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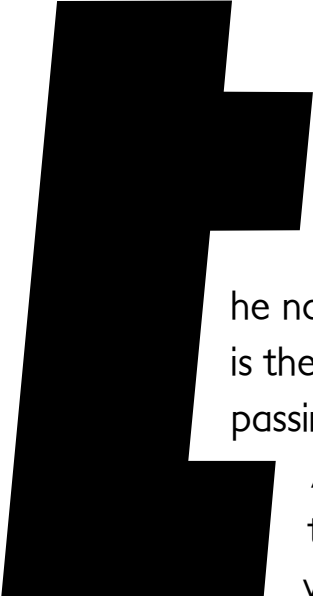
EVGA

Ignore the mild body alterations, the revised 997 packs a new double-clutch transmission and a completely new direct injection motor. This is the biggest facelift the 911 has ever received



Carrera

S GO 1134



he nomenclature of the Porsche 911 is the subject that separates the passing enthusiast from the obsessive.

Accordingly, I will hazard a guess that anyone reading this prefers, when referring to the world's most

famous sports car, to use the internal designations used by the factory for the past thirty years. Hence, a 1995 911 is, naturally, a 993. Its predecessor was the 964, its successor was the 996 and the current car is a 997. The utterance 'nine eleven' somehow signifies non-expertise.

Even though it may look very similar to the outgoing model, there is enough evidence to suggest that this latest development deserves to be known as a 998 by those-in-the-know. But sadly for all us Porsche-number-fetishists, despite its new-tech content, this car is still a 997. Even though it has an entirely new engine using direct injection and houses Porsche's single most important step in transmission technology since the

New rear lights feature LEDs. White cabriolet not the ideal DR spec....

company was founded 60 years ago; a 7-speed double clutch 'box called PDK (Porsche Doppel Kopplung).

There are good reasons for keeping the 997 designation, though. The body-in-white is identical to the outgoing model and the majority of part numbers begin '997'- which is the real reason behind the internal naming strategy in the first place. With one notable exception: that new motor no longer bears the numbers 996 – as it did for last year's car - denoting its roots with the previous model. Instead it begins 9A1, signalling a paradigm change in type of engines Porsche will build in the future. And perhaps the manner in which they will be named. August Achleitner, boss of the entire 997 programme (excluding the GT3 and GT2) hinted that we shouldn't necessarily expect this car's successor to be called 998.

But enough of this geekery. I used the word 'facelift' to describe the work carried out on this car, and Herr

Achleitner went all thundery on me - 'We think this is the wrong word, this is a big change and we consider it a second generation 997.' He has a point - a far lighter hatchet was applied to the 996 back in 2001 than the one used here.

Ignoring the obvious and rather insignificant cosmetic tweaks for a second (new lights, new front bumper, partly revised interior), the most important change is the introduction of direct injection engines. All internal components are new, the block and cases have been redesigned and in some cases integrated together to reduce the number of engine components. Bore and stroke are new on both 3.6-litre and 3.8-litre versions and the oil system has been completely overhauled to avoid a repeat of the problems with the 996 and 997 engines.

Point of contention: no paddles, just two buttons that both control up and down shifts. Not ideal.

'The oil system has been completely overhauled'

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Accordingly, the gains in power, torque and efficiency and cleanliness are pretty remarkable. From 3614cc, the smaller motor now produces 345bhp at 6500rpm and 287lb ft of torque at 4400rpm. That's only 15bhp down on an old S and, given that when fitted with the PDK transmission it nips into emissions band F with just 225g/km, the baby Carrera might just enjoy a resurgence in popularity over the next

few years. I mean, isn't 0-62mph in 4.7sec and 179mph (with PDK) enough performance for everyday use?

The 3.8-litre S (exactly 3800cc) enjoys a greater power gain - a full 35bhp jump to 385bhp - which is the same as a mk 2 996 GT3. Torque is up to 310lb ft, but interestingly the 3.6-litre enjoys a larger percentage torque increase this time around.

