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'IT'S HERE' – WORLD'S FIRST BOXER DIESEL PASSENGER CAR

LEGACY SALOON, SPORTS TOURER AND OUTBACK

- Legacy Saloon, Sports Tourer and Outback – world's first Boxer Diesel passenger car
- Exceptional smoothness, refinement, lightness, rigidity and throttle response
- Low centre-of-gravity coupled with all-wheel drive provides superb handling and stability
- Two-litre horizontally-opposed engine develops 150 PS and 258 lb ft torque
- Class-leading fuel economy and low emissions
- Over 50 mpg Combined for Saloon with 148 g/km CO2
- 129 mph top speed and 0-60 mph in 8.3 seconds for Saloon
- Moving sound levels of 70.5 dB (A) lower than Rolls-Royce Phantom's 72.0 dB (A)
- Outstanding standard equipment includes: Symmetrical all-wheel drive, Vehicle Dynamics Control System (VDC), electrically-folding heated door mirrors, front projector fog-lamps, CD player with MP3 facility, dual-zone climate control with rear outlets, cruise control and 17" Alloy wheels
- Standard active front head-restraints, dual-stage front airbags, head and chest-protecting side airbags, curtain airbags and ABS with EBD
- Range starts at €32,995 (Lm14,164.75) for Legacy 2.0TD Saloon
- On sale April '08

It's here. The world's first boxer diesel engined-passenger car has arrived, offering outstanding refinement, throttle response and fuel economy coupled with ultra-low emissions and exceptional handling thanks to the light weight and low centre-of-gravity of its horizontally-opposed powerplant.

On sale from April 2008, the Subaru Legacy Saloon, Sports Tourer and Outback crossover are priced from just €32,995 (Lm14,164.75) for the Legacy 2.0TD R Saloon.

This is Subaru's first diesel engine – developed in-house using over 40 years' expertise in 'boxer' engine technology coupled with turbocharging know-how gleaned from the fierce World Rally Championship arena. The Japanese manufacturer's Boxer Diesel engine will initially only be fitted to European-market cars, with the yet-to-be introduced new Forester receiving the engine in September and new Impreza three months later.

Class-Leading Figures

The 150 PS Boxer Diesel Legacy and Outback not only have the best fuel efficiency in the 4WD passenger car class but beat all main 2.0 litre two-wheel drive rivals including the new Ford Mondeo TD and VW Passat – both in lower-powered 140 PS formats. The Legacy Saloon 2.0TD R, for example, returns 50.4 mpg on the Combined Cycle with 148 g/km of CO2. Its 2WD Ford Mondeo equivalent returns 47.9 mpg with 156 g/km, while the VW Passat 2.0 TDI gives 48.7 mpg and 153 g/km. Comparing the new Legacy Sports Tourer with the 4WD version of the Passat – called the 2.0 TDI 4Motion – shows the Subaru to be 8.7 mpg better on the Combined Cycle with emissions down by 31 g/km compared to the VW.

Nor are these figures achieved at the expense of performance. The Legacy Saloon has a 129 mph (208 k/mh) top speed and 0-60 mph time of 8.3 seconds, The Legacy Sports Tourer has a 126 mph (203 k/mh) top speed and 0-60 mph time of 8.5 seconds while the Outback is only slightly behind at 124 mph (200 k/mh) and 8.8 seconds for the 0-60 mph dash.

Refinement is also a Boxer Diesel strongpoint, with official moving sound levels of 70.5 dB (A) compared to the Mondeo's 71.0 and Passat's 73 dB (A). Even a Rolls-Royce Phantom is higher at 72.0 dB (A).

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Thoroughly-Developed Package

The new Boxer Diesel Legacy and Outback are thoroughly-developed models in their own right with several unique features to suit their diesel application. For example, the engine has liquid mounts, with the body benefiting from extra sound-proofing to enhance refinement, while the five-speed manual gearbox has higher ratios to suit the diesel's stronger torque and lower engine speed. The power-steering is now electric to improve fuel economy and carefully tuned for strong feel and response. Front spring rates have also been tuned to suit both the diesel engine and new steering system. The Boxer Diesel's front brakes have also been uprated and the gear-lever length reduced by 10 mm for a sportier, shorter throw. Even the air-conditioning unit has been modified to provide hot air earlier in the engine's warm-up cycle, diesel engines having different characteristics to petrol powerplants.

