



Donaldson®
FILTRATION SOLUTIONS



HEAVY DUTY 4WD FILTER KITS

Protect your investment with heavy-duty 4WD filters from the diesel engine filtration experts.

DIESEL ENGINE FILTRATION EXPERTS

FILTER SERVICING MADE EASY

Donaldson invented the first air filter in 1915 and is one of the largest and most trusted heavy-duty filter manufacturers in the world. With over 100 years of manufacturing and innovation, you can be sure that you are buying the best in filtration.

Quality, reliable filtration is an essential component of maintaining sophisticated, modern diesel engines.

Over the past decade, numerous emissions standards and engineering achievements have come together to create advanced, clean and flexible engines. These diesel engines operate under high pressures and require an increasingly higher degree of filtration.

Whereas most 4WD filter brands have been developed by automotive filter specialists, Donaldson is an industry leader in heavy-duty filtration for off-road diesel engines. Durable, rugged and built to last, Donaldson replacement filters are manufactured to the same quality standards as the original and provide premium quality, durability and the highest level of protection for your 4WD.

With Donaldson's 4WD Filter Kits and Fuel & Oil Twin Packs, your engine will operate with better protection between filter replacements and save you on costly downtime and repairs. Effective and efficient filtration is the best preventative maintenance for 4WD's.



PERFORMANCE
FULL FLOW - HIGH EFFICIENCY - LONG LIFE



QUALITY
HEAVY-DUTY AND BUILT TO LAST



RELIABILITY
MEETS OR EXCEEDS OEM SPECIFICATIONS



Donaldson's popular range of 4WD Filter Kits contain the necessary air, oil and fuel filters for a full service in one handy kit.

THINK FILTERS. THINK DONALDSON

NEW Donaldson's Fuel & Oil Twin Pack contains two sets of oil and fuel filters to perform two liquid filter services. Use one set now and keep the second set protected in the box, ready for your next service.



WE'VE GOT YOU COVERED!
Donaldson's range of 4WD Filter Kits and Fuel & Oil Twin packs suit most popular heavy-duty diesel powered 4WD's including:

- ▶ Ford
- ▶ Holden
- ▶ Isuzu
- ▶ Mazda
- ▶ Mitsubishi
- ▶ Nissan
- ▶ Toyota

SUPERIOR TECHNOLOGY

SUPERIOR PERFORMANCE



AIR

Donaldson is the trusted name in heavy-duty air filtration. Our range of high quality air filters has been designed specifically to protect your investment in the harshest environments. Donaldson filter media technology and robust filter construction provides the protection your diesel engine needs.



- 1 FILTER MEDIA** Designed to capture and hold harmful contaminant while allowing maximum air flow. Donaldson filter media meets or exceeds OEM specifications.
- 2 END CAPS** Robust construction provides structural integrity.
- 3 HEAVY-DUTY LINERS** Corrosion resistant, maximises air flow and protects the filter media from damage.
- 4 PLEATING** Donaldson Pleatloc™ technology ensures uniform pleat spacing to maximise dirt holding capacity and provides longer filter service life.
- 5 BEADING** Stabilises the media and prevents pleat tip wear.
- 6 PLASTISOL** Precisely measured to ensure filter media is potted correctly and prevents any possible leaks for non-filtered air to pass through.



OIL

- 1 FILTER MEDIA** Full-Flow media packs allow for maximum flow while capturing harmful particles. Donaldson filter media meets or exceeds the OEM specifications.
- 2 HOUSINGS** Heavy-duty construction designed for maximum operating pressures. Robust construction will not vibrate loose and will resist fatigue.
- 3 THREAD** The tapered lead in thread makes installation easier with leak-free performance.
- 4 INNER TUBE** Designed to allow full oil flow with no sharp edges, protecting filter media from damage.
- 5 GASKETS & SEALS** Made from elastomer for superior life and performance.
- 6 SPRING** A high tension coil spring maintains the media pack in position ensuring inner seal integrity.



Donaldson oil filters are designed to keep fluids clean by capturing contaminants and abrasive particles. Unfiltered liquids may result in premature wear of expensive engine components.