For anyone interested in the

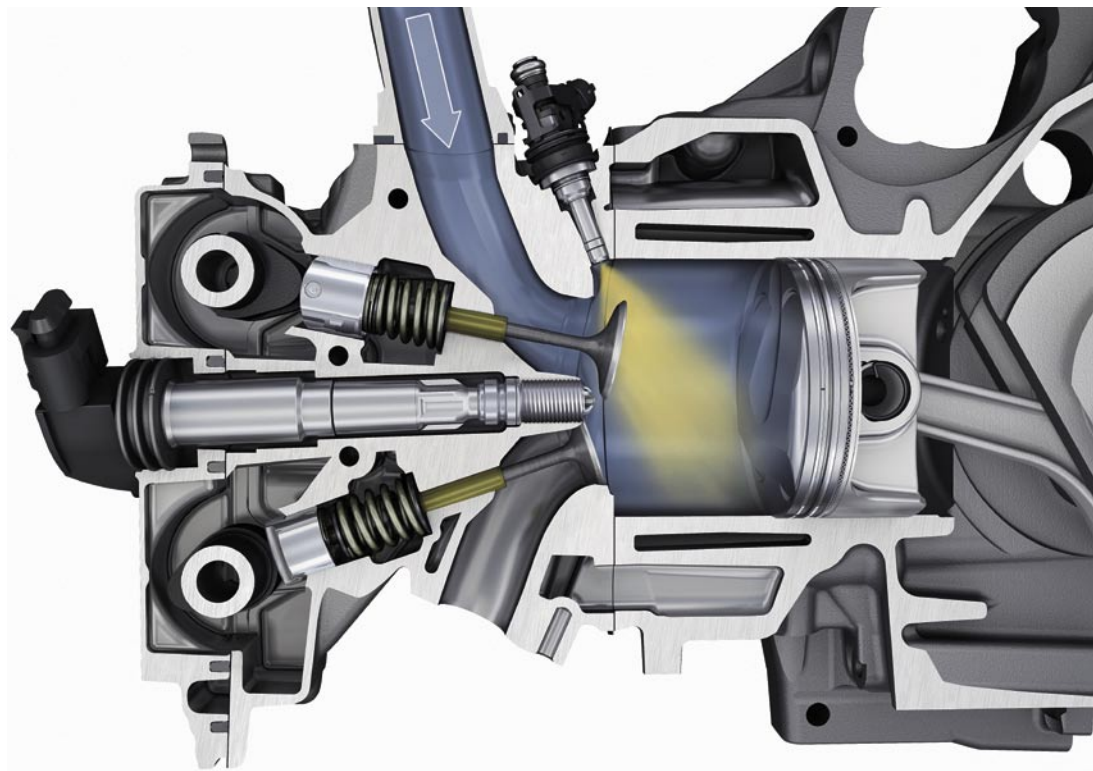
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AFBAG

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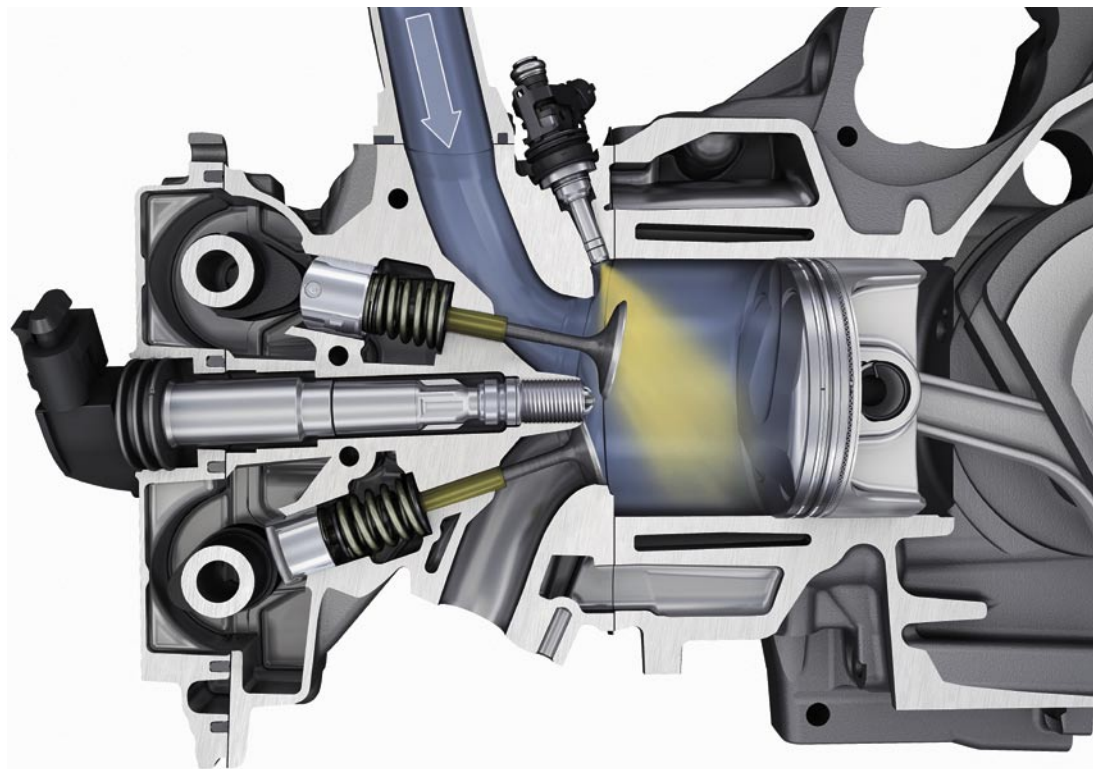
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'This engine is now stronger than the GT3-based unit'

