

A history of Audi The 1970s

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The 1970s was a period of expansion and consolidation for Audi, with the need to update and renew its models imperative if it was to maintain its new-found sales momentum.

So in 1972 the Audi 60/72/80/Super 90 range of small saloons was replaced by the all-new 1972 Audi 80, whose crisp styling, novel front suspension design, high quality interior and modern engines were enough to earn it the prestigious European Car of the Year award. Four years later another new 100 arrived.

Between these two came the rather surprising introduction of the Audi 50, a supermini developed, like the 80, under the leadership of engineering director Ludwig Kraus. This car would also be launched as the near-identical Volkswagen Polo six months later, as always planned. This development meant Audi had provided parent company Volkswagen with the bones and more of two vitally important models that allowed Wolfsburg to finally wean itself off its dependence on the Beetle, which by the 1970s was sliding into decline.

More than this, the Golf, one of the most successful model lines the world has ever seen, also owed much to Audi for its core engineering. So while Volkswagen had rescued Auto Union in the 1960s – or enabled it to rescue itself – Audi was now

providing Volkswagen with the means to enter a new era in its history.

Not everything went according to plan. Audi had intended to spice up its range with an all-new sports coupé model in the middle of the decade, but the 1973 fuel crisis would see it hand the project back to the company that had helped develop the car. That car was the 924, which appeared in 1975 badged as a Porsche rather than an Audi, though it was the Ingolstadt company that would build this highly successful model.

The 1970s would also see the demise of the NSU name, as the ground-breaking Ro80 ceased production. Yet its ghost would return the following decade.

In the meantime, the appeal of the crisply contemporary 100 was expanded with the launch of a fashionable hatchback that would also establish the long-lived Avant name, while a high performance, turbocharged, high-trim version of the 100, badged 200, would take Audi a step closer to the luxury segment.

Milestones

1971 The first *Vorsprung durch Technik* adverts appear. It means *Progress through Technology*

1972 Dr Ferdinand Piëch joins Audi NSU as head of the technical development section

1973 The Audi 80 is launched as the successor to the F103/Audi 60/72/80/Super 90 series.

1974 Audi 50 is unveiled and goes on to become the Volkswagen Polo

1974 Ferdinand Piëch becomes head of technical development

1976 A new Audi 100 debuts with first-ever five-cylinder petrol engine

1977 The last NSU Ro80 is produced

1977 The one millionth example of the Audi 100 is built

1977 The Audi 100 Avant debuts

1978 A new, bigger 80 is introduced, with more upmarket features and a wider engine range

1979 The 200T is introduced, with Audi's first turbo engine and the world's first five-cylinder petrol turbo

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Audi 80 (B1) 1972-78 1,103,766 built

The follow-up to the 1965 60/72/80/Super 90 F103 range that re-established Audi post-war, the 1972 Audi 80 – codenamed B1 – was an early example of the premium compact saloon whose direct descendent today is the Audi A4.

Its creation was led by Ludwig Kraus, the man behind the 1968 Audi 100, and it shared a similar mechanical layout with the engine mounted ahead of a transaxle that drove the front wheels.

Available initially with the new EA 827 family of 1.3, 1.5 and 1.6-litre petrol engines (see right), the 80 was notable for its fine finish and cabin comfort. And technically, it broke new ground with its novel steering geometry, which enabled it to pull up in a straight line even if one

front wheel was running on a surface more slippery than the other or if there was a sudden tyre failure.

The Audi 80 was available as a two-door or a four-door and, in a very limited number of markets, including the UK, as an estate.

Audi 80 GTE 1975-78

A sporting version of the 80, the GTE was a more powerful development of the 80 GT, and was notable for having a fuelinjected version of Audi's 1588cc engine.

Injection which gave it 110bhp – a figure that would have been good for a 2.0-litre of the day – and responsiveness that made it one of the best four-cylinder engines of the 1970s.

It was this motor that would be installed in the Volkswagen Golf, to create the legend that was the GTi.

The Audi EA827 engine

Audi's all-new engine developed for the 1972 Audi 80 would also be used by Volkswagen, first in the Passat, then the Scirocco and Golf. It eventually became the most-produced engine in the Group's history, topping even the Beetle's air-cooled flat-four.

It would eventually become available in capacities ranging from 1297cc to 1984cc, and was notable for being smooth-running and more willing to rev than many contemporary engines of the day.

It would soon be offered with fuel injection, and in 1.6-litre form would power the Audi 80 GTE, which led to the Golf GTi (below). A 16-valve cylinder head came later.

In use the engine became well-known for its ability to cover huge mileages without overhaul. EA 827, as it was codenamed, proved to be a vital building block both in the growth of Audi and the rejuvenation of Volkswagen.



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Audi 50 1974-78 188,000 built

It's a bit of a forgotten car now, the Audi 50, but it paved the way for Volkswagen's entry into the supermini market with the Polo. In fact, the Audi 50 was the first Polo, appearing six months before the cheaper Volkswagen. Both were produced at Wolfsburg.

Another creation of Audi chief engineer Ludwig Kraus, it stood out for its classleading refinement and an interior finish of higher quality than average.

Almost an Audi – the Porsche 924

In 1975, Audi was set to announce a sleek coupé that would burnish its image and help it expand in the US.

