

Compressed Air Resin Dryer

An energy efficient, compressed air dryer series for more efficient drying performance.

Comet's 3DX series is a technologically advanced compressed air dryer developed specifically with the end-user in mind, and is ideally suited for small- to mid-volume throughputs. Its design is unique in the dryer industry and is based on a newly developed 3D compressed air principle (see 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. This flexible, economic solution allows the user to individualize their drying requirements using only a few base modules and doesn't force the processor to decide on one size for their drying process.

The 3DX design consist of four main components: compressed air module, material hopper, 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.
 - Process dewpoint air of -13 °F (-85 °C, if required).
- Swiveling, detachable control terminal.
- Large display enables reading distances of up to 40 feet.
- Easy to use, intuitive joystick for the microprocessor controller.
- Continuously variable automatic air temperature controller.
- Adjustable, integrated material sensor.
- Ring nozzle system for even air distribution with the hopper.
- Removing the hopper cover is quick and easy.
- Adjustable filling level sensor.
- Programmable timer, batch drying, updates and analysis.
- Easy installation, low maintenance and conserves energy.
- Three year guarantee.



3DX-12



3DX-02

The 3DX series has compressed air drying capacities ranging from .11 to 660 lbs./hr.



Modular Design

1. Compressed Air Module
2. Material Hopper
3. Dryer Lid
4. Hopper Extension

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.



Swivelling, Detachable Control Terminal



Large Area Display



Bottom Central Process Air Coupling



Multi-Port I/O Dock

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.

Extender 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 Nozzle 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 decoupling 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 airstream 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 multiport 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-005	3DX-02	3DX-07	3DX-12	3DX-27	3DX-42	3DX-62
Hopper Capacity	Gallons	.13 - .14	.53 - .55	1.85 - 1.86	3.17 - 3.19	7.13 - 7.19	11.10 - 1.113	16.38 - 16.43
Adjustable Material Content	Gallons	.13	.13 - .53	.92 - 1.85	1.59 - 3.17	4.49 - 7.13	7.13 - 11.10	12.42 - 16.38
Air Consumption (max.)	PSF	0.0104	0.016	0.0617	0.0951	0.18	0.28	0.41
Air Pressure	Bar	6	6	6	6	6	6	6
Electrical Capacity	Watts	750	750	1,150	1,150	1,150	1,150	1,150

Dimensions

Height (includes integrated material feed)	Inches	—	13.80	26.80	26.80	34.90	34.90	45.28
Height (with external feed system without feeder)	Inches	—	13.80	24.80	24.80	32.90	32.90	43.30
Width	Inches	—	9.00	9.00	9.00	11.00	37.80	37.80
Depth	Inches	—	13.30	13.30	15.20	17.20	20.00	20.00

We reserve the right to change specifications without prior notice.



Lid On



Lid Off

Drying Capacities

Capacity in lbs./hr. based on average bulk density of .025 cu./ft.

Material Type	Drying Time (hrs.)	Temp. (°F)	Residual MST (%)	3DX-005	3DX-02	3DX-07	3DX-12	3DX-27	3DX-42	3DX-62
ABS	2-3	176	.050	.24	.97	3.37	5.78	13.01	20.15	29.61
CA	2-3	176	.010	.24	.97	3.37	5.78	13.01	20.15	29.61
CAB	2-3	167	.010	.24	.97	3.37	5.78	13.01	20.15	29.61
CP	2-3	167	.010	.24	.97	3.37	5.78	13.01	20.15	29.61
PA66	4	176	.020	.20	.80	2.78	4.74	10.67	16.53	24.30
PA11/12	4-5	176-248	.020	.15	.64	2.20	3.77	8.49	13.14	19.33
PA6	3-5	167	.020	.20	.80	2.78	4.74	10.67	16.53	24.30
PBTP	3	284	.015	.24	.97	3.37	5.78	13.01	20.15	29.61
PC	2-3	248	.010	.31	1.28	4.45	7.61	17.11	25.52	39.00
PE	2-3	185	.050	.24	.97	3.37	5.78	13.01	20.15	29.61
PES	3	302	.020	.24	.97	3.37	5.78	13.01	20.15	29.61
PETP	4-6	356	.002	.20	.80	2.80	4.80	10.82	17.55	24.65
PI	3	248	.050	.24	.97	3.37	5.78	13.01	20.15	29.61
PMMA	3	176	.020	.24	.97	3.37	5.78	13.01	20.15	29.61
POM	3	212	.050	.24	.97	3.37	5.78	13.01	20.15	29.61
PP	2	194	.050	.35	1.37	4.80	8.22	18.50	28.68	45.15
PPS	2-3	302	.020	.24	.97	3.37	5.78	13.01	20.15	29.61
PS	1-2	176	.020	.35	1.37	4.80	8.22	18.50	28.68	45.15
PSU	2	248	.020	.35	1.37	4.80	8.22	18.50	28.68	45.15
PUR	3	194	.010	.24	.97	3.37	5.78	13.01	20.15	29.61
PVC	1	158	.100	.71	2.84	9.92	16.98	38.21	59.20	87.04
SAN	2-3	176	.050	.27	1.12	3.90	6.68	15.04	23.30	34.24
SB	2	176	.020	.35	1.37	4.80	8.22	18.50	28.68	45.15

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