911 variants for the last 10 years. He says the base elements of this new unit are now the stronger of the two. Throughout the launch he was unwilling to be drawn on the future of the older engine – although he did concede that direct injection could be fitted to it - but given that he thinks it is now possible to pull more power from this new Carrera engine, we might have finally seen the end of the block that first ran in the GT1

race car.

He was also willing to discuss the RMS (rear main seal) which has affected a number of air-cooled Porsche engines. In an interview in the tech magazine, he gave two reasons for his choice of a new oil pump that would increase rates of lubrication and cooling. It's borderline NASA territory. We want the full description

g to comment on
oil seal situation)
countless water-
lines (see the brief
video). There are
confidence. First,
delivers varying
according to load.
stuff and if you
tion, have a look at

Porsche's official documentation here. In summary, it provides the stability of lubrication of a dry sump system under extreme loads and, because it is adjustable, greater fuel economy because it doesn't have to work as hard when cruising in a straight line. Porsche claims the pump alone accounts for an extra 3bhp and a two percent reduction in fuel consumption. Second, and rather less exotically, the actual seal

is new and much stronger.

Just look at the video embedded in this feature to see how harsh the test procedures have been. The engineers built a rig to replicate any load the engine might be subjected to – the above sequence is actually the Hatzenbach, the first twisty section of the Nordschleife. Looks pretty brutal, doesn't it? Anyway, if there are RMS issues with this engine, you now know

'The gearbox
controls are
counter-intuitive to
anyone who has
driven a racing car'









Standard alloys fairly non-descript, Cup tyres (nearest in shot) an option

who to post your letter of complaint to – Herr Wassabach is adamant that this engine is bomb-proof.

For full details of the internal changes take a look at page 15 of the pdf, but here's a summary of the improvements over the old motor. It uses 40 percent less parts, the structure is 22-percent stiffer – which is pretty amazing - and the rotary masses are down seven percent. Furthermore, the whole thing now weighs 5kg less and it is actually a little lower than before. Given this information, I'm struggling to see why the claimed kerbweight has actually gone up slightly.

The direct injection hardware isn't revolutionary, but its installation is very neat and the performance and economy gains it brings put the 997 way ahead of its competition in terms of efficiency and emissions. Fuel is injected directly into the cylinder at 120-bar – which is nothing by today's diesel engine standards, but it brings with it all the benefits you'd expect of a system that

allows gasoline to be atomised more accurately and squirted straight into the combustion chamber: More power, better economy and better throttle response - that last point could also be attributed to the increased compression ratio, up from 11.8:1 to 12.5:1.

The cutaway model of the new PDK gearbox on display at Weissach was one of the most impressive mechanical objects I've seen. But we shouldn't get too carried away, here. Even though Porsche can be credited with inventing the pre-selecting gearbox for racing use, Audi and VW have been using them for many years now and both Nissan and BMW managed to launch similar units before PDK was officially unveiled.

