessary and the processor is not forced to decide on only one size for their drying process.

The 3DX consists of four main high quality, stainless steel components: material hopper, compressed air module, dryer lid, and hopper extension. This flexible design enables seamless integration with all standard hopper sizes and configurations.

Standard Features

- Dewpoint display with optional dewpoint sensor (can be retrofitted).
- Large process air display with -13°F (-25°C) dewpoint (up to -85°F, if required), optional dewpoint sensor available.
- 38 hopper sizes: 2.2 – 180 lbs. (1 – 82 liters).
- Typical material throughput capacity from approx. 2.2 – 88 lbs/hr. (1 – 40 kg/hr).
- Even air distribution using a ring nozzle system.
- Swiveling, detachable, integrated control terminal used for conveying and discharging, adjustable fill level sensor, and continuously variable automatic air temperature control.
- Sensors provide intelligent compressed air volume control.
- Manufactured of corrosion-free, stainless steel suitable for clean-room applications.
- Detachable hoppers for optimal cleaning (optional for 27, 42, and 62 liter hoppers).
- Easy installation, low maintenance, conserves energy.
- Integration with all standard machines, network several dryers via remote mode.
- Regulator with flexible basic electronic structure.
- Monitor drying time with or without temperature lowering.
- Integrated weekly setting program.
- Modem output for remote maintenance, program updates, and analyses.



Four Main Components... One System!

The modular 3DX series consists of four main components: process air module, material hopper, dryer lid and hopper extension. This enables quick changes of hopper sizes to adapt to the needed material through-put and also provides easy maintenance accessibility.

Hopper Cover

Available in multiple versions (i.e. dust filter unit and fully integrated material feed system; flange for an external conveying unit; exhaust hose for clean-room applications). When performing cleaning and maintenance, the quick disconnect system enables easy cover removal.

Air Supply Module

The air supply module has many convenient features such as a swivelling, detachable control terminal, large display area (readable from distances up to 40 ft.) and a multiport I/O dock to easily link to your equipment. The required process air is microcomputer controlled and adjusted using a simple, intuitive joystick for control. The unit works seamlessly with all available hopper sizes and configurations for maximum flexibility. A bottom central process air coupling provides quick, safe hopper connection.



Swivelling, Detachable
Control Terminal



Large Area Display



Bottom Central Process
Air Coupling



Multi-Port I/O Dock

Quick Connector Ring

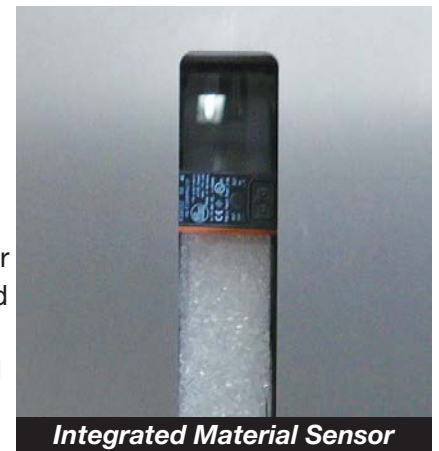
Unique, fast and flexible hopper size adjustment by inserting an optionally available extender ring with a quick connector ring system that can be engaged or disengaged in seconds.



Quick Connector Ring

Resin Hopper

All hoppers are made of corrosion free stainless steel and feature high-efficiency isolation and thermal separation between inner and outer surfaces. When coupled with the optional fully integrated material feed system, the unit becomes a unique, compact total solution. The integrated ring nozzle system provides evenly processed air distribution within the hopper and easy cleaning of the inner hopper surface steering clear of obstructions such as blow pipes, etc.



Integrated Material Sensor

Ring-Jet System

The ring-jet air nozzle system is incorporated in the cone area of the hopper. Hot air enters the hopper via the cone area as a ring flow, streams upwards through the material where it is dehumidified, then discharges to the atmosphere via an air filter.



Ring-Jet System

3D Air Principle Advantages:

The development of the 3D Principle was based on analyzing every drying factor and how it would effectively dry each individual resin pellet. The advantages include:

- Completely isolates the material between the interior and exterior of the hopper by creating a temperature barrier for thermal de-coupling that provides consistent, unvaried circulation and distribution of compressed air.
- An integrated ring-jet system ensures consistent temperature control and process air distribution in the hopper. The ring-jet system dehumidifies and removes residual moisture using a “multi-radial air stream” for the resin instead of a mono-radial air-stream like conventional compressed air dryers.
- Sophisticated, adjustable sensors inside the material hopper ensure exact process monitoring and control of compressed airflow so every resin pellet is uniformly dehumidified.
- A compressed air module, with display and control functions efficiently controls the material during the entire drying process. There is no contact between the module and the process environment because of a multi-port I/O interface. The compressed air module is attached to the material hopper using a centralized compressed air coupling.
- Choose between two compressed air control modes, *normal* and *expert*. The expert mode is ideal for drying difficult materials like TPE, high-temperature thermoplasts like PEEK, or filled materials.
- The large, removable swiveling display is readable up to 50 ft., providing the operator with an optimal view so errors are minimized.
- Can be equipped with infinitely variable, adjustable hopper sensors that are integrated into the control system of the dryer to reliably ensure exact process monitoring.
- High-quality stainless steel components and PTFE parts make the 3DX dryer perfect for clean-room applications.
- A hopper extension allows for quick, flexible material hopper changes to adjust the volume in the hopper to the production.
- Simple construction enables easy accessibility and maintenance.



