Donaldson
FILTRATION SOLUTIONS

Donaldson Delivers

FUEL FILTRATION GUIDE

for Flow Rates up to 606 lph

Head Assemblies, Filters, Accessories

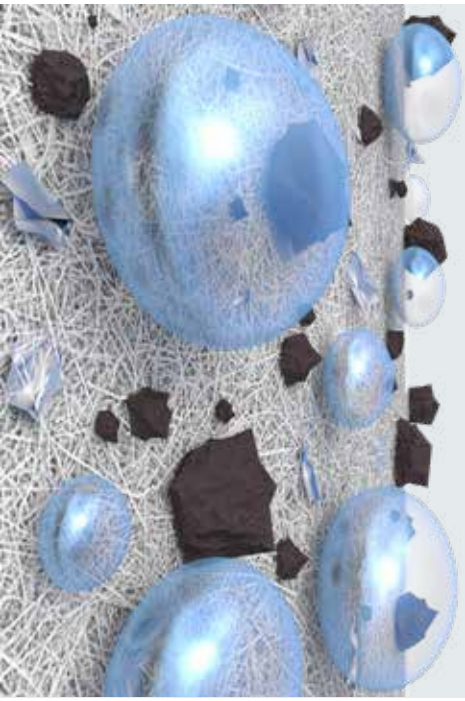
FUEL FILTERS
– That are anything but standard

Fuel filtration today is an integral part of the complete fuel system. A well designed fuel system takes contamination control into account from the beginning. Water, particulate and non-traditional contaminants need to be controlled.

On-engine filters are your last chance to remove contaminant. It's critical that your filters capture and retain contaminants damaging to your engine under all operating conditions. Donaldson fuel filters provide premium protection for high pressure common rail (HPCR) fuel systems.

The same filtration technology and expertise you've come to expect from Donaldson air filters is in every liquid filter we design and manufacture.

The presence of water in fuel may result in reduced lubrication properties, corrosion, abrasion and rapid wear to fuel system components, potentially resulting in catastrophic injector failure. Fuel water separating filters, which use specialised hydrophobic or hydrophilic filter media to separate water from the fuel, cause the water to accumulate in the reservoir of the filter, where it can be removed with the Twist&Drain™ valve.



Why remove water in fuel?

Free or emulsified water must be removed from the fuel to maximise fuel system performance and service life.

Water in fuel can prematurely wear and oxidise the components within the fuel injectors, leading to:

- Rusting and corrosion of components
- Governor/metering component failure
- Sticky metering components (both pump and nozzle)
- Injection component wear and seizure
- Reduced lubrication

HARMFUL CONTAMINANTS FOUND IN FUEL SYSTEMS – How Particles and Water are Removed

If you were to look closely at the fuel in your equipments fuel tank, you would likely find a range of contaminants that are potentially causing harm to your engine.

Contaminated fuel can lead to vehicle downtime and costly repairs, especially to expensive common rail systems and components. Modern engines increasingly require better fuel filtration technology to ensure you are delivering the cleanest fuel to your vehicle's fuel system. The most common contaminants found in fuel include:

Particulate & Debris
Enters when the fuel is transferred between storage tanks and when exposed to the atmosphere. Particulate in the fuel can disrupt engine combustion, block the fuel system and cause wear on fuel injector equipment.

Water
Water in fuel causes corrosion and will erode injector nozzles. It can negatively affect the combustion process, reduce the lubricity of the fuel and consequently damage system components. Water enters fuel from storage tanks, and from condensation caused by cooling temperatures.

Wax/Paraffin
Often a component of the fuel, it can drop out of liquid form in cold conditions (also known as gelling).

Microbes (Bacteria)
Can grow in any free water in the fuel tank.

Fuel Degradation Products
Fuel by-products result from the thermal and oxidative instability of fuel prior to combustion.

Asphaltenes
Found naturally in crude oil, this can often be found in refined fuel.

Air
Enters the system from leaks in fuel lines or system connections.

