



Donaldson[®]
Filtration Solutions

**Replacement Filters &
System Spare Parts
for Gas Turbine Air Inlets**



Especially
for Oil & Gas
Pipeline
Installations



GTS-402
Effective 2002-03

26" GDX/GDS Filter Pairs (1 Cylindrical & 1 Conical)

In the Donaldson GDX Air Inlet Self-Cleaning (pulsed) and GDS (static) Filtration Systems, one conical and one cylindrical filter are paired and mounted horizontally to provide superior turbine protection.

Features

- Many high performance choices, including our exclusive high performance Spider-Web and new Spider-WebXP nanofiber media.
- Can be individually boxed or bulk packed on a pallet.....your choice.

Sturdy Construction

- Pleats: To maintain maximum filtering surface: (a) pleats are held in place with hot melt spiral beading inside and outside, (b) our patented Pleatloc™ technique prevents media bunching.
- Liners: Galvanized expanded metal.
- Endcaps: Galvanized metal
- Gasket: Seamless urethane

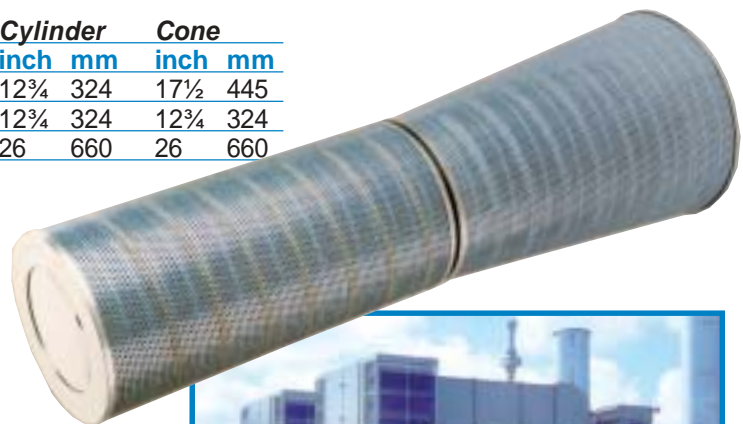
Replacement Filters

Part No.	Description	Media
P03-0025	26" Cylindrical	Synthetic/Spider-WebXP**
P03-0158	26" Conical	Synthetic/Spider-WebXP**
P19-1033	26" Cylindrical	Synthetic
P19-1107	26" Conical	Synthetic
P19-1280	26" Cylindrical	Duratek/Spider-Web
P19-1236	26" Cylindrical	Duratek*
P19-1238	26" Conical	Duratek*
P19-1037	26" Cylindrical	Cellulose
P19-1039	26" Conical	Cellulose

* Duratek is Donaldson's proprietary blend of synthetic and natural fibers.

** Extra performance media. See data below.

Dimensions	Cylinder		Cone	
	inch	mm	inch	mm
Large end OD	12¾	324	17½	445
Small end OD	12¾	324	12¾	324
Length	26	660	26	660



Typically Used In:

- GDX Pulse-Cleaned Filter Systems
- Donaldson GDS-I Static Filter Systems

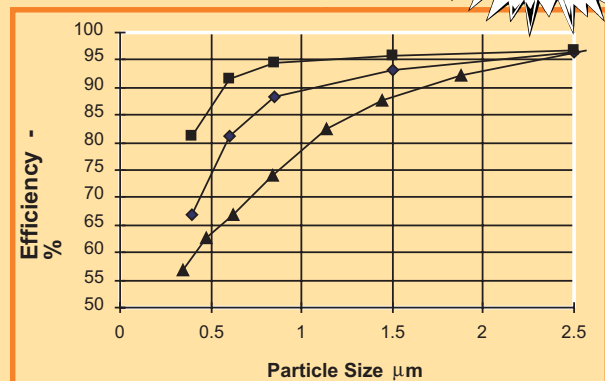


Spider-Web® XP Extra Performance for Reduced Compressor Fouling and Improved Heat Rate



Less compressor fouling results in higher turbine output and improved heat rate -- and therefore more efficient fuel consumption. Our new **extra performance** Spider-Web® XP nanofiber technology reduces blade fouling significantly by capturing more dust particles in the 0-2µm size range.

