A FAMILY OF OVER-ACHIEVERS

The high performance Downflo® Oval (DFO) family of over-achieving dust collectors provides up to 25 percent more filtration capacity than other same-sized cartridge collectors. Powered by proprietary Ultra-Web® nanofiber filtration technology, DFO delivers cleaner air, up to two times longer filter life, and greater cost savings.

The DFO advantage is found in the collector’s proprietary design and components. The combination of a new cabinet design that greatly lowers cabinet velocities, proprietary Extra-Life™ cleaning technology, and proven Ultra-Web nanofiber filters allows more airflow through the collector without increasing the size of the footprint or damaging the filters.

A smaller collector helps lower the initial purchase price, reduces filter replacement costs and opens up valuable manufacturing floor space.

DFO offers:

- Lower initial cost per cubic foot of air per minute (cfm)
- Higher efficiency—cleaner air
- Lower pressure drop—greater energy savings
- Fewer filter changeouts
- Reduced filter disposal cost
- Easy system setup
- Less maintenance
- 10-year warranty
OUTPERFORMS ALL OTHER COLLECTORS

DFO collectors offer some strong benefits that distinguish them from all other collectors available in the market today.

- **EASY TO USE**
  Quick-release handles provide easy cover removal and faster filter access.

- **COMPACT**
  Smaller footprints for applications that require maximum cleaning efficiency in even smaller spaces.

- **POWERFUL**
  DFO collectors provide 25 percent more capacity than same-sized dust collectors.

- **COST EFFECTIVE**
  The proprietary ExtraLife™ Filter Cleaning System averages up to 30 percent increase in pulse cleaning energy for unmatched cleaning ability.

- **INNOVATIVE**
  Unique oval-shaped Ultra-Web® cartridge filters provide the longest filter life and highest filtration efficiency—which lowers cost.
DFO Models 1-1, 2-2 and 3-3

- Incorporate several exclusive and unique features
- Completely self-contained, “plug-and-play” type units
- Packaged with power pack, controls, silencer, damper, dust container and more
- Remarkably quiet operation
- Exceptionally compact design
- Easily movable through standard aisles and doorways

NORMAL OPERATIONS
FOR MODELS
1-1, 2-2 and 3-3
NORMAL OPERATIONS FOR MODELS 2-4 through 4-128

DFO Models 2-4 to 4-128

- 23 standard model sizes
- Customized sizes available
- Many options and accessories
- Exceptionally compact design
- Significant energy savings
DFO TECHNOLOGY UNFOLDS

PROPRIETARY TECHNOLOGY THAT PERFORMS

The remarkable story of DFO begins with the oval cartridge and Ultra-Web media technology. Proven and proprietary Ultra-Web technology delivers longer filter life, cleaner air and greater cost savings than other types of cartridge filter media. Made with an electrospinning process that produces a very fine, continuous fiber of 0.2-0.3 micron in diameter, Ultra-Web nanofibers form a permanent web-like net with very fine interfiber spaces that trap dust on the surface of the media.

DFO FILTER MEDIA PLEATS

The innovation of shorter and stiffer filter pleats helps minimize dust entrapment and simplify filter cleaning. By reducing the height of the filter pleats from the standard 2 inches to 1.5 inches, the pleat wall is less likely to collapse or bend, which can encapsulate dust and prevent its expulsion.
MORE AIRFLOW, LESS FILTER MEDIA

UNIQUE OVAL SHAPE CONTRIBUTES TO HIGHER AIRFLOW CAPACITY

The Downflo Oval filter design is a reflection of Donaldson Torit’s commitment to technical research and development. High performance oval-shaped filters handle up to 25 percent more airflow without increasing velocities, which can cause filter abrasion. Sophisticated FLUENT®*Airflow Modeling Software revealed that oval-shaped cartridge filters have fewer areas of high velocity, resulting in a lower potential for media abrasion and increased filter life.

DOWNFLO OVAL COLLECTOR: 9145 CFM
STANDARD COLLECTOR: 7315 CFM

AIRFLOW BREAKTHROUGHS LEAD TO HIGHER FILTRATION EFFICIENCY

Sophisticated computer modeling for fluid dynamics, structural mechanics and acoustics puts DFO models 1-1, 2-2, and 3-3 in a technical class all their own. The illustration below (left) shows how FLUENT Flow Modeling Software enhanced the uniform air velocity distribution through model DFO 3-3. ANSYS®* Structure Analysis Software shown below (right) demonstrates lowest stress levels and deflections for model DFO 3-3 under typical operating pressures.

