A history of Audi The 1960s
This was the decade that saw the modern Audi born, but the birthing pains proved strong enough almost to be fatal.

In 1960 the company was still called Auto Union, it was owned by Daimler-Benz and it produced cars with two-stroke engines that the management were slow to recognise as out-dated. By the end of the decade Auto Union was owned by Volkswagen, its name had changed to Audi, it had consigned DKW to history and absorbed NSU. And two-stroke engines were no more.

Too much independence of spirit, and an unwillingness to give up the two-stroke engines on which the company had founded its pre-war reputation, had a lot to do with Daimler-Benz’ decision to sell the company only a few years after buying it. And this despite a new, four-stroke four-cylinder engine being developed for the big DKW F102. It was a failure to adapt that threatened the very life of Auto Union.

It was saved by Volkswagen, which bought a majority share in the company in 1965, not so much to acquire the various marques that made up Auto Union, but to get access to the almost new Ingolstadt factory, which it needed to boost Beetle production.

The famous Volkswagen was added to the production lines and the two-stroke F102 was pensioned off, to be replaced by the four-stroke, facelifted F103 – the first post-war car to bear the Audi badge.

Despite these traumas, Auto Union’s determined chief engineer, Ludwig Kraus, would ensure that the reborn Audi would not die, first by developing a bigger saloon, despite being forbidden to do this by Volkswagen’s management, and second by persuading them that Audi should have its own, dedicated, engineering centre.

Without Kraus, it’s quite possible that Audi would not be the vibrant, individual company that it is today.

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**Milestones**

1964 DKW launches the F102, a front-wheel drive, three-cylinder, two-stroke-engined saloon that will form the basis of the first modern Audi.

1964 Volkswagen buys a majority stake in Auto Union from Daimler-Benz.

1965 The DKW F102 saloon is facelifted, equipped with a new 1.7-litre four-cylinder, four-stroke engine and renamed the Audi 72.

1966 Auto Union is now wholly owned by Volkswagen.

1967 NSU launches the revolutionary aerodynamic, rotary-engined Ro80 saloon.

1968 The executive class 100, developed in secret from Volkswagen, is launched and provides the foundation stone for the modern Audi.

1969 Auto Union buys NSU, to form Audi NSU Auto Union AG.

1969 Audi establishes its own engineering development facility, independently of Volkswagen, under Ludwig Kraus.
DKW F102

1964–66
1,175cc, 69bhp, 84mph,
53,000 built

This car was the basis of the first modern Audi, but it started life as a DKW, marketed by Auto Union, both brand names appearing on the car.

Unlike the smaller Junior, the F102 benefited from modern monocoque body construction, but it was propelled, somewhat noisily, by a three-cylinder two-stroke engine whose outmoded technology would almost break the company because the car sold so badly.

But paradoxically, this would lead to the rebirth of the flourishing Audi that we know today.

It was launched as a two-door, a four-door (available six months later), and options included a Saxomat automatic clutch and a sunshine roof. It was dropped in 1966, a year after the four-stroke facelifted Audi version of the car was launched, finishing off DKW.
NSU Prinz

Prinz/Super Prinz (below)
1961-1973
598cc, 36bhp, 75mph,
570,000 built

This rear-engined car followed a format common among small cars in the 1950s and ‘60s and very obviously influenced by the Volkswagen Beetle. It was propelled by an air-cooled twin-cylinder engine driving the rear wheels via a four-speed gearbox, and handled better than many contemporary rear-engined models.

Prinz 1000/1000C
1963-72,
996cc, 40bhp, 80mph,
196,000 built

A longer wheelbase, more attractively styled version of the original Prinz, retaining the smaller car’s decent handling.

Prinz TT (above)
1965-1972
1177cc, 65bhp, 95mph,
63,289 built

The temptation to produce hot versions of small cars is rarely resisted by their makers, and the TT built quite a reputation for itself in Germany as the equivalent of the Mini Cooper. The engine revved to 7,000rpm – highly unusual in its day – but was well-behaved around town, and economical too. Those wanting more go could opt for the twin carburettor 70bhp TTS version which was good for 100mph.
NSU Wankel Spider

1963-66
498cc, 50bhp, 99mph,
23,000 built

This was the first production car to use a rotary engine designed by Felix Wankel, and was a minor revolution as a result. Its single rotor engine was powerful enough to allow it an impressive near-100mph top speed. And it was pretty, too. Although this radical version of the Prinz never sold in big numbers its existence pushed a number of major manufacturers into pursuing rotary engine development, Citroen, General Motors and Mazda among them.
Audi 60, 72, 80, Super 90

1965-72, 417,000 built

The first four-stroke version of the DKW F102, with a 72bp 1.7-litre slant-four and a modernising facelift. The first Audi-badged version was labelled the 72, after its power output. Its thin-pillared, glassy cabin and a wide, headlamp-enveloping grille established a visual signature that would persist for decades, as did the clean, almost delicate design language.

The F103 was not revolutionary, but after the oddball cars previously produced this more mainstream model had the potential to take the reborn Auto Union company to a wider audience.

The slant-four engine lowered the 72’s bonnet line and its centre of gravity, and was novel for running a high compression ratio (11.5:1) some way between a petrol and a diesel engine, which is why it was known as the mitteldruckmotor (medium pressure motor). It was also unusual for having combustion chambers part-accommodated within the piston crowns, and significant for its location ahead of the transaxle, which provided the template for millions of succeeding Audis.