Fractional efficiency tests show that on 0.5µm size particles, the initial efficiency of Donaldson Spider-Web® XP is TWICE that of our regular Spider-Web®! (26% of 0.5µm-size particles are left to pass through vs only 13%.) And it's just about THREE TIMES better than competitive offerings! Stopping more of the dust particles in the 0 to 2µm in size range reduces compressor fouling and improves heat rate.



■ Synthetic Media with new Donaldson Spider-Web® XP
 ◆ Synthetic Media with Donaldson Spider-Web®
 ▲ Competitor

22" & 26"-Long Cylindrical Filter Cartridges



Features

- Available in wide choice of media to fit specific operating conditions
- Ruggedly constructed for long life
- Can be individually boxed or bulk packed on a pallet.....your choice.

Construction

- Shape: cylindrical
- Pleats: To maintain maximum filtering surface: (1) pleats are held in place with hot melt spiral beading inside and outside and (2) our patented Pleatloc™ technique maintains uniform spacing.
- Liners: Galvanized expanded metal
- Endcaps: Galvanized metal with filter media potted in plastisol
- Gasket: Seamless urethane

Add a Pre-Filter Stage

You can easily and inexpensively add a 2nd stage of filtration, without adding much pressure drop, by adding a pre-filter wrap around the elements. They extend the life of the primary filter by capturing much of the incoming particulate, and can be changed out without shutting down the system. See details on page 5.

Typically Used In:

- TTD on Solar Turbines (filters mounted vertically)
- Non-Donaldson systems
- Compressors

Dimensions

Diameter OD	12 ³ / ₄ "	324mm
Diameter ID	8.38"	213mm
Length	22"	559mm



Cylindrical Filters

Part No.	Length	Media
P19-1031	22"	Synthetic
P19-1234	22"	Duratek*
P19-1006	22"	Cellulose
P03-0025	26"	Synthetic/Spider-WebXP**
P19-1033	26"	Synthetic
P19-1280	26"	Duratek*/Spider-Web
P19-1236	26"	Duratek*

* Duratek is Donaldson's proprietary blend of synthetic and natural fibers.

** Extra performance media. See data on page 2.

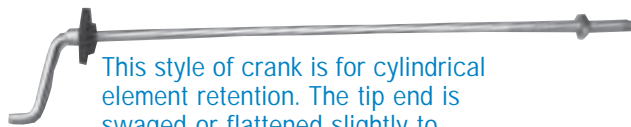
See pre-filter wraps on page 5.

Element Retention Cranks for Donaldson TTD Systems

TTD filters can be retrofitted with Quick-Nut retention hardware, to make filter changeout easier and faster. Call us for details.



P52-4740
Gasket Washer



This style of crank is for cylindrical element retention. The tip end is swaged or flattened slightly to enable faster fitting into the element retainer bracket, and the gasket washer is already installed.



This element retention crank, with the stopper fixed near the handle, fits our Quick-Nut bracket.

Element Retention Hardware

24767-00	QUICK NUT ASSEMBLY
24975-00	T-WRENCH FOR QUICK-NUT
P14-9555	26" CRANK FOR QUICK-NUT
P52-4742	22" CRANK/WELD NUT, SWAGE END
P15-7359	26" CRANK/ WELD NUT, SWAGE END
P52-4740	GASKET WASHER
P77-0920	ELEMENT RETENTION NUT

Panel & Cartridge Filters



20" Sq Barrier Filter Panel

Standard 20"/508mm square barrier panel filter is available in two models: high performance and economy.

- The **P14-6555 high performance** unit is the same one we put into first-fit systems for our OEM customers. It contains over 100 sq. ft. of heavy-duty cellulose media, is structurally strong via polymer pleat spacers, and is built for long life and high efficiency at low ΔP.
- The **economical P53-4557** panel contains approximately 50 sq.ft. of fiberglass media, and has metal spacers for structural stability.

