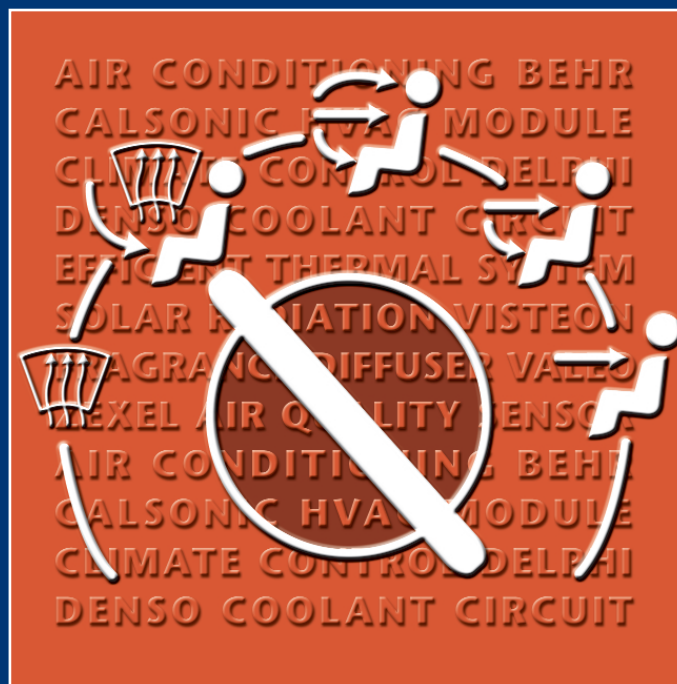


Research Report
ABOUT Automotive

The global market for automotive heating, ventilation and air conditioning

2004 edition

by Matthew Beecham



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Market forecast

Overview

Automotive air conditioning dates back to 1940, the idea of dehumidifying, filtering and cooling the air inside a car having evolved in North America where climatic extremes exist. There, and in Japan, it is now regarded as something of a necessity. By the early 1990s it had passed the 90% penetration rate in the US. Europe, however, lags well behind with a penetration rate of around 66%.

It is not just passenger cars that are driving demand for air conditioning

It is not just passenger cars that are driving demand for air conditioning. Van fleets are under increasing pressure to buy higher specification vehicles in the future or face a major drop in the value of their fleets when the time comes to dispose of them. Commercial vehicle buyers are now looking for a much higher standard of interior comfort, better engines and extras such as air conditioning, power steering and electric windows. Three years ago, most of these items were extra-cost options on vans, but they are now increasingly fitted as standard. Buyers of used vehicles will now not pay extra for these kinds of luxury, say vehicle disposal specialists, which means standard-specification models will simply be worth less. In the worst cases, vans without power steering, for example, could be worth £1,000 less than those with it.

European market

Overall, the global passenger car air conditioning market will continue to grow significantly, especially in Europe, this growth being particularly focused on the needs of small- and medium-sized cars, as an auto executive said: "In Europe, the last frontier and the largest segment is the B segment which includes cars like the Fiat Punto and Renault Clio. That is where we are seeing the rapid fitment rate."

Although the European market is still growing, the speed at which the penetration will grow is hard to predict. It is clear that carmakers will increasingly use air conditioning as a major selling/marketing feature in selected markets for the foreseeable future. Across Europe, air conditioning is now offered on just about every car as either standard or optional equipment. Increasingly, however, carmakers are offering air conditioning as standard equipment. In cases where the comfort feature is offered as an option, retail prices in the small car segment hover around the £500 mark. For example, in October 2003, Fiat offered air conditioning in the Punto 1.2-litre Dynamic 3-door hatchback for £580.

ABOUT Automotive estimate that around 66% of all cars in Europe were fitted with air conditioning systems last year (2002)

ABOUT Automotive estimate that around 66% of all cars in Europe were fitted with air conditioning systems last year (2002). They include the entire range of air conditioners from manual control to the more sophisticated automatic climate control, which adds on-board diagnostics, multiplex wiring and in-car temperature and humidity sensors to maintain temperatures within one degree of pre-set limits. Although manually adjusted thermostatic controls still dominate the European market, they are gradually losing ground, as they have done in the US and Japan, to automatic and semi-automatic systems. In Europe, industry estimates that 32% - 35% of cars have some sort of automatic climate control, predicting that this could easily reach 40% by 2005. That is up from less than 10% in 1999.

Behr was the first to enter the European market with automatic climate control, supplying some Audi and Porsche models in 1987. In the UK, manufacturers estimate that the automatic climate control market is approaching 30% fitment rates. But the fitment of automatic systems is no longer the sole preserve of luxury cars. VW offer dual zone climate control on the Golf. Manufacturers report they are seeing dual-zone move from what used to be classed as a D-class vehicle down through a C- and B-class car. "Dual-zone is rapidly becoming a marketing feature for the vehicle

makers," said one supplier. Fiat is currently offering its Stilo model with dual-zone as a special offer. With many upper medium and premium cars in Europe being equipped already with air conditioning as standard, a major area of competition will be the basic and small car market.

Sales of other, higher-value systems should keep the market a healthy one for some years to come however, as automated air conditioning becomes more widely used and new systems that use carbon dioxide as a refrigerant come to the market. Valeo has already announced a €1 billion contract to supply new dual control air conditioning systems for the next-generation VW Golf. These systems will enable front seat occupants to set their own temperature. In terms of a ceiling fitment rate, manufacturers expect to see Europe reach similar levels that are currently seen in North America and Japan. Exactly when that occurs, however, is harder to predict.

