Global market review of automotive roof systems – forecasts to 2014

2008 edition
Global market review of automotive roof systems – forecasts to 2014

2008 edition

August 2008

By Matthew Beecham

Published by

Aroq Limited
Seneca House
Buntsford Park Road
Bromsgrove
Worcestershire
B60 3DX
United Kingdom

Tel: +44 (0)1527 573 600
Fax: +44 (0)1527 577 423
Web: www.just-auto.com

Registered in England no: 4307068

© 2008 All content copyright Aroq Ltd. All rights reserved.
Single-user licence edition

This report is provided for individual use only. If you would like to share this report with your colleagues, please order additional copies or sign up for a multi-user licence by contacting:

Holly Nash
Research manager, just-auto.com
Tel: +44 (0)1527 573 614
Email: holly.nash@just-auto.com

Copyright statement
© 2008 All content copyright Aroq Limited. All rights reserved.

This publication, or any part of it, may not be copied, reproduced, stored in a retrieval system, or be transmitted in any form by any means electronic, mechanical, photocopying, recording or otherwise without the prior written permission of Aroq Limited. This report is the product of extensive research work. It is protected by copyright under the Copyright, Designs and Patents Act 1988. The authors of Aroq Limited’s research reports are drawn from a wide range of professional and academic disciplines. The facts within this report are believed to be correct at the time of publication but cannot be guaranteed. All information within this study has been reasonably verified to the author’s and publisher’s ability, but neither accept responsibility for loss arising from decisions based on this report.

Incredible ROI for your budget – single and multi-user licences
We understand the pressure your research budget is under and price our reports realistically. You won’t find our reports with four, or even five-figure price tags, but you will find that they make some of the competition look expensive. Each title is available to you on a single-user basis, supplied on the strict understanding that each title is not to be copied or shared. Alternatively, titles can be shared within departments or entire corporations via a cost-effective multi-user licence. Multi-user licences can also save you money by avoiding unnecessary order duplication. To further add value, all multi-user
copies are hosted on a password protected extranet for your department or company – saving you time, resources and effort when sharing research with your colleagues. To find out more about multi-user pricing, please contact Holly Nash.

**just-auto.com membership**

From just GBP99/US$195/EUR125* a year you will gain access to a growing portfolio of exclusive management briefing reports, and also receive 12 new briefings for each year you are a member. As well as this impressive list of members’ only reports, you also gain one year’s access to a constantly-updated stream of news, feature articles and analysis. Established in 1999, just-auto has rapidly evolved into the premier source of global automotive news, analysis and data for busy senior executives. For details of the current special joining offer visit: [www.just-auto.com/offer.aspx](http://www.just-auto.com/offer.aspx)

*Prices correct at time of publication.*
Contents

Single-user licence edition.............................................................................................................. ii
Copyright statement....................................................................................................................... ii
Incredible ROI for your budget – single and multi-user licences.................................................... ii
just-auto.com membership........................................................................................................... iii

Contents........................................................................................................................................ iv

List of figures .................................................................................................................................. vi

List of tables .................................................................................................................................... vii

Preface ............................................................................................................................................. viii
Research methodology ................................................................................................................... viii
Report coverage ............................................................................................................................ viii
The author..................................................................................................................................... ix

Chapter 1 Introduction .............................................................................................................. 1

Chapter 2 The market .................................................................................................................. 2
Market trends ........................................................................................................................................ 2
Market players................................................................................................................................. 3
ArvinMeritor .................................................................................................................................. 3
ASC Inc ...................................................................................................................................... 3
Edscha .......................................................................................................................................... 3
Q&A with Edscha ........................................................................................................................... 4
Heuliez ......................................................................................................................................... 6
Inalfa ............................................................................................................................................. 7
Karmann ...................................................................................................................................... 7
Q&A with Karmann ....................................................................................................................... 8
Magna Car Top Systems ............................................................................................................... 11
Pininfarina .................................................................................................................................. 11
Webasto ...................................................................................................................................... 12
Emerging markets ......................................................................................................................... 12
China .......................................................................................................................................... 12
India .......................................................................................................................................... 12
Mexico ....................................................................................................................................... 12
Market shares ............................................................................................................................... 13
Market forecasts ............................................................................................................................... 15
Sunroof market ............................................................................................................................... 15
Convertible roof market ............................................................................................................... 19