Specifications

- **Efficiency:** F8 / 90-95% ASHRAE
- **Shape:** square
- **Dimensions:**
20 x 20 x 5 inches / 508 x 508 x 127 mm
- **Rated Airflow:** 1300-2000 cfm
- **Liners:** aluminized steel
- **Carton Weight:** 20 lbs

Part Numbers

P14-6555
with extended-life media

P53-4557
with standard-life media



Donaldson
V-House Filter

Flange-Top Cartridge

For Farr Tenkay Systems

Our flanged replacement filters let you put the superior quality & performance of Donaldson-made filter cartridges into a Farr Tenkay-GT system.

Although a direct replacement in form and fit, these filters have features added for improved performance, including:

- Choice of media. See order number list below
- Constructed to ensure higher performance: Donaldson Pleatloc™, and hot melt spiral beading, both inside and outside the filter.
- Galvanized metal endcaps and liners for long, rust-free life.

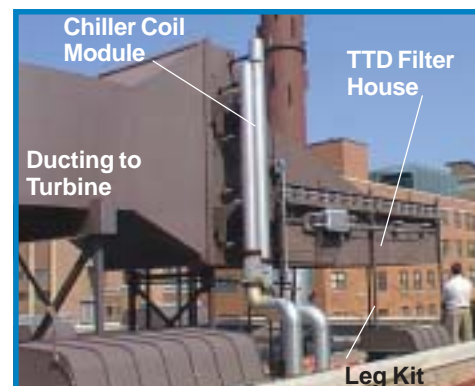


Dimensions

Diameter OD	12¾"	324mm
Length	27"	686mm

Part Numbers

P19-1788	Synthetic/Spider-WebXP
P19-1261	Duratek/Spider-Web
P19-1295	Duratek
P19-1937	Cellulose



Pre-Filter Wraps

Donaldson pre-filter wraps extend primary filter service life and add an extra stage of filtration on gas turbine air inlet static filter systems. These medium efficiency polyester pre-filters are designed to capture large particles, seeds, airborne fibers and sticky hydrocarbons before they reach the filter cartridge.

Some operations use them seasonally, such as during cottonwood season in spring. Others use wraps to protect against site-specific problems, such as a nearby ash or coal processing plant.

Wraps are inexpensive and easy to change. They can be installed and removed without shutting down the turbine.

Typically Used in

- Urban and industrial environments with a mix of dust and hydrocarbons.
- Areas with seasonal higher-than-normal concentrations of airborne fibers, seeds, or large particulate.

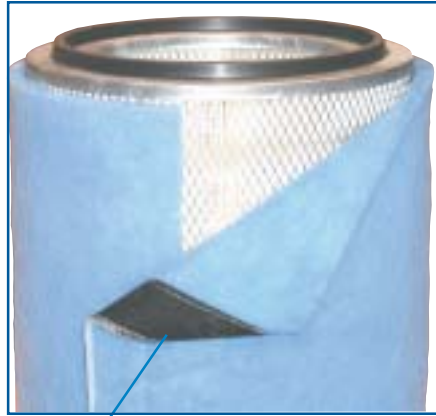
Features

- Velcro closure allows easy installation and removal around cylindrical and conical filters.
- High-loft filter media has minimal effect on system pressure drop.

Thickness: 3/4" / 19 mm

Initial Resistance: <0.1" H₂O

Efficiency by Weight: 75-80%



Velcro® strip for secure closure

Pre-Filter Wraps

Part No.	Length	Shape
P19-1005	22"	cylindrical
P19-0978	26"	cylindrical
P19-0979	26"	conical

A Word of Caution

We have had reports from customers that our competitors offer wraps or sprays claiming that they "work just as well as Spider-Web®." **BEWARE! This is simply not true!** Pore sizes (the spaces between the fibers through which air passes) of these two materials are so different -- it's like comparing a window screen to an open window! Donaldson Spider-Web is designed to capture very small particles, and pre-filter wraps are designed to capture large dirt and debris. Each has a distinct purpose and function in gas turbine inlet filtration.

We generally don't recommend using wraps on pulse-cleaned systems because the pulse simply drives the dirt from the filter element into the depth of wrap.

Ask Us About Conversions, Modifications & Upgrades

The Donaldson Conversions, Modifications, and Upgrades Team (CM&U) stands ready to discuss your specific needs and find the best solution for your update.