How Particles and Water are Removed

1. Dirty fuel enters the filter through holes in the baffle or thread plate.

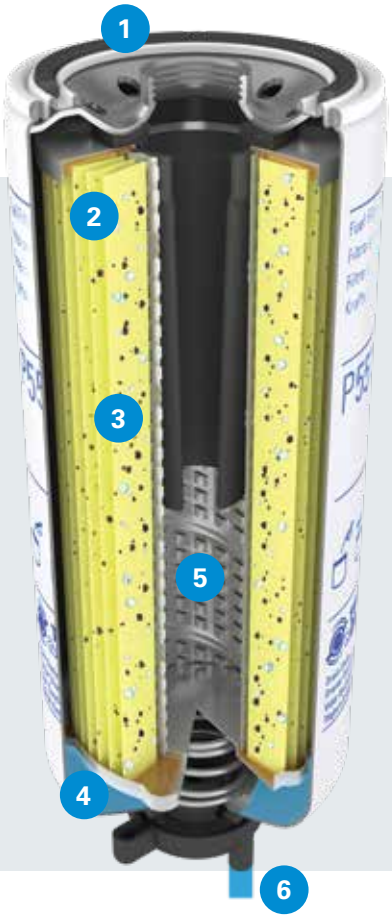
2. Contaminants and debris are removed from the fuel as they pass through the filter

3. Specialised filter media removes water from the fuel

4. The captured water coalesces into large drops that drain into a lower cavity of the spin-on unit or bowl

5. Clean fuel leaves the filter through the centre tube

6. The collected water should be drained by the operator daily.



CHOOSE THE FILTER THAT WORKS FOR YOU – Twist&Drain™ Style Fuel Filters

Fuel water separating filters (FWS) differ from other spin-on filters as they have a reservoir area to hold separated water and drain valve to allow that water to be removed. The reservoir may be the lower section of the filter, a separate clear bowl, or a combination of both. If the water is not drained regularly, and rises to the level of the filter media element, water can be forced past the filter, so it is important that it be drained regularly. The frequency with which the FWS needs to be drained is ultimately dependent on the quality of the fuel that is being used. Most OEM's recommend draining your water separator daily.

Donaldson Twist&Drain™ style fuel filter water separators have a connection that can accommodate multiple drain valve types, as well as a water collection bowl. The clear water collection bowl (80ml capacity) is a separate component that can be added on for easy, visual water inspection and maintenance. All fuel filter water separators ship with a standard Twist&Drain™ valve. A variety of other Twist&Drain™ valves types are available so you can configure the exact system needed.

YOU HAVE A CHOICE

You can always choose top-quality Donaldson filters designed specifically for your engines and equipment and – as long as you change them according to the engine manufacturer's maintenance schedule – using Donaldson filters **will not** void your engine manufacturer's warranty.

DURABLE AND RUGGED
– Flexibility to choose the system you prefer

- **Easy to Service** - wide grip drain valve profile
- **High Performance Filtration** - industry leading filtration technology
- **Self Venting Drain** - water removal is tool-free
- Accepts existing OEM water-in-fuel (WIF) sensors
- Optional water collection bowl for quick visual water inspection