The F103 was available in two-door, four-door and estate forms, the various models within the range labelled by power output, starting with the 60 and running to the Super 90.
This was one of the most sensational-looking saloon cars ever produced, a car that still looks amazingly modern four decades after it first appeared.

And it wasn’t revolutionary simply for its looks, the ‘Ro’ of its name indicating that it was powered by a Wankel engine, whose twin rotors developed 114bhp with incredible smoothness.

The Ro80’s innovations didn’t end with its engine, which was mated to a semi-automatic gearbox, a micro-switch in the gearlever knob operating the clutch to make this a two-pedal car.

The NSU’s aerodynamics were also impressive, aided by a wedge profile, windscreen that wrapped into the A-pillars and a roof and headlamps sculpted to blend with the bodywork.

Four-wheel disc brakes, power steering and advanced alloy wheel designs all combined to make this a truly unusual car, whose look would influence the third-generation Audi 100.
Audi 100, 100 Coupé

Audi 100
1968-76 1.8, 100bhp, 797,000 built

The C1, as it was codenamed, was developed in secret by former Mercedes engineer Ludwig Kraus, who stayed with Auto Union when the company was sold to Volkswagen in 1965. A large, front-wheel drive saloon, it took Audi into the executive market, which was growing fast as Europe became more affluent. Although new owners Volkswagen had initially resisted the idea of Ingolstadt developing new models, it relented when it saw the design prototype, and the 100 would go on to become a highly successful model. The 100 also put Audi on the map in the UK during the 1970s.

Audi 100 Coupé
1969-76, 30,687 built

This elegant two-door coupé was the most upmarket post-war Audi to date, its lines not dissimilar to those of the contemporaneous Aston Martin DB5.

Mechanically it was essentially the same as the 100 saloon, but it was available with a twin carburettor 115bhp version of the 1,871cc engine, and came with ventilated front disc brakes and an upgraded interior.
The secret car that saved Audi

When Volkswagen bought the nearly new Auto Union factory at Ingolstadt in 1964, it was not so much for the collection of models and brands it would gain as the plant itself, which it desperately needed to increase production of the Beetle, then selling at a phenomenal rate.

The factory continued building the Audi F103, but its predecessor, the two-stroke DKW F102, was rapidly phased out. Volkswagen’s opinion of Auto Union’s product planning was so low that boss Heinrich Nordhoff forbade any more development other than for the models it already made. Nevertheless, Audi’s energetic ex-Mercedes chief engineer, Ludwig Kraus, (right) developed the 72 into 60, 80 and 90hp models, adding a four-door and an estate.

And Kraus had other ideas, too. In his mind’s eye lay a bigger, more modern Audi, the Audi 100 (pictured) – a car that his Volkswagen bosses had forbidden him from creating. He went ahead anyway, secretly building a clay model of the car that would eventually be discovered by Rudolf Leiding, who had been appointed to run Audi. Despite the disobedience Leiding was delighted with what he saw, reckoning the company could potentially sell 300,000 of them. The pair now had to persuade the Volkswagen board to accept the car and give it the go ahead.

Leiding asked them to allow Kraus to make what he vaguely called ‘body modifications’ and then asked the management to see the results. They were surprised – and delighted. Volkswagen boss Nordhoff was among the keenest to see the car enter production, and it debuted late in 1968, going on to sell not 300,000 examples but well over 800,000, vindicating Kraus’s plan and almost certainly saving Audi.
First rotary-engined production car – 1963

The pretty NSU Prinz Coupé (below) and Spyder were the first cars in the world to be sold with the revolutionary rotary engine developed by Felix Wankel.

It dispensed with pistons, conrods, valves and camshafts, using a triangular rotor whose eccentric, but essentially circular, motion created combustion chambers within the trochoidal chamber that formed the engine block.

It was an ingenious design that massively simplified the internal combustion engine, but brought with it a fresh set of problems centring on the rotor tip seals, which had a tendency to wear prematurely, a problem that seriously affected the later NSU Ro80.

High fuel consumption and exhaust emissions were further challenges, but owners loved the engine’s quiet, smooth-revving nature. The rotary engine was eventually proved to be less efficient than a piston engine, one reason why the technology was not widely taken up.

Medium pressure engine debuts – 1965

Developed in a collaboration between Auto Union and its then owners, Daimler-Benz, this 1.7-litre four-cylinder engine debuted in the 1965 Audi 72 and used an 11.5:1 compression ratio that lay between that of a typical petrol engine and a diesel – hence ‘medium pressure’.

The greater combustion efficiency, offered more performance and better fuel economy, although this was slightly negated by its need for premium octane petrol to prevent ‘knock’. But it was an early foray into the efficient technology that has characterised Audi engines since.

NSU Ro80 launched – 1967

The Ro80 (right) would have been a bold design even if it had had a conventional engine, and is widely regarded as one of the best-looking and most innovative cars of the 20th century. Its wedge-shaped, extensively glazed, low-drag body, four-wheel disc brakes and semi-automatic transmission was crowned by a twin-rotor Wankel engine, giving a top speed of 112mph and providing sophistication to match the car’s looks.

A potentially stellar career was undermined by engine unreliability, however, and though its wear problems were eventually solved by then the damage was done.

Yet the Ro80 lived for a decade, and heavily influenced the design of the third-generation Audi 100.