Turbines operate for many years, as do the Donaldson Inlet Filtration Systems that protect them from airborne contaminants. As your filter system ages, it may need some refurbishment... or need to be modified for better performance...or converted to a more efficient design.

- Cooling Systems
- Fog Removal Elements
- Salt Removal Elements
- Better Filter Media
- From Static to Self-Cleaning
- Bird Screens
- Flame Retardant Media
- Inlet Hood Enhancements (sound absorbers; mist eliminators; pre-filters, etc)

What do you need for better performance?

Call us to discuss your situation: **1-800-431-0555.**

Design a Custom Filter System with our Standard System Configurator

Larger systems (to 1.2 million ACFM) can be custom quoted. Call us!



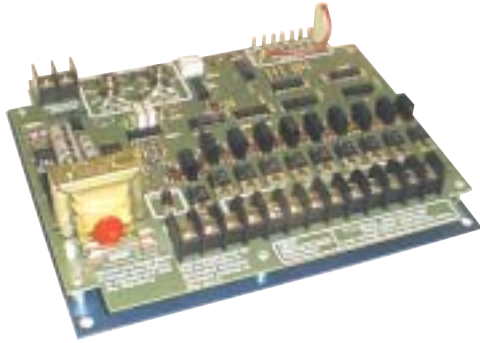
Looking to retrofit a new filter house on an older or refurbished turbine? Our new standard systems will make it easy to configure exactly what you need -- a custom design with the speed & pricing of standard. Colorful, illustrated brochures guide you through step by step in specifying a new TTD (pulsed/self-cleaning) or GDS (static) filtration system.

Ask for free brochures:

GTS-111 **GDS Static System**
(9000-79000 ACFM)

GTS-103 **TTD Pulse System**
(2400 - 88000 ACFM)

System Spare Parts



Timer Boards

Part Number	Description
P12-5888	TIMER BOARD, 115VAC, 10 OUTPUTS
P13-5057	TIMER BOARD, 24VDC, 10 OUTPUTS
P13-5247	VOLTAGE REGULATOR
P13-5712	1/4 AMP FUSE
P13-9675	1-AMP FUSE
P13-2582	3 AMP FUSE

Differential Pressure Gauges & Switches

Pressure gauges tell you when to change filter elements in your Donaldson Gas Turbine Filtration System. As the filters do their job and load up with dust and dirt, the differential pressure (also called ΔP or pressure drop) across the filters gradually increases. When the upper limit of acceptability is reached on the gauge, you know it's time to change out the filter elements.



Pressure Gauge + Switch

This unit serves two functions: it is both a differential pressure gauge and a switch. (Although the photo above shows the gauge & switch physically connected, in most Donaldson filtration systems, they are physically separated and connected by a cable, which is also provided with the unit.) Pressure gauge/switches are typically used in Donaldson self-cleaning gas turbine filtration systems to start and stop the pulse-cleaning mechanism.

Typically used in: TTD & GDX self-cleaning filtration systems.

Part Number	Number on Unit	Comments
Differential Pressure Combination Switch/Gauges		
47835-01	A3008-RMR-LT	Settable: 0"-8" H ₂ O, Temp: -40° to 120°F Scales: inches H ₂ O & mm H ₂ O 12" switch-to-gauge cable
47835-02	A3008-RMR-LT	Settable: 0"-8" H ₂ O, Temp: -40° to 120°F Scales: inches H ₂ O & milibar 12" switch-to-gauge cable
47835-03 Formerly P12-5584	A3008-RMR-LT	Settable: 0"-8" H ₂ O Temp: -40° to 120°F Scales: inches H ₂ O & kPa 12" switch-to-gauge cable
P12-5887	A3000	Settable: 0"-8" H ₂ O, Temp: -40° to 120°F Scales: inches H ₂ O 16" switch-to-relay cable 24VDC (Does not inclu. relay pack)

Differential Pressure Gauge

25006 Formerly P139022	2010	Settable: 0"-10" H ₂ O Temp: -40° to 140°F Rating: 25 psig sustained Scales: inches H ₂ O & mm H ₂ O
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Differential Pressure Gauge

This gauge measures the differential pressure (also called ΔP or pressure drop) across two different areas, usually the inlet/outlet of the filters.