SUPERIOR RELIABILITY

QUALITY GUARANTEED



FUEL



- 1 FILTER MEDIA** Designed to capture harmful contaminants and repel water to protect today's sensitive injection systems. Donaldson filter media meets or exceeds OEM specifications.
- 2 EFFICIENCY** Media packs are designed to allow full-flow under high operating pressures while providing the cleanest fuel possible.
- 3 HOUSINGS** Heavy-duty housings for strength and vibration-proof durability.
- 4 SEALS AND O-RINGS** Heat and chemical resistant to prevent leaks or unfiltered fuel bypass.
- 5 COMPATIBILITY** Factory-fit design suits the application and allows for existing factory sensors to be used where applicable.

Dirt and water are enemies of High Pressure Common Rail fuel systems and can dramatically reduce service life and lead to vehicle downtime and costly repairs. Donaldson fuel filters provide clean, filtered fuel which ultimately helps prevent pump wear, injector clogging, premature engine wear and maintains fuel efficiency.



New High Pressure Common Rail (HPCR) systems operate with injection pressures of up to 50 times that of older style unit injectors. This allows the fuel to be injected with precise metering and timing, delivering power increases, reduced fuel consumption and fewer harmful emissions. As a result of these much higher pressures, HPCR engines are intolerant of both dirt and water in their fuel supply.

Fuel system manufacturers are insistent that damage caused by fuel contaminants is not a factory defect and in many cases is not warrantable.



The use of a Donaldson filter to replace the factory fitted filter will not void your warranty provided it meets the same specifications as the original, and is replaced in accordance with the vehicle manufacturers recommended service interval. Donaldson's replacement filters meet or exceed the original filter specifications.

When you buy Donaldson, you can be certain that you are buying the best. Our aftermarket warranty provides cover for 1 year from installation, or for the normal service interval period as stated in the equipment manufacturers service manual (whichever occurs first).

When you buy Donaldson, you buy quality – Guaranteed!

VEHICLE LISTING

4WD KIT	TWIN PACK	MAKE	MODEL	ENGINE	YEAR	AIR FILTER	OIL FILTER	FUEL FILTER
X902855	X900039	Ford	Ranger PJ, PK	2.5L, 3.0L Turbo Diesel	12/06 - 06/12	P902609	P550335	P550385
X900058	X900059	Ford	Ranger PX	P4AT 2.2L, P5AT 3.2L #	09/11 onwards	P506075	P506088	P506093
X902857	X900036	Holden	Rodeo RA	3.0L Turbo Diesel 4JJ1	01/07 - 06/08	P506007	P506008	P506009
X902857	X900036	Holden	Colorado RC	3.0L Turbo Diesel 4JJ1	06/08 - 05/12	P506007	P506008	P506009
X900050	X900031	Holden	Colorado RG	2.5L Turbo Diesel #	06/12 onwards	P506074	P506087	P506089, P506089
X900050	X900031	Holden	Colorado RG	2.8L Turbo Diesel DURAMAX 2 #	06/12 onwards	P506074	P506087	P506089, P506089
X902857	X900036	Isuzu	D-Max	3.0L Turbo Diesel 4JJ1	06/08 - 05/12	P506007	P506008	P506009
X900051	X900032	Isuzu	D-Max	3.0L Turbo Diesel 4JJ1 TC #	07/12 onwards	P903455	P506082	P505973
X900051	X900032	Isuzu	MU-X	3.0L Turbo Diesel 4JJ1 TC #	07/12 onwards	P903455	P506082	P505973
X902855	X900039	Mazda	BT50 WL-AT, WE-AT	2.5L, 3.0L Turbo Diesel	12/06 - 06/12	P902609	P550335	P550385
X900058	X900059	Mazda	BT50 UP0Y	P4AT 2.2L, P5AT 3.2L #	09/11 onwards	P506075	P506088	P506093
X900048	X900033	Mitsubishi	Challenger PB	2.5L Turbo Diesel 4D56 Common Rail	07/08 - 12/14	P506010	P551343	P506011
X902854	X900038	Mitsubishi	Pajero NM	2.8L Turbo Diesel 4M40	05/00 - 07/02	P505999	P502008	P550385
X902854	X900038	Mitsubishi	Pajero NP	3.2L Turbo Diesel 4M41	11/02 - 02/06	P505999	P502008	P550385
X902854	X900038	Mitsubishi	Pajero NS, NT, NW	3.2L Turbo Diesel 4M41	10/06 onwards	P505999	P502008	P550385
X902858	X900035	Mitsubishi	Triton ML	3.2L Turbo Diesel 4M41 Common Rail	07/06 - 06/09	P506010	P502008	P506011
X900048	X900033	Mitsubishi	Triton ML, MN	2.5L Turbo Diesel 4D56 Common Rail	07/08 - 12/14	P506010	P551343	P506011
X900061	X900062	Mitsubishi	Triton MQ	2.5L Turbo Diesel 4D56 Common Rail	01/15 onwards	P506010	P551343	P506093
X902853	X900040	Nissan	Navara D22	3.0L Turbo Diesel ZD30DDT	12/01 - 10/05	P505998	P505978	P551351
X903285	X900034	Nissan	Navara D40 (Vin:MNT...)	2.5L Turbo Diesel YD25DDTi	06/06 onwards	P506065	P550939	P551351
X902758	X900041	Nissan	Patrol GQ, RX	4.2L Diesel TD42	11/87 - 12/97	DBA5162 • P505192	P557780, P557780	P551351
X902760	X900040	Nissan	Patrol GU	3.0L Turbo Diesel ZD30DDTI	04/00 - 03/07	DBA5160 •	P505978	P551351
X902765	X900041	Nissan	Patrol GU	4.2L Diesel TD42	12/97 - 2003	P505192	P557780, P557780	P551351
X902856	X900037	Nissan	Patrol GU	4.2L Turbo Diesel TD42T	05/99 - 01/07	DBA5160 •	P557780, P502068	P551351
X902759	X900041	Nissan	Patrol GU II, III, IV	4.2L Turbo Diesel TD42T	01/00 - 02/07	DBA5160 •	P557780, P557780	P551351