But project EA425 – the 924 as it became known (below) – never made it as an Audi, even though the company's Neckarsulm plant would make it. Why? Because the 1973 fuel crisis prompted a complete change of plan from Audi's owners, Volkswagen. A leadership change was taking place, and new boss Toni Schmucker realised that at his first Frankfurt Show the only new thing he would be able to announce was a sports car – completely inappropriate during a time of recession and lay-offs.

But Ferdinand Piëch suggested that Porsche, who had co-developed the EA425 for Audi, buy the project and sell it as one of its own. And that's exactly what happened. But without the fuel crisis, the 924 would have been Audi's first post-war sports car.



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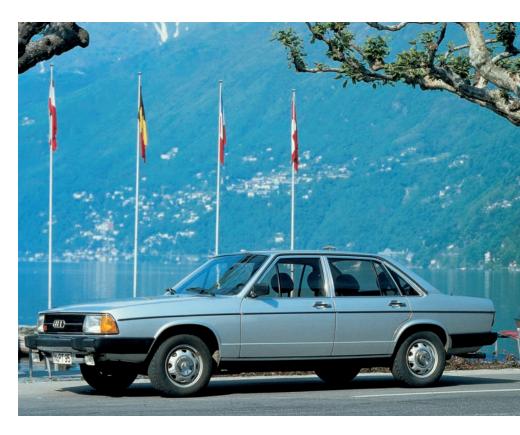
Audi 100 1976-82 988,581 built

After the success of Audi's first large postwar saloon there was no question of there being a successor. Codenamed C2, the new 100 was bigger than the old, more refined and better-equipped.

It had larger engines too, the star of the range being a new five-cylinder 136bhp 2144cc unit – the world's first petrol five-cylinder – that did much to give the car a distinct character with its appealing warble. It also gave a 120mph top speed.

The possibility of the US market mandating a 40mph frontal impact test produced a particularly effective front crash structure for relatively little extra weight compared with the old car.

The new 100's styling was crisp, more a development of the design language established with the 1972 Audi 80 than the original 100. Its clean-cut, modern looks advanced Audi's thrust into the executive territory occupied by Mercedes and, increasingly, BMW. Six-light glazing and impact-absorbing bumpers added to the contemporary look, which continued inside with a clean-sculpted appearance to the dash and door casings.





Audi 100 Avant (left) 1977-82 49,652 built

Big hatchbacks were a rarity in the 1970s, and the Avant was one of a handful of executive class five-door models, joining the smaller Audi 50 as one of two hatchbacks in Audi's mid-1970s range.

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Audi 80 1978-86 1,680,146 built

The hugely successful 1972 Audi 80, codenamed B1, was replaced in 1978 by a larger model that took it more decisively into the premium small saloon class.

The B2-generation Audi 80 (above) bore a closer visual link to the bigger Audi 100 and was finished to a far higher standard, both inside and out. A wider range of engines was offered and for the first time, quattro four-wheel drive was an option.

Audi 200 5T

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Audi 200 5T 1979-84 51,282 built

A more potent, upmarket version of the Audi 100, the 200 was the first Audi made available with a turbocharged engine, which boosted the 2.2-litre five-cylinder's power output to 170bhp.

It was the company's first tentative step towards the luxury class, though Audi's proper full-scale entry to this segment would not come until the arrival of the V8 saloon in 1988.

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The five-cylinder engine

Making a five-cylinder engine is about far more than adding another cylinder to a four-cylinder or, indeed, chopping a piston from a straight-six.

Like all engines, a five-cylinder has issues of internal balance, the reciprocating parts needing to counter one another's forces to produce the necessary refinement.

Audi was not alone in tackling this issue. Both Mercedes, which had demonstrated a five-cylinder diesel in its C111 concept coupé, and Rover had worked on these engines. In fact, the author of both the Mercedes and Audi five-cylinder engines was none other than Ferdinand Piëch, who worked on the Benz diesel engine as a freelance after he had left Porsche, before overseeing the development of a petrol 'five' after he joined Audi.

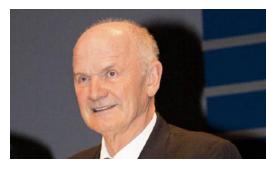
The base building block was a four cylinder to which a fifth was added, and the balance issues were solved through electronic vibration analysis, which revealed the need for the stronger bracing of engine to transmission, and careful balancing of the crankshaft to achieve the desired refinement.

Outboard scrub steering geometry

One of the key developments debuted by the Audi 80, this described suspension geometry that reduced the possibility of the car veering off course on poor surfaces, or if a brake or tyre problem occurred.

It was an early example of Audi's pursuit of safety-related technology. If the brakes were applied while on front wheel was on dirt and the other on Tarmac, the car was able to pull up straight without extra corrective effort from the driver. Conventional geometry would pull the car in the direction of the grippier Tarmac, giving the driver a lot more to think about than. The geometry also provided protection if a front tyre blew, too.

Complementing this arrangement was a diagonally split dual circuit brake system, which again enabled the car to pull up straight should the first circuit fail. Although other makers had worked on outboard scrub geometry, it was Audi's compact brake caliper design that made the breakthrough possible as it enabled the wheel, brake system, hub and driveshaft to be packaged compactly enough to achieve the required geometry.







Top, Dr Ferdinand Piëch, pictured in the late-2000s, who joined Audi NSU as head of technical development in 1972. Centre, the crisply styled B1 Audi 80 of 1972. Above, Ludwig Kraus, who masterminded the Audi 80 and could be regarded as the architect of the modern Audi generation