Visual changes include new cloth seat trim for Legacy and Outback R models and a discreet bonnet air intake scoop.

Boxer Diesel Secrets Explained

- Exceptionally compact, light and strong
- Low friction 'Boxer' balance cancels out vibration
- Flat four's low centre-of-gravity boosts handling agility
- Punchy throttle response
- Common-rail fuel-injection for greater efficiency
- Solenoid injectors for compactness
- Variable-vane turbocharger mounted under engine for low centre-of-gravity
- Highly efficient, fast-warm catalytic converter also mounted under engine

Dedicated to the horizontally-opposed 'boxer' engine layout for over 40 years, Subaru engineers were determined to use this format for their first diesel engine. The reasons were to create a light, compact, strong unit with reduced vibration, noise and internal friction compared to an in-line engine and for an ultra-low centre-of gravity. This enhances handling agility and roadholding – especially when combined with Subaru's renowned symmetrical all-wheel drive system. In fact, the entire engine and transmission are not only mounted very low down but also within the wheelbase which further boosts chassis dynamics.

Cancelled Out Vibration

The 2.0 litre Boxer Diesel has a class-leading light weight with the horizontally-opposed pistons effectively cancelling out the secondary harmonic vibration (vibration with twice the frequencies of the engine speed). The crankshaft is short and highly rigid, minimising the vibrational noise of many diesel engines. And the superior balance of the horizontally-opposed engine means internal rotational inertia and friction are drastically reduced compared with an in-line engine. Reduced internal friction means throttle response is exceptionally lively and in keeping with Subaru's sporty heritage. Compared to Subaru's 2.0 litre engine fitted to the Impreza, Legacy and Forester, the 2.0 litre Boxer Diesel has a 11 mm longer stroke and 6 mm smaller bore for a capacity of 1,998 cc versus 1,994 cc.

Even More Compact

Thanks to a bore pitch shortened from 113 mm to 98.4 mm, the overall engine block length is only 353.5 mm compared to the petrol's already compact 414.8 mm. The block is of a rigid semi-closed deck design, while all five main bearings in the alloy cylinder block use metal composite supports for added strength and durability. It also enhances refinement, providing a similar thermal expansion to that of the crankshaft.

Extra water-cooling slits have been added between the cylinder bores and the high-strength pistons are squirted with oil to enhance cooling. The large ends of the connecting rods feature an asymmetrical profile for assembly precision and reduced friction.

The high-strength crankshaft has a special surface treatment to withstand the diesel engine's high combustion pressures while the uprated cylinder heads have roller rocker arms. In addition, the cam-drive is via a chain system that better handles the variations in torque of a diesel engine.

Advanced Fuel-Injection And Turbocharger

The new Boxer Diesel uses an advanced common-rail fuel-injection system with the fuel being pressurised at 180 MPa before being fed into the common rail. This maximises efficiency, both in terms of power, fuel consumption and emissions. Special, short-length solenoid injectors ensure the engine's width is no greater than that of the 2.0 litre 'boxer' petrol unit, despite the diesel's longer piston stroke. The variable nozzle turbocharger ensures the correct boost throughout the engine's rev-range and its low centre-of gravity position under the engine and close to the catalytic converters increases environmental performance.

The Boxer Diesel meets Euro4 emission standards thanks to oxidation catalytic converters, a particulate filter and exhaust gas recirculation. It is the most environmentally-friendly vehicle in the AWD passenger car class.

Class-Challenging Performance

The new Boxer Diesel provides class-challenging performance thanks to 150 PS at an ultra-low 3,600 rpm and a massive 258 lb ft torque at an accessible 1,800 rpm. With a 'square' bore and stroke of 86 mm and 16.3:1 compression ratio, the world's first Boxer Diesel provides effortless performance throughout a wide speed range, avoiding the breathless response of some diesels at high revs.

Top speed for the Legacy 2.0TD R Saloon is 129 mph with a 0-60 mph time of 8.3 seconds, for the Legacy 2.0TD R Sports Tourer is 126 mph with a 0-60 mph time of 8.5 seconds, while the Outback 2.0TD R is only slightly behind at 124 mph and 8.8 seconds. Fuel economy is outstanding at 40.4/58.9 and 50.4 mpg for the Legacy Saloon, 39.8/56.5 and 49.6 mpg for the Legacy Sports Tourer R and 39.8/55.4 and 48.7 mpg for the Outback R. Their CO2 emission figures are no less impressive at 148, 151 and 153 g/km respectively.