Table 4 shows our retrospective look at European air conditioning penetration by vehicle segment from 1990 through 1999, while table 6 indicates our predictions for each segment through 2010. Table 5 remains unchanged from our initial estimates set out in 2001. We verified these figures with industry. They were in complete agreement at the gradient of the slope, give or take a percentage point. On that basis, we stand by our original fitment estimates through each segment. Going forward, however, we have revised our forecasts slightly downwards in respect of the small and mini car segments. Although manufacturers agree that Europe is regarded as one of the major growth markets, the small and mini car segments will show strong growth but not as high as we originally forecast.

The vehicle makers have a very influential role in determining the speed at which OE fitment progresses in Europe

It is clear that the vehicle makers have a very influential role in determining the speed at which OE fitment progresses in Europe. Recent developments have shown a greater willingness to place air conditioning on the standard equipment list, even in small and mini cars, while in other cases the option price has been reduced to a very low level. Such supply-driven boosts to the market can have a potent short-term effect. It is clear that air conditioning as a feature will be used as a powerful selling/marketing tool in Europe for some time to come, especially in the most competitive segments of the market. This zero or very low-cost experience of air conditioning, together with increased awareness of the demisting, filtering and circulation properties of air conditioning systems – features which may encourage higher fitment levels in northern European markets especially – will ensure that such systems become more widely accepted by consumers, the 'luxury' tag gradually fading in the process.

Table 4: Western Europe: air conditioning penetration by vehicle segment¹, 1990 - 1999 (% of sector)

	Luxury	Large	Sports	Mid	Compact	Small	Mini
1990	96	69	49	26	5	1	0
1991	97	72	52	33	8	2	1
1992	97	75	55	38	11	4	2
1993	97	78	58	44	15	6	3
1994	98	80	60	48	20	8	4
1995	98	82	62	53	28	11	6
1996	98	84	64	57	32	14	9
1997	99	86	66	63	36	18	14
1998	99	87	67	67	40	23	18
1999	99	88	68	68	43	28	22

¹Vehicle segments:

Mini / Segment A - City/Utility Cars (eg Daewoo Matiz, Fiat Panda)

Small / Segment B - Supermini (eg Fiat Punto, Ford Fiesta, Renault Clio)

Compact / Segment C - Lower Medium (eg Peugeot 307, VW Golf, Ford Focus)

Mid / Segment D - Upper Medium (VW Passat, Opel Vectra, Renault Laguna)

Large / Segment E1 - Mid Exec (BMW 5, Audi A6, Jaguar S-type, Mercedes-Benz E-class)

Luxury / Segment E2 - High Exec (Mercedes-Benz S-class, Jaguar XJ)

Sports / Segment F - Sports (Mercedes-Benz SL, Ferrari)

Sources: ABOUT Automotive and industry estimates.

As table 6 indicates, by 2007, we estimate that OE installation rates in western Europe could well rise to around 79%, boosted by increasing fitment in small and compact-sized cars and utility vehicles. There can be no doubt that, in volume terms, the European air conditioning sector has seen massive growth. But wholesale prices are falling all the time. To illustrate this, Behr's air conditioning system turnover has doubled over the last ten years whereas the number of units the German company has sold has risen fourfold.

In eastern Europe, the industry consensus is that the fitment rate of air conditioning on smaller cars will have a significant influence on the overall market. Here, we anticipate overall fitment rates will rise from 46% in 2002 to 56% in 2007.

Table 5: Western Europe: air conditioning penetration by vehicle segment¹, 2000 - 2010 (% of sector)

	Luxury	Large	Sports	Mid	Compact	Small	Mini
2000	99	89	69	69	45	34	25
2001	99	90	70	70	47	36	27
2002	100	91	71	71	49	38	29
2003	100	92	72	72	51	49	31
2004	100	93	73	73	53	42	33
2005	100	94	74	74	55	43	34
2006	100	95	75	75	57	44	35
2007	100	96	76	76	59	45	36
2008	100	97	77	77	61	46	37
2009	100	98	78	78	63	47	38
2010	100	99	79	79	65	48	39

¹Vehicle segments:

Mini / Segment A - City/Utility Cars (eg Daewoo Matiz, Fiat Panda)

Small / Segment B - Supermini (eg Fiat Punto, Ford Fiesta, Renault Clio)

Compact / Segment C - Lower Medium (eg Peugeot 307, VW Golf, Ford Focus)

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Luxury / Segment E2 - High Exec (Mercedes-Benz S-class, Jaguar XJ)

Sports / Segment F - Sports (Mercedes-Benz SL, Ferrari)

Sources: ABOUT Automotive and industry estimates.

Although the above two tables look at the total market for air conditioning (all types, from manual through fully automatic), they do not indicate the extent to which we can expect to see, say, the fitment and growth rate of dual zone in the Compact (Segment C) sector.

In the Small car sector, manufacturers reckon that of the 44% of cars fitted with air conditioning in 2005, 20% will be manual control, 50% will be dual-zone and 30% will be fully automatic. Passenger cars that already offer dual-zone here include the Nissan March and Peugeot 206.

In the Compact car sector, they anticipate that of the 55% of cars built with air conditioning in 2005, 60% will have dual-zone control and 40% will be fully automatic. The Fiat Stilo offers dual control.

Turning to the Mid range cars, manufacturers expect to see 95% of all those fitted with air conditioning to offer dual-zone. The Peugeot 406 was the first car in this segment to offer dual-zone.

By 2005, manufacturers expect all of the air conditioners fitted inside luxury cars – such as the Renault Vel Satis and Peugeot 607 – to have either full or dual climate control.

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