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FORD PUMA COUPE

Ford relights the fire

The new Puma is the first Ford for years to unashamedly focus on driver appeal. The cute £15,000 coupe promises to be a rare treat to drive, says Steve Cropley



- ★ New Fiesta-based sports coupe
- ★ Price circa £15,000, one model
- ★ Aimed squarely at keen drivers
- ★ SVE-developed chassis, steering
- ★ New 123bhp 1.7-litre engine
- ★ Made in Cologne, UK sales 5000
- ★ Top speed 126mph, 0-60mph 8.8sec
- ★ Safety, security at Fiesta levels
- ★ Low maintenance, low insurance
- ★ UK sales start late July

Ford is bouncing back into the performance car business. This week it unveils the £15,000 Puma, a snappy-looking Fiesta-based three-door coupe which hits the market this summer. The Puma introduces a new, 120bhp 1.7-litre version of the Zetec-SE line-up, and comes complete with 130mph top speed and GTi-league acceleration.

But for keen drivers, **straight-line** speed is just part of the Puma's performance story. The new coupe is Ford's first true "chassis" car for years. Since the Mondeo in 1993, the company has repeatedly demonstrated its ability to make cars that handle, steer and ride beautifully, but has been restricted to making cars that suit everyman.

The Puma is different. According to Richard Parry-Jones, architect of Ford's move to better dynamics in recent years, it is "Ford's focus on the special needs of the enthusiast driver". P-J claims the Puma has been "developed specifically for the rewarding driving experience". Small wonder, then, that it takes as its basis the much-praised chassis and suspension of the Fiesta supermini and hones them further for a sports car application.

Although we won't be able to confirm it until we drive the car in a couple of months' time, the Puma's sporting intent seems destined to make the biggest difference between it and existing small coupes in the £14,000 to £17,000 range, such as the Vauxhall Tigra and Renault Megane, which drive very much like their saloon parents.

Ford will build Pumas in its Cologne Fiesta plant. Projected British sales in the first full year are around 5000 units, a couple of thousand fewer than Vauxhall's Tigra managed in its first year, but ahead of the Tigra now. That points to Europe-wide Puma volume of 30,000 to 40,000 cars and underscores the fact that, for Ford, this is a low-volume product.

DESIGN

The Puma is the first new Ford out of the box since the Ka brought the term "new edge design" into our language. The Puma's basic shape is softer and more rounded than the Ka's, but its radical headlight and tail light shapes, plus its lower body mouldings front and rear, raise the "funk factor" quite high. Most early commentators think it cute, but not instantly beautiful. Positive aspects are that it looks like the most modern thing on the road, it's clearly a ♦





Radical nose treatment is reminiscent of the Ka



Wheels wider than Fiesta's for four-square stance

Ford and it shares no panels with a saloon. The Puma is 6in longer than the Fiesta, the extension mainly in the rear overhang. The designers have moved the cowl forward, too, and the changes allow the Puma its sweeping roofline, while providing a reasonable head room for rear passengers. The Puma is around 50kg heavier than a 1.6-spec Fiesta, reflecting the effects of its slightly heavier engine, extra body length, bigger wheels and tyres and enhanced body

Cabin will be familiar to Fiesta drivers, but seats are more sporting. Just one trim level, with options



rigidity, which is a vital factor in the Puma's higher-plane handling, according to the engineers. Cross-wind stability and anti-lift characteristics have played a bigger part in the design of the Puma's aerodynamics than mere "slipperiness". The drag coefficient of 0.34 is good, but not outstanding.

Inside, the Puma is reminiscent of the Fiesta, although the new roofline gives a new, snug aspect to the cabin. The front buckets are Fiesta-related, which is good, but firmer and better bolstered at the sides. Rear passengers (two, not three) will fit, but they're even more occasional than in the Fiesta. The fascia is faced with aluminium to give a sporty character. There's aluminium on the doors, too, and the knob atop the slicker-shifting gear lever is a satisfyingly large machined lump of the same stuff.

The Puma has just the convenience gadgets a quick coupe needs: electric windows, remote central locking and a classy hi-fi (which can be upgraded to two higher levels). In normal Fiesta style, a high-grade security system and a driver's airbag are standard. You pay extra for a passenger's airbag and the "affordable" air conditioning system.