VEHICLE LISTING

4WD KIT	TWIN PACK	MAKE	MODEL	ENGINE	YEAR	AIR FILTER	OIL FILTER	FUEL FILTER
X902717	X900046	Toyota	Hilux	2.4L 2L Diesel	1984 - 1988	DBA5141 •	P550008	P550385
X902717	X900046	Toyota	Hilux	2.2L L Diesel	1985 - 1988	DBA5141 •	P550008	P550385
X902717	X900046	Toyota	Hilux	2.8L 3L Diesel	1988 - 1997	DBA5141 •	P550008	P550385
X902716	X900047	Toyota	Hilux KUN16, KUN26	3.0L 1KD FTV Common Rail #	04/05 - 2015	P902609	P550335	P505973
	X900044	Toyota	Hilux KZN165	3.0L Turbo Diesel 1KZ-TE	12/99 - 04/05	DBA5161	P550413	P550385
	X900046	Toyota	Hilux LN147, LN167, LN172	3.0L 5L Diesel	09/97 - 2000	DBA5161*	P550008	P550385
X902721	X900043	Toyota	Hilux LN147 S2, LN167 S2, LN172 S2	3.0L 5LE Diesel	09/00 - 2005	DBA5161 •	P550413	P505952
X902718	X900045	Toyota	Landcruiser 70 Series	4.2L Diesel 1HD-FTE HDJ79	2001 - 2007	DBA5110 •	P550413	P550385, P551339
X902718	X900045	Toyota	Landcruiser 70 Series	4.2L Diesel 1HZ	01/90 - 10/02	DBA5110 •	P550413	P550385, P551339
X902750	X900042	Toyota	Landcruiser 70 Series	4.5L V8 Turbo Diesel 1VD-FTV Common Rail	03/07 onwards	P505983	P505988	P506036
X902859	X900044	Toyota	Landcruiser 80 Series	4.2L Turbo/Non Turbo Diesel 1HZ	01/90 - 02/98	DBA5110 •	P550413	P550385
X902859	X900044	Toyota	Landcruiser 80 Series	4.2L Turbo/Non Turbo Diesel 1HD-T & 1HD-FT	11/01 - 02/07	DBA5110 •	P550413	P550385
X902720	X900043	Toyota	Landcruiser 100 Series	4.2L Turbo Diesel 1HD-FTE	10/00 - 10/07	DBA5166 •	P550413	P505952
X902719	X900044	Toyota	Landcruiser 105 Series	4.2L Diesel 1HZ	03/98 - 10/02	DBA5140 •	P550413	P550385
X903083	X900042	Toyota	Landcruiser 200 Series	4.5L V8 Turbo Diesel 1VD-FTV Common Rail #	11/07 onwards	P506035	P505988	P506036
X902764	X900043	Toyota	Landcruiser Prado KZJ120R	3.0L Turbo Diesel 1KZ-TE	11/03 - 10/06	P505979	P550413	P505952
X902763	X900039	Toyota	Landcruiser Prado KDJ120, 1KDJ150	3.0L Turbo Diesel 1KD-FTV Common Rail #	11/06 - 07/15	P505983	P550335	P550385
X902763	X900039	Toyota	Landcruiser Prado GDJ150R	2.8L Turbo Diesel 1GD-FTV Common Rail #	08/15 onwards	P505983	P550335	P550385
	X900043	Toyota	Landcruiser Prado KZJ95R	3.0L Turbo Diesel 1KZ-TE	03/00 - 02/03	DBA5140	P550413	P505952
	X900044	Toyota	Landcruiser Prado KZJ120R	3.0L Turbo Diesel 1KZ-TE	02/04 - 10/06	P505979	P550413	P550385