Chapter 3 Technical review ....................................................................................................... 23
Retractable roof innovations ......................................................................................................... 23
Convertible innovations............................................................................................................... 26
Sunroof innovations ................................................................. 27
Tomorrow's roofs ........................................................................ 28
Q&A with Lanxess ..................................................................... 32

Chapter 4 Manufacturers .......................................................... 36
ArvinMeritor .............................................................................. 36
ASC Inc ...................................................................................... 36
Edscha ...................................................................................... 37
Heuliez ...................................................................................... 39
Inalfa Roof Systems BV .......................................................... 40
Karmann .................................................................................... 43
Pininfarina ................................................................................ 46
Webasto .................................................................................... 47
List of figures

Figure 1: Global market shares for OE vehicle sunroofs for passenger cars and light trucks, 2007 (% of volume)............................................................................................................ 13

Figure 2: European market shares for OE vehicle sunroofs for passenger cars and light trucks, 2007 (% of volume)................................................................................................... 14

Figure 3: North American market shares for OE vehicle sunroofs for passenger cars and light trucks, 2007 (% of volume)....................................................................................... 15
List of tables

Table 1: Production of OE conventional-size sunroofs for light vehicle applications in Western Europe, Japan and North America, 2004-2014 ('000 units) ............................................. 15

Table 2: Market value of OE conventional-size sunroofs for light vehicle applications in Western Europe, Japan and North America, 2004-2014 (EUR '000s) .............................................. 16

Table 3: Production of large OE sunroofs for light vehicle applications in Western Europe, Japan and North America, 2004-2014 ('000 units) .................................................................... 18

Table 4: Market value of large OE sunroofs for light vehicle applications in Western Europe, Japan and North America, 2004-2014 (EUR '000s) ......................................................... 19

Table 5: Production of retractable hard-top roof systems for light vehicle applications in Western Europe, Asia and North America, 2004-2014 ('000 units) ...................................................... 20

Table 6: Production of retractable soft-top roof systems for light vehicle applications in Western Europe, Asia and North America, 2004-2014 ('000 units) ............................................... 21

Table 7: Production of retractable hard-top and soft-top roof systems for light vehicle applications in Western Europe, Asia and North America, 2004-2014 ('000 units) ...................... 21
Preface

Research methodology

This report is intended to provide an overview of the vehicle roof systems industry, providing top level market volume and value forecasts through 2014. Our forecasts are not extrapolative but dependent on the underlying drivers of supply and demand. Our forecasts are largely based on interviews with the author’s extensive international network of industry contacts. This allows us to consider and explain the meaning and implications of industry events, rather than offer simple description based on incomplete data.

Our approach is divided into two distinct methodologies:

○ qualitative interviews – these are generally opinion-based, which aim to build knowledge about future roof market trends and company strategies; and
○ quantitative interviews – typically fact-based, focused on establishing market values, shares, and volumes.

Our research typically concentrates on applications for light vehicles which include all cars, light trucks and the various cross-over vehicle styles such as sports utility vehicles and people carriers. These vehicles collectively account for about 96% of the global vehicle build.

Our market forecasts are set out by major light vehicle-producing region, i.e. Western Europe, Japan and North America. For the purposes of this report, the countries included in Western Europe are as follows: Austria, Belgium, Bosnia and Herzegovina, Croatia, Denmark, Faroe Islands, Finland, France, Germany, Gibraltar, Greece, Iceland, Ireland, Italy, Luxembourg, Macedonia, Malta, the Netherlands, Norway, Portugal, Serbia and Montenegro, Slovenia, Spain, Sweden, Switzerland, Turkey, and the UK.

Report coverage

In this, the fourth edition of this report, just-auto reviews the key market drivers for vehicle roof systems, and updates the market analysis. Following our market overview in Chapter 1, just-auto’s product forecasts in Chapter 2 predict in some detail how the conventional sunroof, large roof, retractable
hard-top and soft-top roof system market will evolve in Western Europe, North America and Japan from 2004 through to 2014. Chapter 3 provides an updated review of new product developments. Chapter 4 sets out brief profiles of the major manufactures, namely ArvinMeritor, ASC, Edscha, Heuliez, Inalfa, Karmann, Pininfarina, and Webasto.