ENGINE, TRANSMISSION

The new 1.7-litre engine shares the qualities of the smaller Zetec-SE engines: compact size and efficiency. Like them, it has four valves per cylinder, operated by twin belt-driven overhead camshafts, and is fed by electronic multi-point fuel injection, linked to Ford's own EEC-V engine management.

According to Ford's engine men, the big benefits of a 16-valve system occur close to wide-open throttle. To move them downwards into the realm of everyday driving, they have given Puma a new variable camshaft timing (VCT) system on the inlet side, which varies the inlet valves' phasing (though not their lift or opening duration) according to engine



Aluminium trim brings sporting flavour to cabin

speed and load. The effect is to enhance the low-end torque of what is fundamentally a high-revving, high-power engine.

Unlike other variable systems, Ford's VCT adjusts the inlet cam timing continuously, according to an electronic map, rather than merely changing from one setting to another as crankshaft speed passes a particular point. The success of the system is not immediately apparent from the output figures: the Zetec-SE 1.7 delivers 123bhp at 6400rpm, and its peak torque of 116lb ft, though healthy, is

delivered fairly high up the rev range at 4500rpm. But Ford says the engine delivers 85 per cent of its peak torque all the way from 1500rpm to the red line at 6750rpm.

Another interesting property of the engine is that the cylinder bores have a nickel-silicon plating which reduces friction and is highly resistant to wear. The alloy pistons have low-friction coatings, too. The crankshaft and conrods are of forged steel, to cope with the greater internal stresses, and there's a high-capacity oil pump because the VCT mechanism is operated by oil pressure and needs a greater flow.

The Puma's throttle mechanism has a shorter travel and quicker response than the Fiesta's, and the engineers have tuned the induction system to give a discreet but sporty sound. Ford's own figures indicate that the Puma will go well: 0-60mph in a claimed 8.8sec and a top speed of 126mph. Fuel consumption, excellent in the smaller Zetec-SEs, also looks promising. Ford claims 38.2mpg for the Puma on the new European drive cycle – a good performance.

The Puma's standard five-speed manual gearbox has closer ratios than the Fiesta's.

As well as the short-throw gearchange, the cross-gate spring-loading has been reduced to make the shift action slicker. Clutch travel has been reduced, too.

CHASSIS, SUSPENSION

On paper, the Puma has the Fiesta's MacPherson strut front suspension and a twist beam axle at the rear. But "every ♦

How Puma stacks up against Tigra

There's no doubt that the success of Vauxhall's Corsa-based Tigra helped spur Ford into producing a racier Fiesta, and now the Puma's shape and specification are known, it is clear that the Blue Oval has produced a product with many similarities to the Tigra.

Both cars have striking styling. The Puma looks the more modern, though an *Autocar* office straw poll concludes that it isn't as instantly attractive as the Vauxhall was when new. The £14,500 Tigra 1.6 is pitched a little cheaper than the £15,000 projected for the Puma, but the power difference between the cars – 104bhp against 125bhp – should more than compensate. Interestingly, both cars claim the same 126mph top speed, but the marginally heavier Ford is a second faster to 60mph.

The cars are similar in size. The Tigra is a couple of inches shorter, but a surprising 5in wider.

The biggest difference between the Puma and Tigra is likely to be in the area of chassis performance. We criticised the Tigra's creators for creating a great car, but doing little with the chassis. Ford seems unlikely to make the same mistake.



Tigra: less power but (arguably) better looking

From sketch to design freeze in 135 days

The first Ford designed entirely on computer, the Puma began taking shape in late 1993, when Ford management called for proposals that would employ Fiesta underpinnings to produce a stylish sports coupe. Many of the design team, led by chief designer Chris Clements, were already heavily occupied with the Ka project, but over one weekend a flurry of activity produced about 50 freehand Puma proposals, which were rapidly refined down to a handful of "themes". Within a week, six of these themes were worked up into full-size illustrations, using Ford's "paintbox" computers. They were then shown to management, who agreed that the project would continue entirely on computer. Two of the ideas, the "red" and the "blue", were chosen for further work, and things proceeded rapidly until the "red" concept was chosen and signed off a few weeks later.