DFO 3-3 AIR VELOCITY DISTRIBUTION
DFO 3-3 STRESS AND DEFLECTIONS MODEL

* FLUENT is a registered trademark of Fluent, Inc.; ANSYS is a registered trademark of ANSYS, Inc.
CONVEX SIDE WALLS
Technical discoveries improve filtration performance and prolonged filter life. A new cabinet design with convex side walls streamlines the airflow path and increases the cabinet’s cross-sectional area. The convex side walls provide more space between filters, lower cabinet velocities and reduce the potential for media abrasion.

PULSE CLEANING TECHNOLOGY
ExtraLife Filter Cleaning System uses proprietary, computer-modeled pulse cleaning technology to easily “pulse off” dust from the surface of the filter, improving filtration efficiency and prolonging filter life. The red lines in the illustration show the increased pressure at the front of the Downflo filter generated by the ExtraLife system. The blue line shows the pulse signature of a standard cartridge collector.
EASY MAINTENANCE
With the new design of the DFO’s quick-release access handles, filter removal and maintenance is extremely fast with one simple movement of the clamp.

BAG-IN/BAG-OUT ARRANGEMENTS
Improve filter changeouts and hopper discharge maintenance, help minimize worker exposure to potentially harmful dusts, and reduce exposure of contaminants to the atmosphere.

- Porthole covers protect changeout bags and provide a clean appearance.
- Heavy-duty plastic bags hold filters and function as gloves during the changeout procedure.
- Filters are disposed of in a sealed bag.
- Bag-in/Bag-Out drum arrangement is safely held in place through drum latches and hose clamps.
## OPERATING ADVANTAGES & CONDITIONS

<table>
<thead>
<tr>
<th>DFO MODELS</th>
<th>1-1</th>
<th>2-2</th>
<th>3-3</th>
<th>2-4 through 4-128</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horsepower (HP)</td>
<td>1.5</td>
<td>3</td>
<td>5</td>
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<tr>
<td>Sound Level dB(A)*</td>
<td>68</td>
<td>68</td>
<td>70</td>
<td>**</td>
</tr>
<tr>
<td>External Static Pressure (*wg)</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>**</td>
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<td>12</td>
<td>12</td>
<td>10 (collector) 7 (tubesheet)</td>
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<td>Housing Rating (inches H2O)</td>
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<td>-20</td>
<td>-20</td>
<td>-20</td>
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<tr>
<td>Wind Load Rating (mph)</td>
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<td>100</td>
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<tr>
<td>Seismic Rating (zone)</td>
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<td>4</td>
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<tr>
<td>Compressed Air Required (psig)</td>
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<td>60</td>
<td>60</td>
<td>2-4, 3-6: 60 2-8 and up: 90-100</td>
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<td>120 VAC, 50/60 Hz</td>
<td>120 VAC, 50/60 Hz</td>
<td>120 VAC, 50/60 Hz</td>
<td>120 VAC, 50/60 Hz</td>
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</tbody>
</table>

* Sound measurements were taken in a hemianachoic chamber and under free field conditions and do not reflect the influences of actual operating environments. Standard sound pressure levels were taken at an operator position of 1.5 m high and 1 m from source.

** Provided through Donaldson Torit fan program.

*** See system performance curves on page 9.

## ADDRESSING SAFETY CONCEPTS

Donaldson Torit manufactures or partners with experts to provide solutions for critical processes where harmful particulate must be controlled.

- **Explosion Relief Panels** (with or without weather domes)
- **Suppression Systems**
- **Reinforced Housing Construction**
POWERFUL PERFORMANCE

Unlike other technologies that require upgrades for more demanding applications, each DFO 1-1, 2-2 and 3-3 footprint comes standard with a unique high performance power pack. The system performance graphs below show the fan performance with clean filters. The curve indicates available external static pressure to the unit.
DIMENSIONS & SPECIFICATIONS

BASE MODULES
1-1, 2-2 & 3-3

* Top of inlets.