Priming Pump Head

Basic Head

High Flow Head

OPTIONAL
Clear Water Collection Bowl

Spin-on Fuel Filter
Water Separator

Spin-on
Fuel Filter

Standard
Twist&Drain™ Valve

Twist&Drain™ Valve with
1/2in - 20 UNF Threaded
Sensor Port

Twist&Drain™ Valve with
Passive Water-in Fuel Sensor
Packard Terminal

Twist&Drain™ Valve with
Passive Water-in Fuel Sensor
Deutsch Terminal

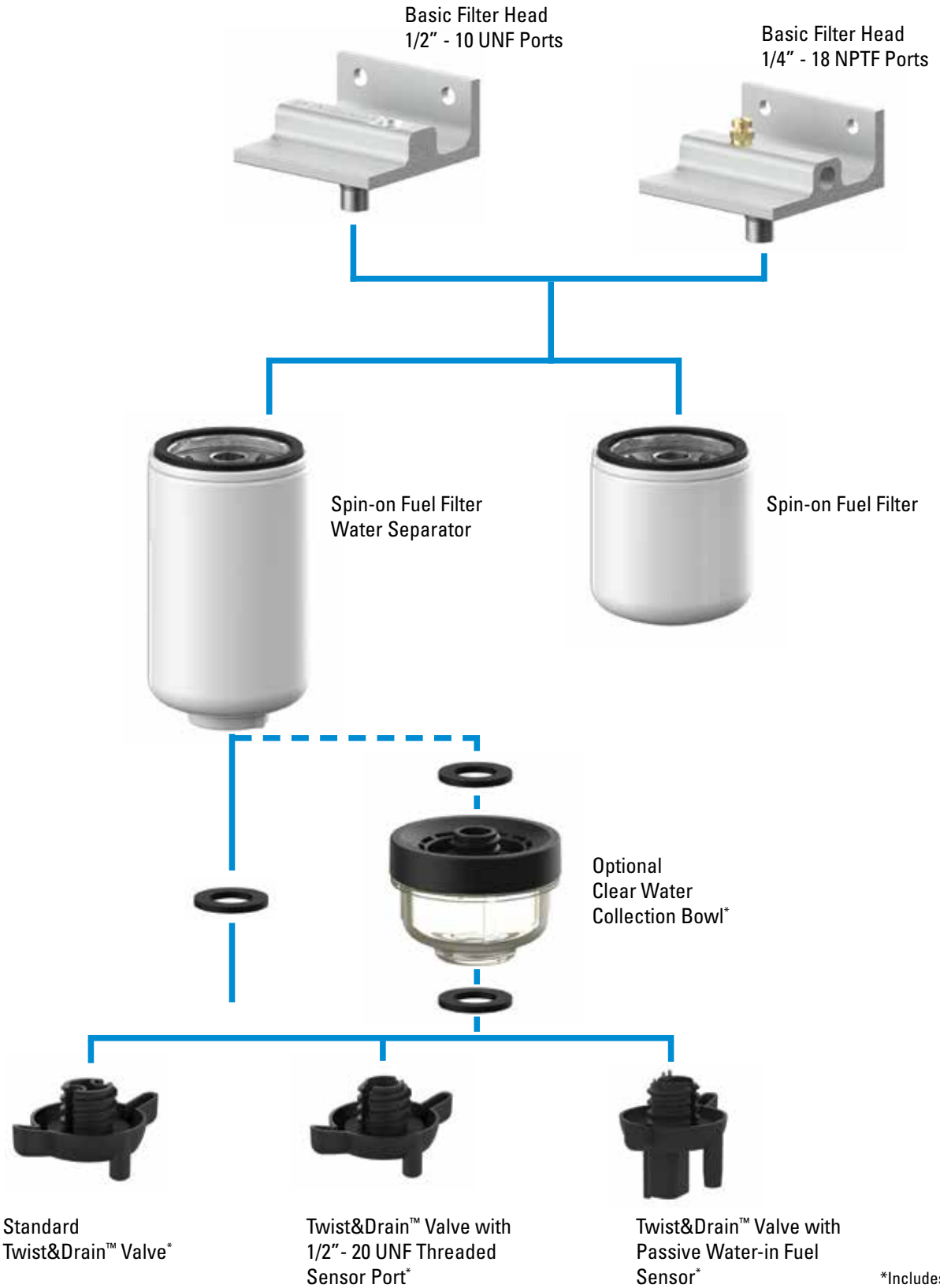
Fuel Filtration
Filter Dia. 76mm (3.0”) x M16-1.5

Max Flow Rate
114 lph / 30 gph

Operating Pressure
0-100 psi / 690 kPa (basic head)
0-80 psi / 551 kPa (with bowl)

Temperature Range
-40°C to 121°C

Fuel Compatibility
#1 or #2 Diesel, Biodiesel up to B20 and JP8, Kerosene



*Includes seal

Filter Heads

Type	Max Recommended Flow Rate		Head Height		Port Size	Part Number
	lph	gph	mm	in		
Basic Filter Head (1 inlet, 1 outlet))	114	30	28.4	1.12	1/4” - 18 NPTF	P560382
	114	30	28.4	1.12	1/2” - 10 UNF	P562263

Filter Head Accessories

Type	Description	Comments	Part Number
Fuel Head Fittings	1/4” - 18 NPTF Hose Tail Straight, 10mm i.d. hose	Suits P560382 Head	P506053
	1/4” - 18 NPTF Hose Tail Right Angle, 10mm i.d. hose	Suits P560382 Head	P506054