In its basic operation this is just like any other dual clutch 'box – a pair of wet clutches operate what are effectively two manual gearboxes. Again, for the full tech-orgy please have a look at the press release, but for now, this what you really need to know about PDK: It weighs 115kg, whereas

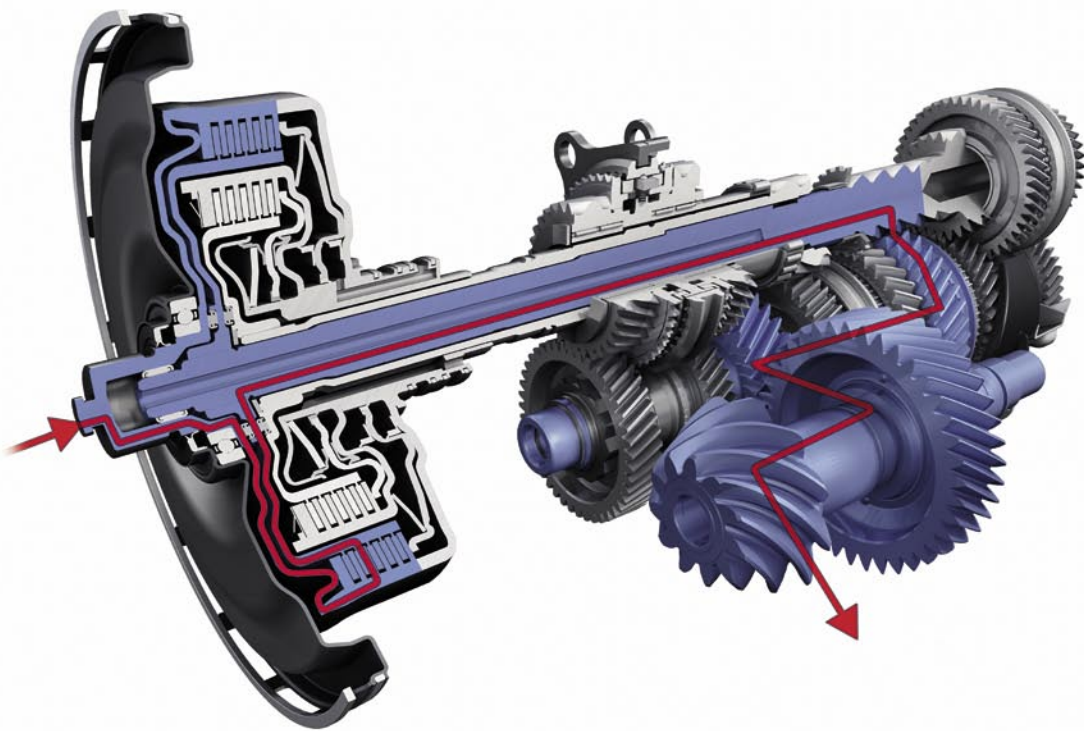
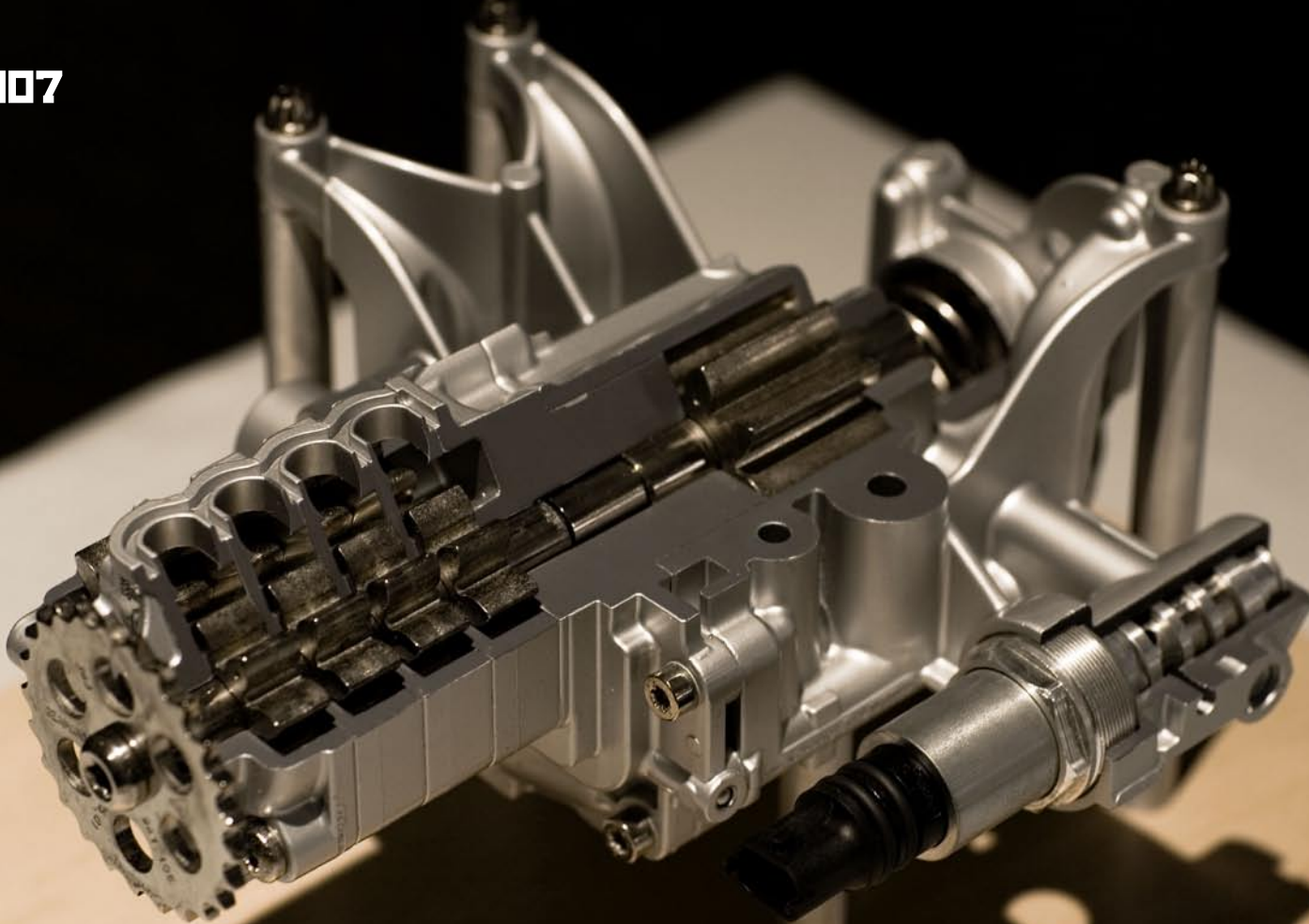
a 6 speed manual weighs 90kg. That's the fifth different weight I've been quoted, but it came from the bloke who developed the thing and looks at it like a father would a child. He also said, 'We are convinced that you cannot break this gearbox.' Which is pretty brave stuff, and he confirmed that the clutches are 'lifed' with the whole unit, but declined to define in any known units what that 'life' was.