Typically used in: all Donaldson gas turbine filtration systems & inlet treatment systems

System Spare Parts

Pilot Solenoid Valves and Enclosures

- Replace the entire coil part (per valve numbers below), or
- Replace only the inner parts (per repair kits listed below), or
- Replace the entire valve enclosure (per numbers below.)
- For valves that are inside enclosures that are NEMA 4, NEMA 7, CSA-appvd, UL-apprvd, or Cenelec-certified EEx'd'



Electrical	NPT	No. on Unit	Part Number	Enclosure	Repair Kit for this valve
110VAC		9302	42365-00	Weatherproof	n/a
115VAC	1/8"	RCA3	25409-00	NEMA 4	37831-00
24VDC	1/8"	RCA3	37827-00	NEMA 7	24636-00
12VDC	1/8"	RCA3	37260-00	n/a	n/a
24VDC	1/4"	RCA5	25694-00	NEMA 7	24765-00
115VAC	1/4"	RCA5	24729	NEMA 7	24765-00

Typically used in:

- TTD (filters mounted vertically)
- GDG (filters mounted horizontally)



Remote-Actuated Pneumatic Diaphragm Valves

Diaphragm valves are pneumatic valves that connect to a remote solenoid for pilot control. These valves, with 1"/25mm orifices, are part of the mechanism that operates the reverse pulse of air that cleans the filters. Order the entire valve, or just a repair kit, depending on what you need.

Typically used in: DonaldsonTTD(filters mounted vertically)

Description	Part Number	No. on Unit	Comments	Repair Kits for this Valve
Diaphragm Valve <i>(Not pictured)</i>	19443-00	RCA25TD	Needs 1" NPT couplings -40° to 180°F	23536-00
Diaphragm Valve <i>(Photo shown above)</i>	24277-00	RCA25DD	Integral couplings -40° to 180°F	23536-00 (diaphragm) 25696-00 (seal kit)

V-House Water Separation Parts

Louvers: The white vinyl louvers on the face of your Donaldson V-House remove rain, sleet & snow from the airstream. While they don't wear out, they can incur damage (dents, tears, etc) from accidents with nearby machinery, and may need full or partial replacement.

Pre-Filters & Coalescers: Between the white weather louvers and the panel filters, there's a slot for either a pre-filter pad or a moisture eliminator/coalescer pad. Which you have depends on your environment -- pre-filters capture dust, while moisture eliminators coalesce the small water droplets that pass through the weather louvers.



Part Number	Description	Material or Media	Dimensions
P12-5343	Weather Louver	white vinyl	41.15" X 5"
P12-5350	Weather Louver	white vinyl	61.56" X 5"
P12-5342	Mist Eliminator	Polypropolene mesh (black)	10.75"W x 41.5"H x 1"D
P12-5349	Mist Eliminator	Polypropolene mesh (black)	10.75"W x 61.75"H x 1"D
P12-5416	Pre-Filter	polyester pad (white)	10.75"W x 41.5"H x 1"D
P12-5417	Pre-Filter	polyester pad (white)	10.75"W x 61.75"H x 1"D

Match Filter Media to Your Environment

Find the Filter Media recommended for the conditions in which your turbines operate.

	Synthetic with Spider-WebXP	Synthetic with Spider-Web	Synthetic	Duratek with Spider-Web	Duratek	Cellulose
Desert: Arid; heavy dust concentration; sandy; mostly quite fine particulate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Arctic: very cold, dry air; any moisture turns to frost and builds up on filter elements; heavy insects in warm seasons		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Urban/industrial areas; heavy hydrocarbons in the air; variety of particulates, both large & very small	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Industrial , high concentrations of a variety of particulate, both large & very fine	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Marine , coastal, humid, moisture-laden air		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Light particulate concentration, dry operating conditions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Rain forest , very wet, high concentration of insects		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

See Donaldson Brochure GTS-200 for photos & specifications on our filter media.



Where to Find Us:

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