Fuel Filters

Filter Type	Max Recommended Flow Rate		Filter Length		Service Clearance	Media Type	Efficiency @ 99%	Part Number
	lph	gph	mm	in				
Spin-on Fuel Filter	57	15	83	3.26	24mm (.93in)	Cellulose	9 µm	P555095
	95	25	120	4.72		Cellulose	9 µm	P550943
	57	15	83	3.26		Cellulose	16 µm	P550345
	95	25	120	4.72		Cellulose	16 µm	P553004
	114	30	120	4.72		Cellulose	16 µm	P550440
Spin-on Fuel Filter Water Separator	114	30	148	5.82		Synteq	3 µm	P551615
	114	30	148	5.82		Treated Cellulose	11 µm	P550588
	57	15	102	4.01		Treated Cellulose	15 µm	P551039
	114	30	148	5.82		Treated Cellulose	15 µm	P550248

Optional Bowl, Drain Valve & Sensors

Type	Bowl Length		Comments	Part Number
	mm	in		
Clear Water Collection Bowl	50	1.98	Fits all Twist&Drain water separating filters	P569758

Type	Description	Comments	Part Number
Valve with Sensors	Twist&Drain valve* 1/2” - 20 UNF Threaded Sensor Port	Threaded Sensor Port	P550865
	Twist&Drain Valve with Passive Water-in-Fuel Sensor* Packard Terminal	Electrical Connection	P570618
	Twist&Drain Valve with Passive Water-in-Fuel Sensor* Deutsch Terminal	Electrical Connection	P570619

*Connects to existing engine management system only

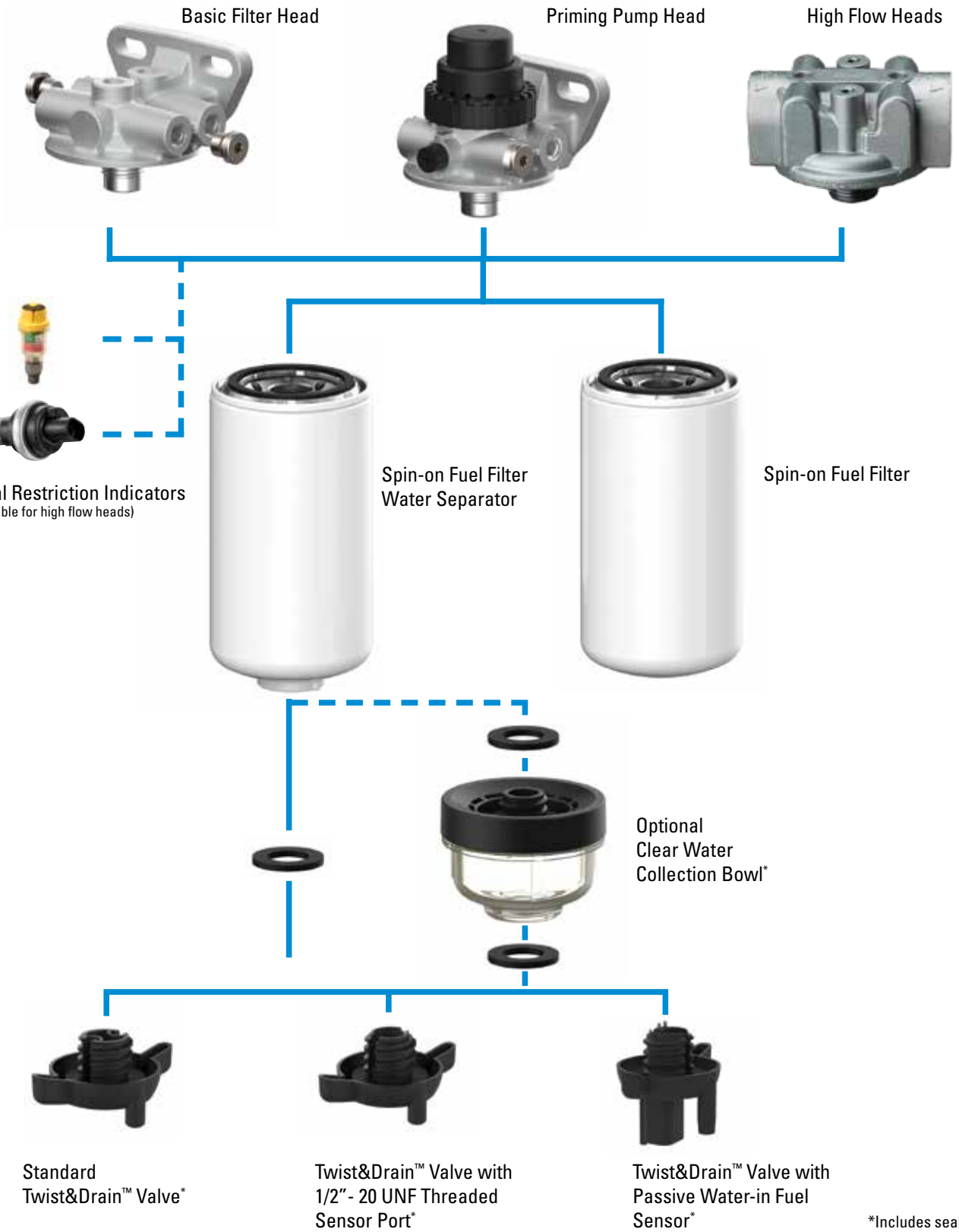
Fuel Filtration
Filter Dia. 93mm (3.54") x 1"-14