- This air filter has been upgraded to Donaldson Blue™
- * Available only for LN147 Thai manufactured vehicles
- # Cabin air filter available. Search your vehicle at donaldson4wd.com.au

Can't find your vehicle? Visit our website to view complete filter listings for over 300 applications: www.donaldson4wd.com.au

ADDED PROTECTION FOR HPCR ENGINES

Contaminated fuel can lead to vehicle downtime and costly repairs, especially to expensive common rail systems and components. Modern engines are increasingly requiring better fuel filtration technology to ensure delivery of the cleanest fuel to your vehicle's fuel system.

Donaldson's range of Diesel Fuel Filter Kits provide additional protection for your vehicle, providing cleaner fuel, keeping you up and running and out of the workshop.

- Ideal for many 4WD applications
- Includes bonus filter element - keep a spare in the vehicle
- Supports fuel flow range up to 114lph or 379lph



11µm DIESEL FUEL FILTER KIT

Part No.	Maximum Working Pressure	Flow Rate	Efficiency
P902976	100 psi / 690 kPa / 6.8 Bar	114 lph	$\beta_{11} = 100$ (99% @ 11 micron)

3µm HIGH EFFICIENCY DIESEL FUEL FILTER KIT

Part No.	Maximum Working Pressure	Flow Rate	Efficiency
P903316	100 psi / 690 kPa / 6.8 Bar	114 lph	$\beta_3 = 100$ (99% @ 3 micron)

3µm CHASSIS MOUNT DIESEL FUEL FILTER KIT

Part No.	Maximum Working Pressure	Flow Rate	Efficiency
P903074	100 psi / 690 kPa / 6.8 Bar	379 lph	$\beta_3 = 100$ (99% @ 3 micron)



EXPERT SERVICE TIPS

CLEANLINESS IS CRITICAL

A small amount of contamination can severely damage your engine.

REPLACING AIR FILTERS

- 1 Try to remove the bulk of any dirt and dust from the air cleaner before removing the filter. Remove the old filter gently, being careful not to drop dirt into the clean air intake.
- 2 Fit the new air filter as soon as possible. Do not leave the clean air intake exposed for any length of time.
- 3 Never reuse or clean an air filter. Use a new one every time. Cleaning them risks damaging them and their ability to hold dirt is reduced every time they are cleaned.
- 4 Unless the filter has become heavily loaded with dust, or is blocked, do not replace the air filter more often than recommended by the vehicle manufacturer. Air filters become more efficient as they load with dust, so let them do their job.