Only then was the winning concept milled to a three-dimensional clay model. By mid-March 1994, the finished car was ready for management approval. The whole thing, from behind sketch to approved full-size three-dimensional shape, took just 135 days.



Porter, quick-throw gear lever has alloy knob

"single component" was re-evaluated by Ford's Special Vehicle Engineering team for its sportier role. The Puma starts with a more rigid body shell than the Fiesta, and builds from there. It gets a completely new set of springs, dampers and anti-roll bars, plus bigger wheels and tyres which widen its tracks, and changes to the valving of its standard power steering for firmer centre feel and more feedback. In every case, the intention has been to change the chassis' bias from mainstream to sporty. Front roll stiffness

increases by 19 per cent (over the already taut Fiesta 1.4 Si). This results from an increase of five per cent in spring rates and a 1mm increase in the thickness of the front anti-roll bar. The rear suspension's twist beam is 30 per cent stiffer, and the system's coil spring rates are six per cent higher, giving an overall increase in rear roll stiffness of 21 per cent. The dampers are uprated, of course, but Ford is careful to point out that while body control is better, the dampers are still tuned to cope capably with the high-frequency surface bumps which cause harshness.

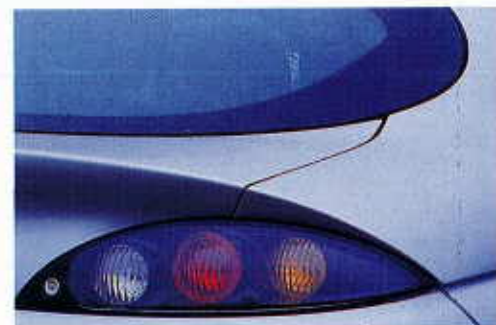
The Puma's eye-grabbing wheels and tyres aid handling as well as styling. They are big – 195/50s on 6x15in alloy wheels – and push the wheels "right out to the corners" for styling effect, while enhancing stability. Compared with the Fiesta 1.4, the Puma's tracks are 19mm wider up front and 36mm wider at

the rear. Ford says the fact that the Puma has only one wheel/tyre combination (though several different original equipment tyres) has allowed unusually thorough suspension tuning.

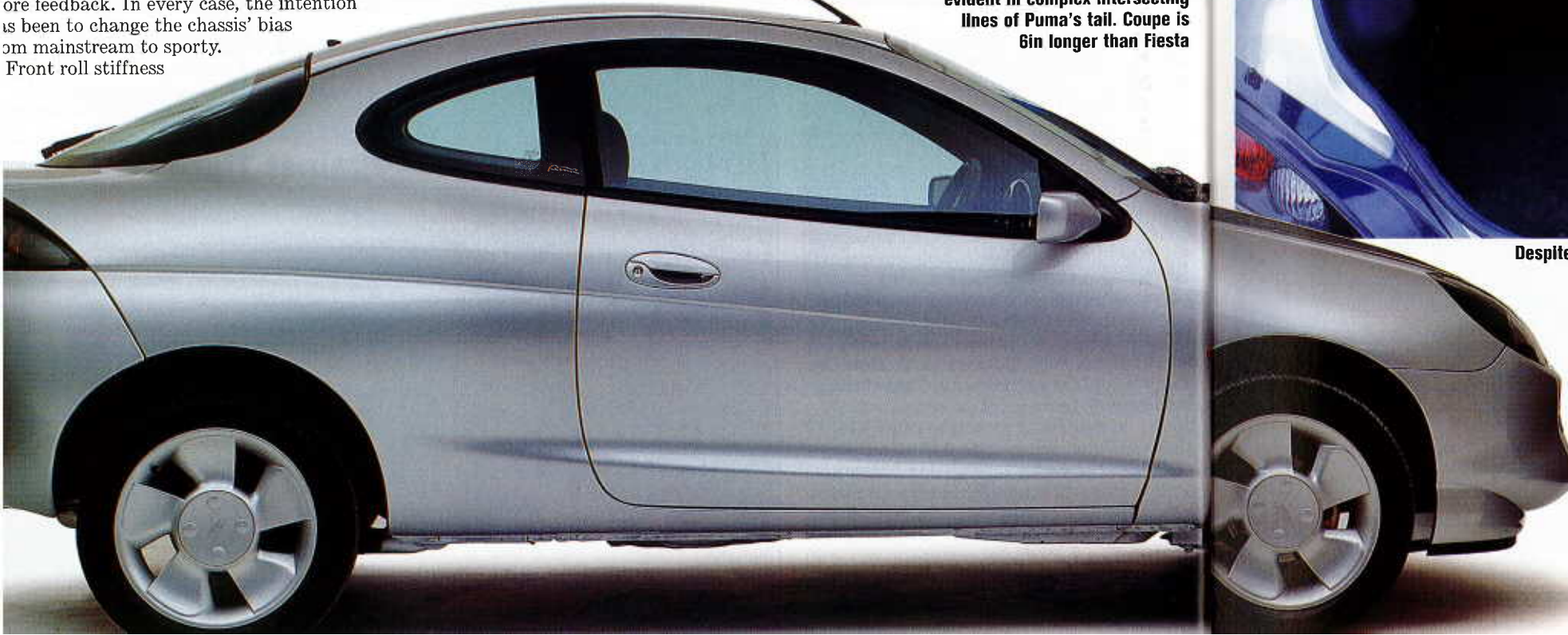
The steering is closely based on the Fiesta's servo-assisted rack and pinion system, with 2.9 turns lock to lock. The power-assist pump has been retuned from constant flow to falling flow, so that assistance declines with speed, and gives the wheel a more positive feel.