To the driving then. It seemed only sensible to focus on the new engine and the new transmission, and once I'd been duffed-up by the newspaper boys, all that was left offering this mechanical combo was a white 3.6 litre convertible. So off we minced.

I'll start with the gearbox. Once again the appeal of the 911 has broadened, and PDK is the main reason for this. It is likely that no solution will ever be found for the driver who wants to feel gears en-mesh through his or her hand, but also enjoys the luxury of a computer carrying out such duties when they can't







Top shows
clever new oil
pump. Bottom is
cross section of
PDK box

be bothered. But PDK is
close as you could ever

In auto mode it is
the old Tiptronic, but
so because the old tip
auto was pretty crap
replicate the immaculate
smoothness of a full
very close, and in slo
very slick indeed.

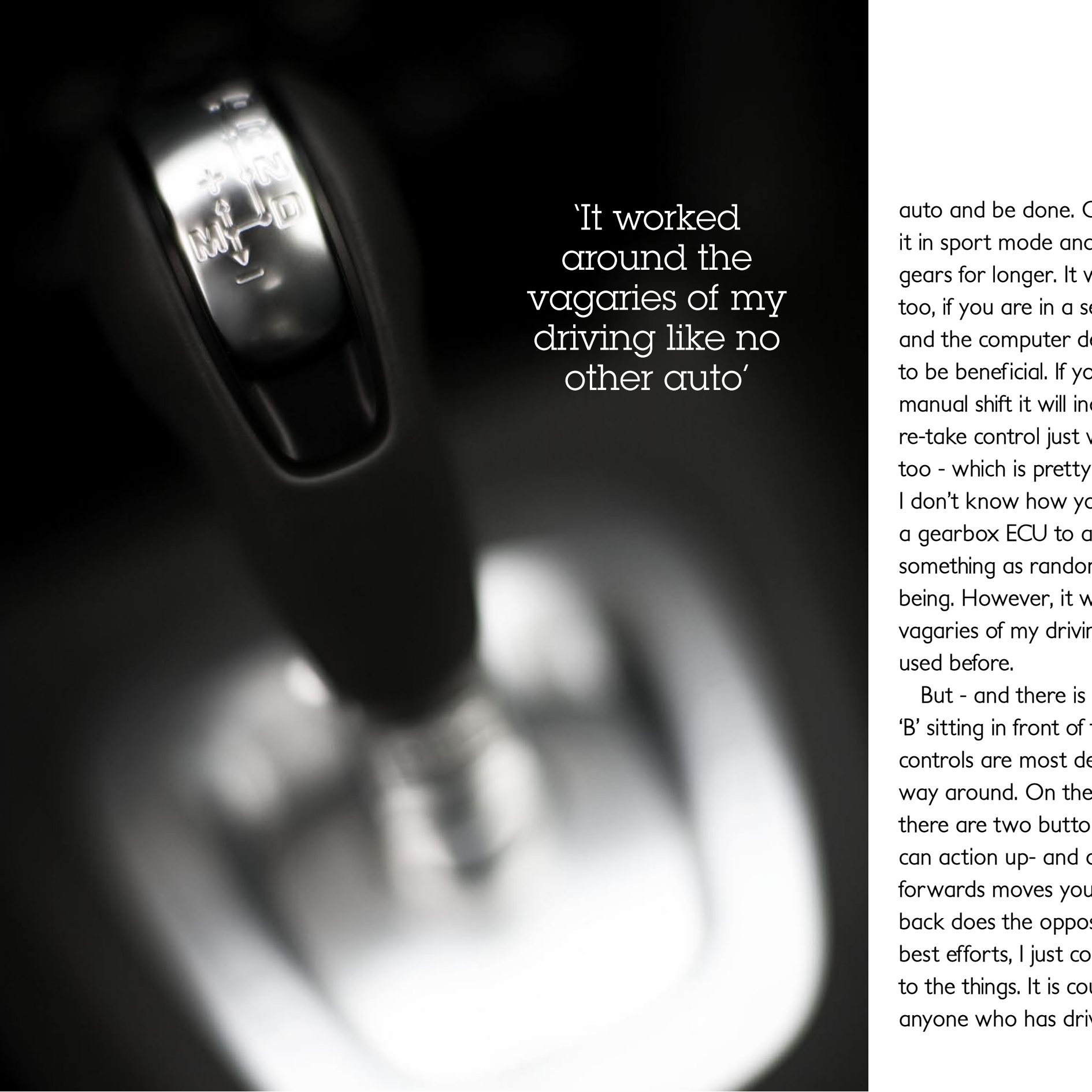
Kickdown is instan

PDK comes about as
ever wish.
vastly better than
t then you'd hope
torque-converter
ppy. It can't quite
ulate step-off
auto but it gets
ow manoeuvring it is
t, which it needs to

be because unless you're using decent
amounts of throttle and have the Sport
button engaged the new Carrera
spends most of its time in seventh gear.
This can be disconcerting, but where
the electronics really impress is in how
they differentiate between what throttle
input should equate to what level of
kickdown, and how many downchanges
it should make. You know how
frustrating it is to drive an auto that

drops two gears at the slightest brush
of the right pedal and, equally, how
irritating it is to find yourself kicking
holes in the front bulkhead to rouse a
more recalcitrant unit. It's very hard to
be specific here, but in a day's driving
it didn't once do something that I didn't
what it to do – and that is the best way
you can judge these things.

There are many different ways of
using PDK, too. You can leave it in



'It worked
around the
vagaries of my
driving like no
other auto'

auto and be done. C
it in sport mode and
gears for longer. It w
too, if you are in a se
and the computer de
to be beneficial. If yo
manual shift it will in
re-take control just v
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I don't know how yo
a gearbox ECU to a
something as random
being. However, it w
vagaries of my drivin
used before.

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'B' sitting in front of
controls are most de
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can action up- and o
forwards moves you
back does the oppos
best efforts, I just co
to the things. It is co
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Or you can have
it will hang on to
will do this in auto
sequence of turns
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you fancy the odd
indulge you and then
when you want it
amazing because
you can programme
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m as a human
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ng like no auto I've

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ven a racing car

(which I will concede is very few people), but it also goes against the prevailing convention and you have to wonder if Porsche might singe its fingers with this particular bout of stubbornness.

