

DEVELOPMENT

# Fiat 500

With Fiat's future a little more certain, the OEM has been able to invest in a car that is a serious contender in the small, premium car market. By **James Griffiths**

Fiat's Grande Punto turned out to be a massive success, but as it was launched you could almost hear Fiat holding its breath. Since then, the on-again carmaker has reduced its debt from 10 billion to just over 1 billion and CEO Sergio Marchionne has said the company is aiming for a trading profit of 5 billion and to overtake Japanese rivals to be the best manufacturer in terms of quality by 2010.

The new 500 will be essential in achieving these aims. Small cars have always been Fiat's forte and the old 500 is considered an icon of the brand. The affection felt for it will partly account for the 25,000 pre-orders out of the total 50,000 cars planned for this year. But nostalgia alone will not be enough to make it a success. Fiat has invested in the quality of the 500 to make it safe and affordable, yet appealing to a wider and more premium market.

The 500 will be manufactured in Tychy, Poland, home of the Panda. It is Fiat's best and most efficient plant. Total capacity for the 500 is 120,000, but this could be expanded. Fiat plans to produce up to 60,000 of the 500s by 2008 and expects to sell about half of them in Italy. The rest will go abroad although they are not type-approved for the US.

Three engines will be available at launch, including two petrol units – a 1.2-litre eight-valve unit that develops 51kW (69hp) and a 1.4-litre 16v developing 75kW (100hp) – and a 1.3l 16v turbodiesel developing 56kW (75hp).

Fiat says the 500 will be its first car to satisfy the

Left and above: The 500 is the most customisable Fiat ever, with more than 500,000 permutations. Right: early design sketches



Euro V emissions requirements from 2009. A turbocharged version of the 1.4 gasoline engine will be introduced later, and there are tentative plans for a two-cylinder engine in the future, according to powertrain chief Alfredo Alavilla.

"The turbo Abarth version of the 500 will be at the Tokyo motor show as a concept car this year and as a production car next year," says Alavilla. "The two-cylinder engine is under development. We have not decided if it will be packaged on the 500. It will be launched before mid-2009 on a number of A segment Fiats and probably B segment too. There is a high likelihood it will be on the 500, but this will not be its first application."

There are no new suppliers contributing to the 500, but Fiat engineering chief Harald Wester says trying to spread the appeal of the 500 as widely as possible has thrown up some manufacturing challenges.

"It is the most customisable Fiat we've ever produced," says Wester. "Some of the customisation items are very complex and can't be handled by the dealers. To get the stickers applied to the right standard, it had to be introduced into the factory."



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Fiat is counting on the 500 to be a success and is looking to expansion, especially as in 2008 Ford will begin production of its new Ka at the Tychy plant, built on the same platform as the Panda and the 500.

The need to accommodate other cars on the same floor pan was partly why the 500 will have its engine mounted in the front, not the rear, as with its predecessor. It will also help with the safety rating, which Fiat is hoping will lead its class. A specifically designed front end improves compatibility with larger vehicles during impacts. Seven airbags are standard on all but the basic model.

Although Fiat says the introduction of the Ka will not affect production of the 500, there is talk of building a second plant. "With the Panda, 500 and the Ford, we'll produce half a million units from one plant," says Wester. "To expand production further, it would be wise to invest in a second production facility for a car produced on this architecture." No location was named, but Fiat CEO Luca De Meo says it would be "strategic" to have a plant in Brazil.

Sharing the plant and platform means break-even is well inside the projected volume of 120,000 cars. It is cheaper to produce than BMW's Mini remake and sells for less – between 10,500 and 15,000. It is not clear what the 500's direct contribution will be to Fiat's profit target of 5 billion by 2010, but it's an important step in the company's development.