Max Flow Rate
606 lph / 160 gph

Operating Pressure
0-30 psi / 210 kPa (pumping heads)
0-100 psi / 690 kPa (basic and high flow heads)
0-80 psi / 551 kPa (with bowl)

Temperature Range
-40°C to 121°C

Fuel Compatibility
#1 or #2 Diesel, Biodiesel up to B20 and JP8, Kerosene



*Includes seal

Filter Heads

Type	Max Recommended Flow Rate		Head Height		Port Size	Part Number
	lph	gph	mm	in		
Basic Filter Head (2 inlet, 2 outlet, includes 2 plugs)	205	54	58.6	2.31	M12 x 1.5	P576712
	420	111	58.6	2.31	M14 x 1.5	P576714
Priming Pump Heads (2 inlet, 2 outlet, includes 2 plugs)	105	28	84.3	3.32	M12 x 1.5	P576612
	220	58	84.3	3.32	M14 x 1.5	P576614
High Flow Heads (1 inlet, 1 outlet)	606	160	41.5	1.63	1/2" - 14 NPTF	P562261
	606	160	41.5	1.63	7/8" - 14 UNF	P562262

Filter Head Accessories

Type	Description	Comments	Part Number
Fuel Head Fittings	M12 x 1.5 Hose Tail, 12mm i.d. hose	Suits P576712, P576612 Heads	P506149
	M14 x 1.5 Hose Tail, 12mm i.d. hose	Suits P576714, P576614 Heads	P506150
	M14 x 1.5 to M12 x 1.5 Threaded Reducer	Suits P576714, P576614 Heads & Indicators	P506153
Restriction Indicators	M12 x 1.5 Visual, Stepped	4 Steps to 5psi / 34kPa	X220052
	M12 x 1.5 Electrical	Set point 5psi / 34kPa	X220057
	Packard Electrical Leads	Suits X220057	P633875

Restriction Indicators for installation on SUCTION side of head assembly in suction applications

Fuel Filters

Filter Type	Max Recommended Flow Rate		Filter Length		Service Clearance	Media Type	Efficiency @ 99%	Part Number
	lph	gph	mm	in				
Spin-on Fuel Filter	379	100	177	6.95	24mm (.93in)	Cellulose	3 µm	P551313
	606	160	240	9.43		Cellulose	3 µm	P551311
	303	80	174	6.85		Cellulose	9 µm	P557440
	379	100	200	7.87		Cellulose	9 µm	P555627
	606	160	240	9.43		Cellulose	9 µm	P551712
	454	111	221	8.69		Cellulose	15 µm	P552253
	227	60	136	5.35		Cellulose	17 µm	P552251
	150	40	107	4.22		Cellulose	25 µm	P550104
	227	60	136	5.35		Cellulose	25 µm	P550105
	303	80	174	6.85		Cellulose	25 µm	P553854
	379	100	188	7.40		Cellulose	25 µm	P550106
	227	60	147	5.78		Wire Mesh	140 µm	P552203
Spin-on Fuel Filter Water Separator	341	90	193	7.61		Treated Cellulose	3 µm	P553203
	379	100	219	8.64		Treated Cellulose	3 µm	P553207
	341	90	187	7.38		Synteq	10 µm	P550847
	379	100	195	7.68		Synteq	10 µm	P551001
	379	100	219	8.64		Synteq	10 µm	P553201
	454	111	246	9.70		Synteq	10 µm	P551000
	341	90	187	7.38		Treated Cellulose	15 µm	P558000
	379	100	219	8.64		Treated Cellulose	35 µm	P553204

Refer to page 7 or 11 for optional bowl, drain valve & sensors.