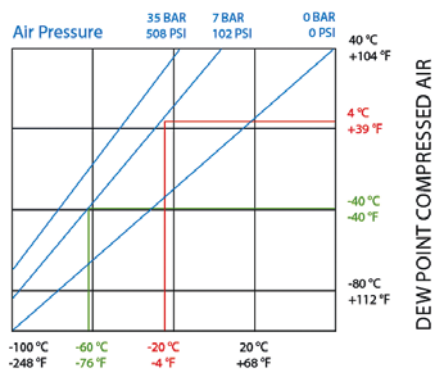
Technical Specifications

	Model	3DX-02	3DX-07	3DX-12	3DX-27	3DX-42	3DX-62
Hopper Capacity	(liters)	2.0	7.0	12.0	27.0	42.0	62.0
Adjustable Material Content	(liters)	0.5 - 2.0	3.5 - 7	6 - 12	17 - 27	27 - 42	47 - 62
Max. Air Consumption	(SCFM/hr)	3	3	4	8	10	13
Air Pressure	(PSI)	87	87	87	87	87	87
Electrical Capacity	(W)	750	1,150	1,150	1,150	1,150	1,150

Dimensions

Height (includes integrated material feed)	(inch / mm)	13.75 / 350	26.75 / 680	26.75 / 680	34.85 / 885	34.85 / 885	45.25 / 1150
Height (with external feed system without feeder)	(inch / mm)	13.75 / 350	24 / 630	24 / 630	33 / 835	33 / 835	43 / 1100
Width	(inch / mm)	9 / 230	9 / 230	9 / 230	11 / 280	13.75 / 350	13.75 / 350
Depth	(inch / mm)	13.25 / 337	13.25 / 337	15.25 / 387	17 / 437	20 / 507	20 / 507

We reserve the right to change specifications without prior notice.



Lid On



Lid Off

Drying Capacities

Material Type	Drying Time (hrs.)	Temp. (°F)	Residual MST (%)	Capacity in lbs./hr. based on average bulk density of .025 cu./ft.					
				3DX-02	3DX-07	3DX-12	3DX-27	3DX-42	3DX-62
ABS	2-3	176	.050	.97	3.37	5.78	13.01	20.15	29.61
CA	2-3	176	.010	.97	3.37	5.78	13.01	20.15	29.61
CAB	2-3	167	.010	.97	3.37	5.78	13.01	20.15	29.61
CP	2-3	167	.010	.97	3.37	5.78	13.01	20.15	29.61
PA66	4	176	.020	.80	2.78	4.74	10.67	16.53	24.30
PA11/12	4-5	176-248	.020	.64	2.20	3.77	8.49	13.14	19.33
PA6	3-5	167	.020	.80	2.78	4.74	10.67	16.53	24.30
PBTP	3	284	.015	.97	3.37	5.78	13.01	20.15	29.61
PC	2-3	248	.010	1.28	4.45	7.61	17.11	25.52	39.00
PE	2-3	185	.050	.97	3.37	5.78	13.01	20.15	29.61
PES	3	302	.020	.97	3.37	5.78	13.01	20.15	29.61
PETP	4-6	356	.002	.80	2.80	4.80	10.82	17.55	24.65
PI	3	248	.050	.97	3.37	5.78	13.01	20.15	29.61
PMMA	3	176	.020	.97	3.37	5.78	13.01	20.15	29.61
POM	3	212	.050	.97	3.37	5.78	13.01	20.15	29.61
PP	2	194	.050	1.37	4.80	8.22	18.50	28.68	45.15
PPS	2-3	302	.020	.97	3.37	5.78	13.01	20.15	29.61
PS	1-2	176	.020	1.37	4.80	8.22	18.50	28.68	45.15
PSU	2	248	.020	1.37	4.80	8.22	18.50	28.68	45.15
PUR	3	194	.010	.97	3.37	5.78	13.01	20.15	29.61
PVC	1	158	.100	2.84	9.92	16.98	38.21	59.20	87.04
SAN	2-3	176	.050	1.12	3.90	6.68	15.04	23.30	34.24
SB	2	176	.020	1.37	4.80	8.22	18.50	28.68	45.15

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