M-100 INFO

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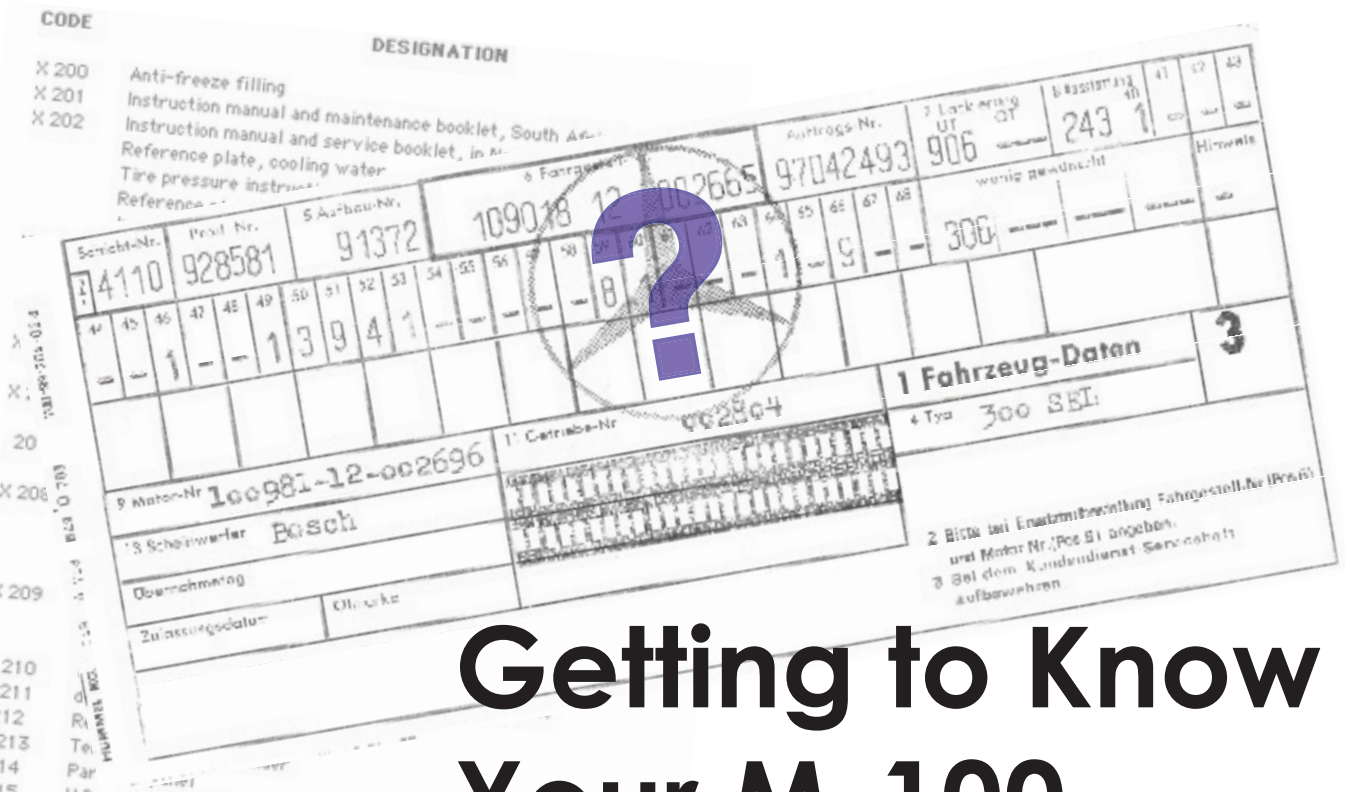

Getting to Know Your M-100

How to Obtain & Decipher:

- ***Data Cards***
- ***Option Codes***
- ***Hard-to-Get Factory Info***

Inaugural Issue!

Journal of the International Association of M-100 Owners

Welcome to the IAMO. We are here to serve You.

by Brad Menke

"We will work diligently to create an organization that will make your M-100 ownership an enjoyable experience."

We want help to preserve our vehicles' legacy

I would like to take this opportunity to welcome you to the International Association of M-100 Owners, or IAMO as we fondly call it. Whether you are a lifelong fan, a current or aspiring owner, or have only become recently acquainted with the M-100-series Mercedes-Benz, it is our goal to offer you the most comprehensive and complete member resource available anywhere.

To many of us, the Mercedes-Benz M-100-engine-powered "Grosser" 600, 300SEL 6.3, and 450SEL 6.9 are positively among the finest and rarest automobiles every crafted by any automaker. Since the remaining number of the initial 17,000 units produced is only marginally represented and continues to shrink still, those who own the precious examples that remain recognize the value of uniting together in the common cause of preserving their legacy.

By banding together as owners and interested enthusiasts, we can share our knowledge and resources to assist each other in this worthy endeavor. Thus, we have formed the IAMO to provide an organized hub and a well-spring that makes the access to vital information and contact with fellow owners a member-friendly experience.

The IAMO is organized around a Core of dedicated individuals who have already and will continue to devote their energies to provide for the needs of our membership. Rather giving you what we want you to have or what we think you need, we are committed to insuring that a democratic voice from among you, our members, will be heard and responded to. We have even gone so far as to guarantee this to you through our official Bylaws.