There are two official reasons for the way you operate PDK. Firstly, Porsche wanted the car to be instantly familiar to anyone who drove another automatic car in its range, which I suppose is just about understandable. The other explanation is harder to swallow. According to August Achleitner it goes back to the 1999 Paris Motor Show and the original Carrera GT concept. That car was going to run a sequential transmission and so a decision was needed on which way the lever should work – one was reached and it was apparently a certain Walter Rohrl who decided on the current orientation of a forwards push to change up. Baffling, I know.

There is one other issue with the 'box and that is its behaviour in Sport mode. Porsche was at pains to demonstrate

how it could use the kinetic energy stored in the transmission to provide a surge of added acceleration when the clutches were engaging and disengaging. But this explanation turned a little bit smelly when the word 'emotion' was mentioned. I have two issues with this 'boost' function in sport gearshifts. One: why spend all that time developing a virtually seamless shifting 'box and then have the whole thing upset by an electronically contrived lunge? Two: why tacitly admit it is in fact marketing folly by allowing the ECU to override this function in a corner when the risk of unsettling the rear axle could induce a bout of oversteer? Rather than dwell on this, I just drove it in non-sport mode, and it was far better.

If mechanical refinement was the measure by which all sports car engines were measured, then this would be the finest of its type in the world. The 3.6-litre motor is now so well isolated from the bodyshell you cannot feel its presence below 3000rpm, and even

beyond 7000rpm it is represented by noise and not feeling.

How you view the 911 – what you want to take from it - will dictate how you receive this information. I rather miss the fizzes and whirrs that used to trace through the car's structure, but I can't deny that this is a far better engine than the one it replaces. In fact it further supports a feeling I've had for some time – namely that the base

Carrera is all the car you'll ever need. When attached to the PDK 'box, this car will run well under 11sec to 100mph and hit the best part of 180mph – that is ample speed for me. It also offers fine fuel economy and the bonus of 225g/km of CO₂, which means it nips into the penultimate tax banding in the UK. Small beer I know, but still good to know that you have something so quick that also appeases the eco-factions.

Throttle response and even if the noise at engine speeds, once 5000rpm it comes on, wail is both familiar and intake noise is reduced in this model though, and yes that the direct injection is partly to blame.

Now isn't the time for chassis because the r



Tougher hood
retracts in
20sec. We'd still,
have a coupe
thanks

is pretty blinding
is muted at low
you work beyond
ver all 911 and the
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ed over the old
you'd have to say
ion process must be
e to discuss the
roof was missing

from the test car, but all joking aside,
the dynamic compromises involved in
choosing a canvass roof aren't anything
like as great as you'd expect. There
is no noticeable shake from the body
structure and even if you clatter into
mid-corner drainage covers the steering
rack refuses to quiver. The hood folds
in just twenty seconds and is now even
more hardwearing.

And that's about as much as I can

tell you from a brief drive in Germany.
The PDK controls would be perfect in
anti-reality, the boosted gearchanges
are a chore and the engine has suffered
a slight soul bypass. Otherwise the
car is faster, cleaner and has an even
broader appeal. We'll drive a coupe
very soon, and then run a group test to
see if anything can match its everyday
credentials. On first impressions, such
an outcome seems unlikely.

SPECIFICATION

PORSCHE 997 CARRERA

ENGINE

Six-cylinder, horizontally opposed

LOCATION

In-line, rear

DISPLACEMENT

3614cc

CYLINDER BLOCK

Aluminium alloy

CYLINDER HEAD

Aluminium alloy

FUEL & IGNITION

Direct injection, DME SDI 3.1

MAX POWER

345bhp @ 6500rpm

MAX TORQUE

287lb ft @ 4400rpm

TRANSMISSION

7-speed dual wet clutch (PDK)

FRONT SUSPENSION

MacPherson struts, springs, dampers

REAR SUSPENSION

Multi-link, springs, dampers

BRAKES

330mm drilled, ventilated discs

WHEELS

Alloy, 10.5 x 19in (front), 11 x 19in (rear)

TYRES

265/40 ZR19 (front), 295/30 ZR19 (rear)

WEIGHT

1500kg (coupe: 1415kg)

POWER-TO-WEIGHT

230bhp/ton

0-62 MPH

4.9sec (claimed)

MAX SPEED

178mph (claimed)

ON SALE

July 5th 2008

RATING





'It is cleaner, faster and has
an even broader appeal'