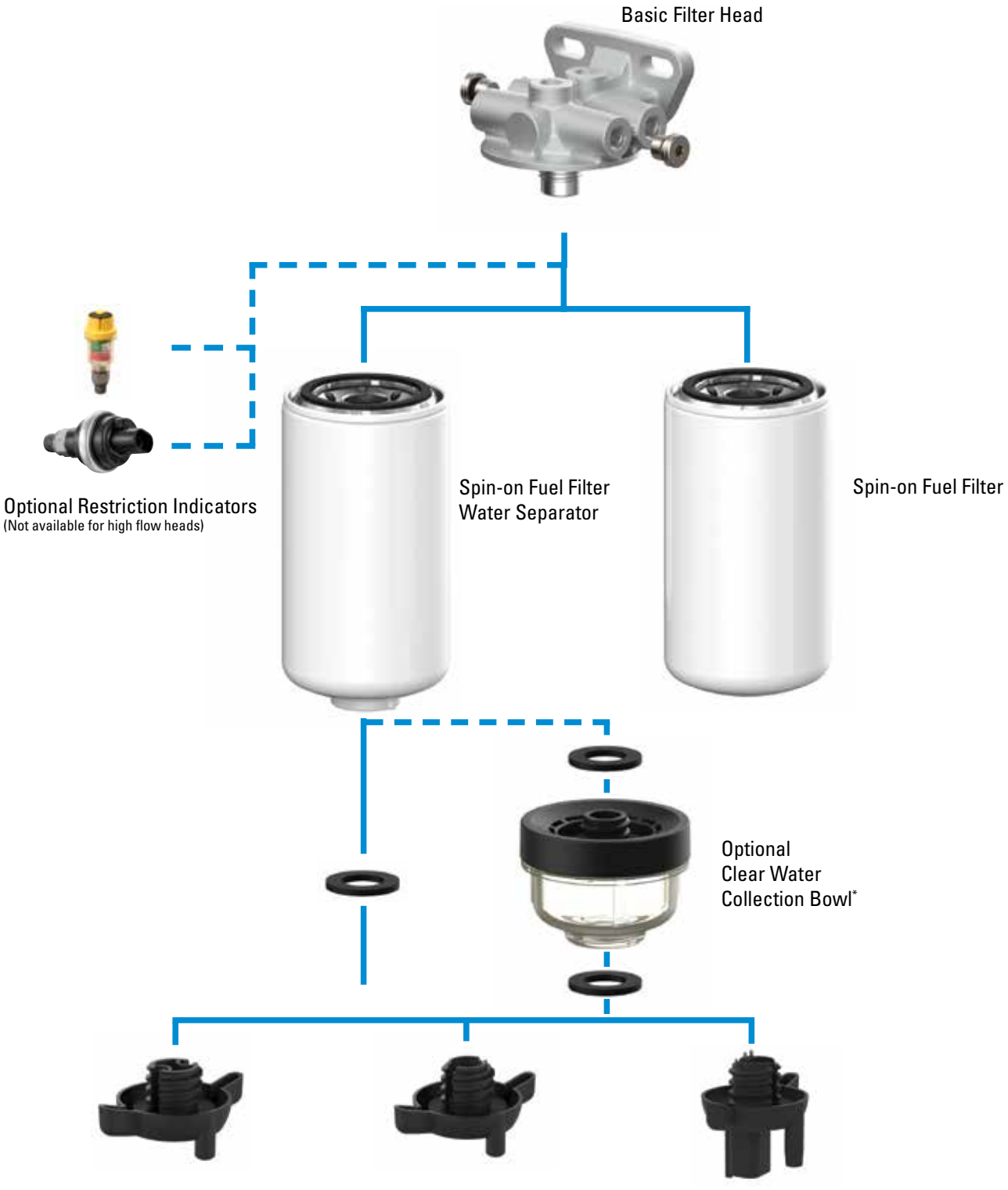
Fuel Filtration
Filter Dia. 108mm (4.25”) x 1”-14