Legacy And Outback In General

Only last year the Legacy and Outback received an extensive but subtle facelift, premium-class interior and retuned suspension. Aimed unashamedly at the leading premium European marques, the Legacy and Outback boast outstanding all-wheel drive chassis dynamics, high equipment levels and spacious interiors with prices substantially undercutting their rivals.

For example, the range starts at €32,995 for the Legacy 2.0TD R manual Saloon. It boasts high equipment levels such as dual-zone climate-control, cruise control, front, side and curtain airbags, a leather steering wheel, 215/45 tyres on 17x7 ins alloy wheels. Other standard equipment includes dual-zone climate control with rear outlets, cruise control and 17" Alloy wheels, electrically-folding heated door mirrors, a CD player with MP3 facility, front projector fog-lamps, Subaru Vehicle Dynamics Control and – of course – symmetrical all-wheel drive.

Sportier, Distinctive Design

For the '07 Model Year, all Legacy and Outbacks were given a sporty, distinctive new look aimed at further enhancing their road presence. Meanwhile, interiors were further refined for a prestige look and feel. For example, the grille on the Legacy now has a chrome wing-like motif, while the front wings were restyled and feature a crease-line which flows from the top of the 'hawk-eye' HID headlamps.

The crossover, higher-riding Outback has its own front grille with a chunky, lattice-effect look. It also has twin raised flutes to its bonnet and neatly integrated side protection cladding. At the rear, the Legacy Sports Tourer has three-dimensional rear lamps with a chrome strip linking each lamp to give an impression of width. Changes unique to the new 2.0TD Boxer Diesel models include a discreet bonnet air intake.

Meanwhile, ultra-low Cd figures of 0.30 for the Sports Tourer and 0.34 for the Outback prove the worth of aerodynamic detailing such as special engine undercovers, spoilers and wheel flaps.

Prestige Interior

The latest Legacy and Outback's prestige interior features aluminium-effect strips running the full width of the fascia, flowing out 'wing-like' from the centre panel. This accentuates the width but also cocoons the driver. Soft-touch trim is extensively used and standard features include electrically-adjustable driver seat with two-set memory function. The new Boxer Diesel models also have new cloth trim for the R versions while the RE and REn feature leather as standard. The leather-covered steering wheel is smooth instead of dimpled making it more pleasant to hold, while all models now feature reach as well as rake-adjustment. The cruise-control is neatly integrated into the steering wheel.

The standard climate-control is not only dual-zone allowing different temperatures for either side but there are also rear-seat outlets.

Recognising their appeal to country-dwellers and those with an active lifestyle, Outback models have a reversible cargo floor allowing the choice between carpeted luxury or a hard waterproof floor.

Supreme Customer Care

Owning a Subaru Legacy or Outback is like being a member of an exclusive club thanks to our trade experience and 'down to earth' approachable attitude.

The warranty itself is one of the best in the industry, offering a three year cover plus three years' paintwork and 12 years' anti-corrosion cover. Like Legacy 2.0 and 2.5 litre petrol models plus the petrol-powered Outback 2.5, service intervals for the new Boxer Diesel are 10,000 miles. For more information and a test drive please visit the SUBARU showroom in Mosta road, Lija, call on 21418111 or log on to www.subaru.com.mt.

'08 Legacy And Outback (Boxer Diesel): Performance And Economy

Legacy Saloon

	Top Speed	0-60 mph	Urban	Extra Urban	Combined
2.0TD R	129 mph	8.3 sec	40.4	58.9	50.4 mpg

CO2 emissions: 148 g/km

Legacy Sports Tourer

	Top Speed	0-60 mph	Urban	Extra Urban	Combined
2.0TD R	126 mph	8.5 sec	39.8	56.5	49.6 mpg
2.0TD RE/REn	126 mph	8.5 sec	39.2	55.4	48.7 mpg

CO2 emissions: 151 g/km (R) or 154 g/km (RE/REn)

Outback

	Top Speed	0-60 mph	Urban	Extra Urban	Combined
2.0TD R	124 mph	8.8 sec	39.8	55.4	48.7 mpg
2.0TD RE/REn	124 mph	8.8 sec	39.2	54.3	47.9 mpg

CO2 emissions: 153 g/km (R) or 156 g/km (RE/REn)

Legacy Saloon

Rear

Legacy Sports Tourer

Outback