The author
Matthew Beecham has more than 15 years’ experience of researching, writing and analysing market and technical trends in the global automotive components industry. Since 2000, he has served as an associate editor for just-auto. In addition to roof systems, he authors a range of global auto components’ market research reviews, including batteries, braking systems, coatings, clutches, cockpits, driver assistance systems, door modules, electric motors, engine cooling systems, exhaust systems, front-end modules, fuel injection, fuel tanks, glazing systems, ignitions, interiors, lighting, mirrors, shock absorbers, spark plugs, rotating electrics, tyre pressure monitoring systems, tyres, wheels and wipers. Matthew’s freelance assignments have included working for AT Kearney, McKinsey, Kuwait Institute for Scientific Research, Motorsport Industry Association, Motor Industry Research Association and the Economist Intelligence Unit. He has also written for magazines including Car Graphic (Japan), JAMA (Japan) and Automotive Engineer (UK). He was awarded a PhD in automotive technology transfer from Cranfield University.
Chapter 1 Introduction

Roof systems are fast becoming part of a car’s identity. The car industry has discovered that the roof is an area where it can make money. Panoramic sunroofs stretching the length and breadth of a vehicle are becoming increasingly popular on both sides of the Atlantic. In fact, manufacturers report an “unbelievable” amount of interest in large sunroofs. The trend is toward roof systems, mainly of glass, with big openings that can be adjusted even during driving. These designs give the best of both worlds: saving on cost (compared to a convertible) and adding to the versatility of the car.

Motorists now expect an increasing level of comfort in their cars, particularly where air-conditioning and sunroofs are concerned. Such equipment is no longer the exclusive domain of luxury cars. As the car market becomes increasingly competitive, automakers are using sunroofs and other roof systems to help differentiate the product offerings to customers. An auto executive said: “The days when many people thought air conditioning could replace the sunroof are long gone. Today they recognise that the two products complement each other perfectly and, as market researchers say, increase ‘multi-sensational awareness’. The more of the roof area that can be opened, the more comfort and enjoyment.”
Chapter 2 The market

Market trends
An increasing number of automakers are offering models featuring large glass roofs (known as panoramic roofs). One reason is that large areas of glass give a sense of openness and freedom. The selection on offer nowadays is varied, ranging from the closed panoramic glass roof (Peugeot 307 SW, 407 SW, and Citroën C4) and so-called twin panels or multi-panels (Renault Espace IV) through to the lamella sunroof (Fiat Stilo). According to Saint-Gobain Sekurit, in the early 1980s, the average glass surface area in a car was about $x\cdot m^2$. Today, this figure is about $xxx\cdot m^2$. The company estimates that more than $xx\%$ of the surface area of a vehicle consists of glass. The clear view of the sky, the feeling of freedom and the large amount of light are the key selling points to consumers, says the glassmaker.

Peugeot was one of the first manufacturers to opt for a panoramic roof on a large scale in the 307 SW family estate car, and it currently offers this style of roof for lots of its model ranges. The Citroën C4 Picasso currently boasts the largest glazed areas in its class ($xxxx\cdot m^2$ in total, with $x\cdot m^2$ of this being accounted for by the panoramic windsreen). Compared to the Citroën Xsara Picasso model, which itself boasts $xxxx\cdot m^2$ of glass, an additional $xxxx\%$ of glass has been added in the C4 Picasso.

“\textit{The production of larger sunroofs does not mean that the stipulated requirements in respect of safety and comfort are no longer guaranteed},” said Bruno Pouillart, operational marketing manager of Saint-Gobain Sekurit. “\textit{Any type of glass used in a car – whether it be the windscreen, glass in a side window or glass roof – has to meet certain safety standards which are prescribed by the EU.}” In order to reduce the risk of glass breakage in sunroofs, the glassmaker recommends glass roofs are made from laminated glass (particularly over large areas) or specially coated glass. The consequence is that the larger the sunroofs, the greater the proportion of laminated glass used. Another aim for developers is therefore to make the panes of glass increasingly thinner and also lighter while maintaining the same safety standard.

© 2008 All content copyright Aroq Ltd. All rights reserved.
Retractable roof innovations

Webasto used the 2008 Geneva Motor Show to present a ‘new category’ of roof design for convertibles, known as the Webasto LigHT Concept. The roof system is a so-called Hybrid Top, i.e. a combination of hard- and soft-top which uses new materials. “The description LigHT reveals the essential key to this roof system,” said Franz-Josef Kortüm, CEO of Webasto AG. “We are using it to show for the first time what an innovative, simple and light hybrid top could look like when a retractable hard-top is combined with a soft-top.”