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Clockwise from left: The 500 marks a "new start" says Fiat. Plucky interior and exterior styling will help the brand's perceived quality – important to the firm's plans to build more than 120,000 units a year; safety features should help too: the 500 has seven air bags

SUPPLIERS TO THE FIAT 500

Bosch	Brake systems with front caliper, rear drum; gasoline and diesel injection system, radio
ContiTech	Motor management diaphragms
Delphi	Electric power steering, EEC distribution system, body computer module, RF key USB port
Eisenwerk Brühl	Cylinder blocks
Ergon	Fuel tank
Ernstbrügger	Cylinder head gaskets
Emil Tychy	Door panels, front and rear bumpers, D-pillars
Federal Mogul	Engine bearings, ignition coils, gaskets, anti-abrasion sleeves, brake pads, wiper blades
Gebla	Extension front frame to join it with bumper
Gilbert	Locks and customisable keys
GKN	Steerhalls
Goodyear	Tires
HellemannTyton	Dashboard harness fittings
Hutchinson	Fuel, water and air hoses; vacuum pipes
INA	Parts for wave lash adjustment and chain drive for diesel
Johnson Controls	Door modules
Kloppersmidt	Pumps, EEC system, solenoid valves, throttle body bearings
Knorr	Steering column module
Kostal	Dual mass flywheel, clutch discs and diaphragm for 1.4-litre gasoline
LuK	Oil and water pump, hood cables, side door latches, window regulators
Magna International	Pistons and rings, valve guides, valve seal inserts
Mahle	Aluminum cylinder head for 1.3 diesel
Mazucchoni	Body side moulding and roof trim
Meccaplast	Battery terminals, distribution cap and connectors
MTA	Front stabiliser bar
Mubea	Front stabiliser bar
Fahrer erksysteme	All glazing
Pfafflinger Automotive	Control knob
Scapa	Technical adhesive tapes
Supert Parts	Oil pressure sensor
Wahler	Engine thermostats

More supplier info at: [www.ae-plus.com](http://www.ae-plus.com)

Technical Adhesive Tapes: Scapa

# Scapa on Automotive Engineer Website: supplier to new Fiat 500 - August 2007

| Home | About us | Journals | Events | Societies | Books | Media Kit

Key Topics

## Vehicle Design Highlights

<< BACK TO HOME

Brakes, Steering, Suspension

The Fiat 500

August 2007

Car Companies

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Commercial Vehicles

Design/Bodywork

Drivetrain

Electronics

Emissions

Fuel Cells

Hybrids

Interiors

Lighting

Manufacturing

Materials

Powertrain

Rapid Prototyping

Safety

Software

Supply Chain

Telematics

Vehicle Design Highlights

By James Griffiths

Who supplies the 500? [Click here...](#)

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### Who supplies the Fiat 500?

Bosch	Brake systems with front caliper, rear drum; gasoline and diesel injection system, radio
Bridgestone	Tyres (14 inch)
ContiTech	Motor management diaphragms
Delphi	Electric power steering, E/E distribution system, body computer module, RF key, USB port
Eisenwerk Brühl	Cylinder blocks
Ergom	Fuel tank
ElringKlinger	Cylinder head gaskets
Emix Tychy	Door panels, front bumpers, rear bumpers, D-pillars
Federal Mogul	Engine bearings, ignition coils, gaskets, anti-abrasion sleeves, brake pads, wiper blades
Freudenberg DS	Seals
Gedia	Extension front frame to join front frame with bumper
Giobert	Locks and customisable keys
GKN	Sideshafts
Goodyear	Tyres
HellermannTyton	Dashboard harness fixings
Hutchinson	Fuel, water and air hoses; vacuum pipes
INA	Parts for valve lash adjustment and chain drive for diesel
Johnson Controls	Door modules
Kolbenschmidt Pierburg	Pumps, EGR system, solenoid valves, throttle body, bearings
Kostal	Steering column module
LuK	Dual mass flywheel, clutch discs and diaphragm for 1.4-litre gasoline
Magna International	Oil and water pump, hood cables, side door latches, window regulators
Magneti Marelli	Lighting systems, engine control, telematics, instrument cluster, suspension and exhaust. Also future automated manual gearbox
Mahle	Pistons, piston rings, valve guides, valve seat inserts
Mazuccconi	Aluminium cylinder head for 1.3 diesel
Mecaplast	Body side moulding and roof trim

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MTA	Battery terminals, distribution cap and connectors
Mubea Fahrwerksfedern	Front stabiliser bar
Pilkington Automotive	All glazing
Rieter	Parcel shelf
Scapa	Technical adhesive tapes
Sogefi Filters	Oil filter modules
TRW	Dual airbags and steering wheel, side airbag, curtain airbag, seat belt systems, steering box, steering lock, door locking system (keys and barrels), interior trim for roof opening switches, gasoline pipeline protection flaps, fasteners, gasoline pump inspection cover, brake servo unit & calipers
Wahler	Engine thermostats