REPLACING LIQUID FILTERS

- 1 Wipe the old filter including the surrounding area to clear any loose debris and grime before starting.
- 2 After removing the old filter, ensure seals and gaskets have also been removed.
- 3 Make sure all filter surfaces and the filter housing or head assembly are clean.
- 4 Lubricate the thread and all gaskets and seals before installing the new filter. The fluid the filter is designed for is ideal to use as the lubricant. Do not use grease.
- 5 Screw the filter on until the main seal just makes contact with the filter head. Then tighten by hand only, using the recommended number of turns shown on the filter.
- 6 Do not over tighten filters. If the filter is hard to fit, check the filter has not cross threaded, or the thread is not damaged.
- 7 Do not use a tool to tighten filters, as this could damage the filter resulting in a failure.
- 8 For cartridge style filters, refer to the service manual for correct tensioning instructions.

FREQUENTLY ASKED QUESTIONS

Q Where should I install additional filtration?

We recommend that additional filtration should be considered as the primary filter and installed before the factory filter, which should be retained as originally fitted. It can be fitted in any location that offers easy access to view the water collection bowl and to change the filter. There are a number of advantages in adding additional filtration before the factory filter. Most modern vehicles employ a return loop fuel system, where fuel is delivered to the factory fitted filter. The engine draws what it requires and the rest is returned to the tank. By installing additional filtration before the factory filter, all the fuel in the tank is being continually filtered. Leaving the fuel system from the factory filter to the engine unaltered, minimises any effect on sensitive engine management systems. This also ensures the fuel reaching the factory fitted filter is as clean as the vehicle manufacturer specifies.

Q Do I need to add additional filtration?

If you operate your vehicle in remote locations, or anywhere that the quality of the available fuel is uncertain, the use of additional fuel filtration is a great way to prevent fuel related issues.

Q What else do I need to install additional filtration?

Some vehicles can benefit from an additional in-line fuel pump to help boost the fuel flow. Use a good quality pump for reliable and long life.

Q Are there any points to consider when installing an additional filter?

The additional filter needs to be capable of delivering an adequate fuel flow rate for your engine. Ensure there are no tight bends in fuel lines and do not position them too close to hot exhaust components. All fuel hose connections need to be fuel and air tight. It is good practice to use a fuel-proof thread sealant on hose fittings where they screw into the filter head assembly. Many fuel systems operate in vacuum. A leak may result in air being drawn into fuel lines causing engine misses or making it hard to start.

Q For additional filtration, should I fit a larger sized micron filter first, then a finer micron filter second?

This is called 'stepped filtration'. With the volume of fuel that an in-vehicle filter handles, the large particles captured by a fine filter have little impact on the volume of fine particles it can also hold. By contrast, the extra pressure drop, or reduced fuel flow from too many filters can be detrimental to engine performance.

Q Is it true that the lower the particle size and the higher the efficiency the better the filter?

Correct, however there are other factors to consider. As a general rule, when the micron size decreases and the efficiency increases, the flow rate of a filter may decrease. Don't fit a finer filter without making sure there is sufficient fuel flow for your vehicle under full load. A filter with a smaller micron rating will collect more contamination but needs to have enough dirt holding capacity to make it between services.

Q Can I use a smaller micron oil filter?

Vehicle engine manufacturers carefully select the specifications of the oil filter used, accounting for factors including micron rating, dirt holding capacity, flow rate, pressures loss, operating pressure, service life and more. Changing to a finer micron filter needs to consider all these. A finer micron filter may have a reduce flow rate, particularly during cold engine starts when the oil is cold and very thick.