Brakes are discs at the front and drums behind, with the latest four-channel anti-locking. The front brakes are thicker than the Fiesta 1.4's and there's an electronic brake effort distribution system, essentially to guard against rear-wheel lock-up under hard braking. Early on, the Puma development team decided on a larger master cylinder, with a differently tuned power booster, to improve brake response. It worked so well that all Fiestas now have it.

On the face of it, the Puma looks a promising product, more of a driver's car than existing £15,000 coupes. We'd like to get a little more used to the styling before we can be unequivocal about it, but Ford's new coupe is a thoroughly modern, cheeky-looking creation, and its chassis team have the best credentials in the business. Roll on the day when we settle behind the wheel, start the engine, snick into gear and go. ☺



Ford's "new edge design" again evident in complex intersecting lines of Puma's tail. Coupe is 6in longer than Fiesta



New 1.7-litre Zetec-SE has continuously variable timing on inlet valves, enhancing low-rev torque



Despite its dramatic styling, Puma has a generous-sized boot



Space for two in rear seats – but not too often



Fiesta suspension, steering and brakes uprated



Puma promises less roll and better responses

FACTFILE

FORD PUMA 1.7

HOW MUCH?

Estimated price £15,000 On sale summer 1997

HOW FAST?

0-60mph 8.8sec Top speed 126mph

HOW THIRSTY?

Urban 29.1mpg Extra urban 46.3mpg Combined 38.2mpg

HOW BIG?

Length 3984mm Width 1674mm Height 1344mm
Wheelbase 2446mm Weight 1039kg Fuel tank 42 litres

ENGINE

Layout 4 cylinders in line, 1679cc
Max power 123bhp at 6300rpm
Max torque 116lb ft at 4500rpm
Specific output 73bhp per litre
Power to weight ratio 118bhp per tonne
Installation transverse, front, front-wheel drive
Made of aluminium alloy head and block
Bore/stroke 80/83.5mm
Compression ratio n/a
Valve gear 4 per cyl, dohc, variable camshaft timing
Ignition and fuel electronic ignition and multi-point fuel injection, Ford EEC-V engine management

GEARBOX

Type 5-speed manual
Ratios/mph per 1000rpm
1st 3.15/5.6 2nd 1.93/9.1 3rd 1.41/12.5 4th 1.11/15.9
5th 0.88/20.0 Final drive ratio 3.82

SUSPENSION

Front MacPherson struts, coil springs, anti-roll bar
Rear semi-independent twist beam, struts, coil springs

STEERING

Type rack and pinion, power assisted Lock to lock 2.4 turns

BRAKES

Front 240mm ventilated discs Rear drums
Anti-lock standard

WHEELS AND TYRES

Size 6x15in Made of alloy Tyres 195/50 VR15

All manufacturer's figures