Whereas metal rods and joints provide stability on conventional roof systems, here Webasto relies on self-supporting surface cross members connected by film hinges. Apart from these film hinges, the LigHT Concept has one additional rotational point, which is used for moving the roof. The entire substructure is manufactured in one piece. When opened, the roof is positioned on the rear section of the car and hence does not affect the size of the boot.

The project was conducted in cooperation with IED Automotive, a spin-off of the Italian design school IED (Istituto Europeo di Design). The concept car was styled by Andrea Militelo, chief designer of IED Automotive. The surface elements of the roof are produced using Compound Spray Moulding (CSG), stemming from the further development of Webasto’s series-tested polyurethane technology. The company points out that since polyurethane combined with paper honeycomb-like structures weighs far less than conventional solutions, very light and robust roof systems can be realised in one piece.

The rear window is a polycarbonate panel produced in an in-mould decoration process. The material is very transparent and wear resistant. Polycarbonate windows absorb xxx% of UV radiation and do not splinter in the event of an accident. Thanks to the newly developed heating function, they achieve defrosting speeds comparable to a glass window. Webasto is one of the main automotive suppliers using the plastic technologies polycarbonate and polyurethane. The company operates its own synthetics facility in Schierling
Chapter 4 Manufacturers

ArvinMeritor

ArvinMeritor is a worldwide supplier of sunroofs and roof system products for use in passenger cars, light trucks and SUVs. Its roof system operation is organised under the Light Vehicle Systems (LVS) division. In May 2008, the company announced its plan to spin-off its LVS business to ArvinMeritor shareholders, with its Commercial Vehicle Systems business remaining with ArvinMeritor. The spin-off of the LVS business – to be named Arvin Innovation Inc – would be implemented through a pro-rata tax-free dividend to ArvinMeritor shareholders. Upon completion of the spin-off, ArvinMeritor shareholders will own xxx% of the common stock of Arvin Innovation. ArvinMeritor will remain headquartered in Troy, Michigan. Arvin Innovation will be headquartered in Detroit, Michigan at the current location of the LVS Detroit Technology Centre, with other corporate offices located in Europe, Asia-Pacific and South America.

ArvinMeritor designs and produces a variety of roof modules, including: module with twin spoiler sunroof, module with integrated roof rack, module with high level brake light, and module with sunroof.

LVS is a supplier of complete roof modules comprised of a roof headliner bound to an outer shell using its own patented process, which can also incorporate LVS sunroof technology.

ArvinMeritor operates a Chinese joint venture with Shanghai SIIC Transportation Electronic Co Ltd to make sunroofs for supply to Shanghai Volkswagen in China. The venture, known as Shanghai ArvinMeritor Automotive Parts, builds sunroofs for passenger car applications at a plant in Shanghai.

ASC Inc

ASC Incorporated (formerly known as American Sunroof Company and recently redefined as American Specialty Cars) is a supplier of sunroofs, convertible tops, niche vehicles and vehicle prototypes. ASC supplies convertible systems and specialty vehicle components to most of the major
<table>
<thead>
<tr>
<th>Product Ref</th>
<th>Report Title</th>
<th>Price (£ / $ / €)</th>
</tr>
</thead>
<tbody>
<tr>
<td>66885</td>
<td>Global market review of automotive roof systems – forecasts to 2014</td>
<td>£495 / $990 / €619</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Name:</td>
</tr>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Post / Zip code:</td>
</tr>
<tr>
<td>Telephone no:</td>
</tr>
<tr>
<td>Fax no:</td>
</tr>
<tr>
<td>Email address:</td>
</tr>
<tr>
<td>VAT number: (If applicable)</td>
</tr>
<tr>
<td>Purchase order number: (your ref)</td>
</tr>
</tbody>
</table>

How would you like to pay for your order? Please complete the details below

<table>
<thead>
<tr>
<th>Payment method: (please circle)</th>
<th>Visa</th>
<th>Mastercard</th>
<th>AMEX</th>
<th>Proforma invoice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which currency would you like to use? (please circle)</td>
<td>£ - GBP</td>
<td>$ - US dollars</td>
<td>€ - EUR</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit card number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit card expiry date:</td>
</tr>
<tr>
<td>Name on credit card:</td>
</tr>
<tr>
<td>Security code on credit card:</td>
</tr>
</tbody>
</table>

Please fax this form to: +44 (0)1527 577 423

Aroq Ltd, Seneca House, Buntsford Park Road, Bromsgrove, Worcs, B60 3DX, UK.
Tel: Intl +44 (0)1527 573 600, Toll Free from US: 1-866-545-5878
www.just-auto.com