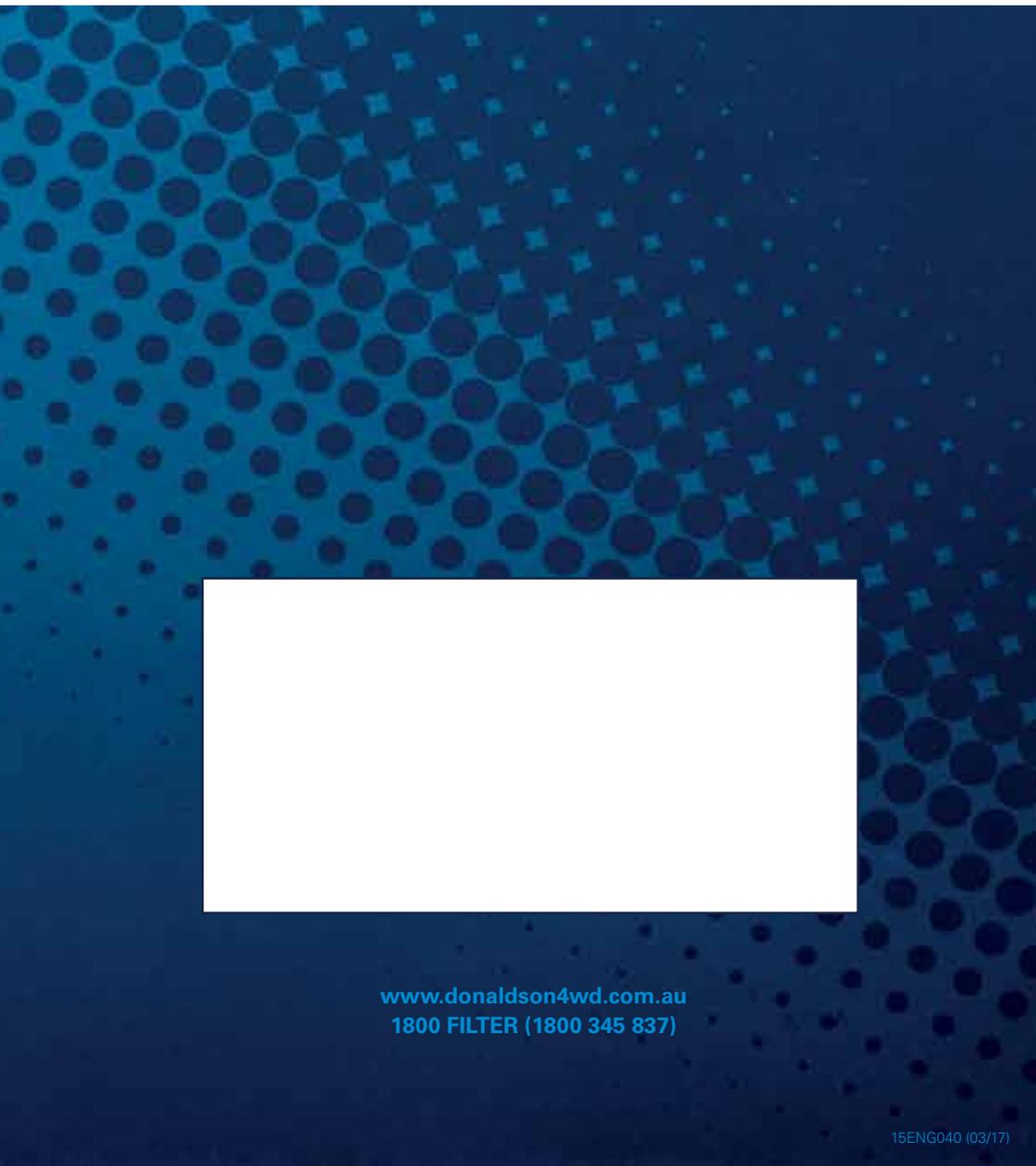
The filter may have an anti-drain back valve or an internal relief valve. If it does, what is its pressure setting? Too low and it will open prematurely, or stay open all the time, passing unfiltered oil. Too high may not offer the required flow at cold start and could result in premature engine failure. You may also void your warranty if the filter does not meet all original filter specifications.

Q What is the efficiency of my filter?

Filter efficiency is often stated as a percentage or Beta ratio. A filter rated at 5 micron at 99%, also called 5 micron beta 100, removes at least 99% of all particles 5 micron and larger. A filter rated at 5 micron at 50% or 5 micron beta 2 (sometimes called "nominal") removes only 50%, or half the particles 5 micron size and bigger. To compare filters, you must know the micron rating **and** efficiency. Many manufacturer's don't quote the efficiency at all, or will quote a low efficiency rating. For example, Donaldson's P550588 diesel fuel filter has an efficiency of 99% at 11 micron and also a 50% efficiency at 2 micron. We prefer to use 99% efficiency as that gives a better picture of the filters performance.

ASK US!

If you have a technical question regarding filtration and would like some more information, please submit an enquiry and one of our filtration experts will get back to you - www.donaldson4wd.com.au



www.donaldson4wd.com.au
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