BASE MODULES
2-4 through 4-128

Front View DFO 1-1
Front View DFO 2-2
Left Side View DFO 3-3

Front View DFO 2-Models
Front View DFO 3-Models
Front View DFO 4-Models

Front View DFO 2-12 (3-Wide Models)
Front View DFO 3-18 (3-Wide Models)
Right Side View All Models
<table>
<thead>
<tr>
<th>DFO Model*</th>
<th>Nominal Airflow Range** (cfm)</th>
<th>No. of Filters</th>
<th>Ultra-Web Filter Area (ft²)</th>
<th>No. of Valves</th>
<th>Approx. Shipping Weight (lbs)***</th>
<th>Dimensions (inches)</th>
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<td>760-6,380</td>
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<td>325.0</td>
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</table>

* The first number indicates number of filter rows, and the second number indicates number of cartridges.
** Based on clean filters.
*** Without accessories or optional equipment.
PROVEN PERFORMANCE ON HUNDREDS OF APPLICATIONS

DFO 4-112
on titanium grinding

DFO 3-6
on sawing of high pressure hydraulic hose

DFO 2-2
on paint pigment dust

DFO 2-4
on fiberglass routing & cutting

DFO 4-48
on metal grinding
# STANDARD FEATURES & AVAILABLE OPTIONS

## DFO 1-1, 2-2, 3-3

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<thead>
<tr>
<th>Collector Design</th>
<th>Std</th>
<th>Opt</th>
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<tbody>
<tr>
<td>Mild Steel Construction</td>
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<tr>
<td>Integral High Performance Power Packs</td>
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<td>X</td>
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<tr>
<td>Ledge-Free Hopper</td>
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<td>X</td>
</tr>
<tr>
<td>Inlet</td>
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<td>X</td>
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<tr>
<td>Sprinkler Taps</td>
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<tr>
<td><strong>ExtraLife</strong> Filter Cleaning System</td>
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<tr>
<td>Quick-Removal Access Covers</td>
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<td>X</td>
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<tr>
<td>Integral Exhaust Silencer</td>
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<td>Airflow Damper</td>
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<td>Stainless Steel Construction</td>
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<td>Explosion Protected Models</td>
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<td>High Static Power Packs</td>
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<tr>
<td>Inlet Damper</td>
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<tr>
<td>Abrasion Resistant (AR) Inlet</td>
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<tr>
<td>Sprinkler Heads</td>
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<tr>
<td>Extraction Arms (7”, 10”, 14”)</td>
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<tr>
<td>Caster Packs</td>
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<tr>
<td>Bag-Out Kit (Filter &amp; Discharge)</td>
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</tr>
<tr>
<td>Bag-In/Bag-Out Kit (Filter &amp; Discharge)</td>
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</tr>
</tbody>
</table>

### Cartridge Filters

- **Ultra-Web** (MERV* 13)
- Fibra-Web® (MERV 14); Ultra-Tek® (MERV 12); Thermo-Tek® (MERV 12); Torit-Tex™ (MERV 16)
- HEPA/ASHRAE Afterfilters

### Paint System

- Electrostatically applied powder coat TGIC polyester texture finish (2-mil dry film thickness) inside and out. Paint system passed 350-hr. salt spray test.
- Custom Color
- Hostile Environment Coating
- Epoxy Coating

### Hopper Discharge

- 10-Gallon Pail Pack
- 10-Gallon Pail Pack with Sealer Gear
- 25-Gallon Dust Container

### Electrical Controls, Gauges & Enclosures

- Minihelic*** Gauge
- Manual or Automated Downtime Cleaning
- Solenoid Enclosure in NEMA 12
- Continuous On-Demand Delta P Control
- Solenoid Enclosure NEMA 9
- Starter Controls

### Warranty

- 10-Year Warranty

---

* The Minimum Efficiency Reporting Value (MERV) of this filter cartridge has been determined through independent laboratory testing using ASHRAE 52.2 (2007) test standards. The MERV rating was determined at a face velocity of 1.18 feet per minute and loading up to four inches water gauge. Actual efficiency of any filter cartridge will vary according to the specific application parameters. Dust concentration, airflow, particle characteristics, and pulse cleaning methods all affect filtration efficiency.

** Minihelic, Magnehelic and Photohelic are registered trademarks of Dwyer Instruments, Inc.
GLOBAL SUPPORT

• Facilities in 37 countries
• 40 manufacturing plants and 14 distribution centers
• Sales offices worldwide

LEADING TECHNOLOGY

• Over 1,000 engineers and scientists worldwide
• Broad range of innovative collectors and filters
• 100s of filter media formulations

EXPERIENCE & SERVICE

• Technical expertise and support
• Ready-to-ship filters and parts within 24 hours
• 1,000,000+ dust, fume, and mist collectors installed

Call Donaldson Torit to get Cleaner Air today
800-365-1331
donaldsontorit.com