Max Flow Rate
606 lph / 160 gph

Operating Pressure
0-100 psi / 690 kPa (basic head)
0-80 psi / 551 kPa (with bowl)

Temperature Range
-40°C to 121°C

Fuel Compatibility
#1 or #2 Diesel, Biodiesel up to B20 and JP8, Kerosene



*Includes seal

Filter Heads

Type	Max Recommended Flow Rate		Head Height		Port Size	Part Number
	lph	gph	mm	in		
Basic Filter Head (2 inlet, 2 outlet, includes 2 plugs)	450	119	54	2.13	M14 x 1.5	P576071
	606	160	54	2.13	M16 x 1.5	P576072

Filter Head Accessories

Type	Description	Comments	Part Number
Fuel Head Fittings	M14 x 1.5 Hose Tail, 12mm i.d. hose	Suits P576071 Head	P506150
	M14 x 1.5 to M12 x 1.5 Threaded Reducer	Suits P576071 Head & Indicators	P506153
Restriction Indicators	M12 x 1.5 Visual, Stepped	4 Steps to 5psi / 34kPa	X220052
	M12 x 1.5 Electrical	Set point 5psi / 34kPa	X220057
	Packard Electrical Leads	Suits X220057	P633875

Restriction Indicators for installation on SUCTION side of head assembly in suction applications

Fuel Filters

Filter Type	Max Recommended Flow Rate		Filter Length		Service Clearance	Media Type	Efficiency @ 99%	Part Number
	lph	gph	mm	in				
Fuel Filter Water Separator	230	60	147.1	5.79	33mm	Synthetic	4 µm	P551055
	230	60	147.1	5.79		Synthetic	10 µm	P551056
	230	60	147.1	5.79		Synthetic	30 µm	P551057
	340	90	173.1	6.93		Synthetic	4 µm	P551065
	340	90	173.1	6.93		Synthetic	10 µm	P551066
	340	90	173.1	6.93		Synthetic	30 µm	P551067
	450	120	234.7	9.24		Synthetic	4 µm	P551075
	450	120	234.7	9.24		Synthetic	10 µm	P551076
	450	120	234.7	9.24		Synthetic	30 µm	P551077
	606	160	234.7	9.24		Synthetic	10 µm	P551026

Optional Bowl, Drain Valve & Sensors

Type	Bowl Length		Comments	Part Number
	mm	in		
Clear Water Collection Bowl	50	1.98	Fits all Twist&Drain water separating filters	P569758

Type	Description	Comments	Part Number
Valve with Sensors	Twist&Drain valve* 1/2" - 20 UNF Threaded Sensor Port	Threaded Sensor Port	P550865
	Twist&Drain Valve with Passive Water-in-Fuel Sensor* Packard Terminal	Electrical Connection	P570618
	Twist&Drain Valve with Passive Water-in-Fuel Sensor* Deutsch Terminal	Electrical Connection	P570619

*Connects to existing engine management system only

WHY CHOOSE DONALDSON?

PERFORMANCE
First-fit choice of leading equipment manufacturers around the world.

INNOVATION
Continuous development of new technologies to meet changing filtration needs.

RELIABILITY
Comprehensive warranty covering our filters and your equipment.

QUALITY
The foundational principle driving the design, manufacture and delivery of every product.

SUPPORT
Knowledgeable technical support specialists available in-field when you need them.

AVAILABILITY
Innovative, reliable distribution partners providing local support.

Donaldson
FILTRATION SOLUTIONS

Donaldson Australasia Pty Ltd
PO Box 153, Wyong NSW 2259

Freecall: 1800 345 837
Ph: +61 2 4350 2000
Fax: +61 2 4351 2036

Donaldson New Zealand
PO Box 14-770, Panmure 1741 Auckland

Ph: +64 9 579 2790
Fax: +64 9 579 0322

www.donaldson.com

Brochure No. F113047 Fuel Filtration Guide ENG (05/19)