In the IAMO, you can be as involved with the course of your association as you want to be: in any form ranging from contented bystander to nomination to a leadership office. Even a group of members previously not directly involved in association policy or procedure is guaranteed the privilege of calling for a vote by petition. Please take the time to read our Bylaws and acquaint yourself with our member benefits and provisions.

As your President I would like to add my personal assurance to that of my fellow IAMO Core Officers that we will continue to work diligently to maintain an organization for you that will make your ownership of one of the world's finest automobiles an enjoyable experience. Even if you are a former or an aspiring owner, we are pledged to help to further your knowledge and enthusiasm for these historically significant Mercedes-Benzes.

I look forward to the opportunity of serving you and enjoying our cars together.

Brad

letter from your *editor*

For many ethnic groups and societies around the world, the tradition of oral storytelling provides the foundation of their cultural history. Passed faithfully from generation to generation over hundreds and even thousands of years, this rich collective knowledge and lore grounds these groups with their ancestral past, and binds them together into a community.

While Mercedes-Benz only has a little more than a century of automotive heritage and tradition, it is a fact that each and every vehicle the company has produced also has (or has had) a unique story to tell as well. The limited production, exclusivity and original clientele of our M-100 vehicles gives them a particularly rich heritage that few other marques and models can match.

A few years ago, when I bought my first M-100 car (a 300SEL 6.3 with 47,000 miles on the clock), along with it came a decent, but incomplete, verbal history passed to me from the seller. While I had the names and basic information about all four of my car's previous owners, I had very little other information about the car's life. In an attempt to fill in the blanks more completely, I embarked on a historical search that continues to this day.

I was fortunate that my car had spent much of its life here in Portland. My quest was aided by the discovery that the salesman who originally sold the car still works at the dealership, and also by the fact that the car had been maintained by the same people for much of its life. One day, I even (quite randomly) ran into the second owner, who bought the car in the early 1970s.

One of the earliest, and probably the singly most important, tasks I pursued was to obtain as much information from Mercedes-Benz about the car as I could from their production records. Thanks to the accurate recordkeeping of Mercedes-Benz, I was able to obtain copies of the data cards, production data sheet, and even a copy of the car's original bill of sale.

Next up was a thorough (but only semi-successful) canvassing of motor vehicle records in the states of California and Oregon, where the car had spent its life. I was able to obtain dates of when the car entered and left these states. About this time, a former Mercedes-Benz mechanic in southern California who had worked on the car in the late 1970s contacted me after seeing photographs of the car on an Internet site. He provided some rare insight into the car's years in the Santa Barbara area. Later, I was able to get additional and specific production information about my car when I visited the Mercedes-Benz corporate archives in 2001.

Through all of this, I was able to ascertain that my car has remained almost wholly original and untouched throughout its entire life. Yet, of course, there is much more to be learned! The complete maintenance records of the car reside somewhere in the archived file cabinets of my mechanic shop here in Portland. I have yet to talk with the heirs of the original owner, who still live here in the local area. The quest for more complete information continues...

Knowledge is power! For those of us M-100 owners with the intellectual curiosity -- no matter how little or much information we know about our cars -- there are resources available so that we can learn more about them. By learning as much as we can, we can better appreciate the cars and what they have been through, enabling us to be better owners and stewards of what we've been given.

This inaugural issue of the M-100 INFO newsletter is dedicated to this quest for knowledge.

Cheers, Guy.

IAMO

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M-100 INFO is a journal serving the membership of the International Association of M-100 Owners. See club section of this newsletter for membership application and more information.

Deciphering the Mysterious Fahrzeug-datenkarte

by Gerry Van Zandt

Each and every Mercedes-Benz M-100, during the build process and from the moment it left the end of the Sindelfingen assembly line, came with a very important item. This item, underappreciated and misunderstood by many, was the two or three copies of the vehicle data card, otherwise known in German as the "Fahrzeugdatenkarte."

For the M-100 owner, this card is a virtual gold mine of information about their car, and can provide significant clues about the history of the car. Because a significant number of the M-100s (particularly the Grand 600 cars) were custom-made and equipped to their owners' specifications and whims, the data cards can provide some very interesting insight into those owners' personalities and mindsets, as well as the anticipated use of the vehicle and its role in the owners' lives.

Unfortunately, many M-100 owners never see their data cards because they have been lost, misplaced, or simply destroyed over the years. Luckily, due to its excruciating attention to detail and fanatical recordkeeping, Mercedes-Benz has each and every M-100 data card on hand, safely recorded and stored for posterity on microfiche in its Stuttgart-based corporate archives. This information goes back to all cars produced after World War II. For those of us who don't have the original data cards for our cars, this presents a great opportunity to perform some extracurricular research into the history of our cars that we ordinarily wouldn't be able to.

So, you may be wondering, what on Earth can I learn from my car's data card, and why would I want to learn it? There are many reasons: simple curiosity, verification of certain equipment or options on the vehicle, completeness of the entire vehicle for restoration, for collector-insurance purposes, and for proving authenticity for sale or auction, among others.

The purpose of this article is to help you satiate your curiosity by providing a general reference by which you can obtain, and then decipher, the seemingly cryptic collection of codes and numbers found on M-100 data cards.

Obtaining Your Fahrzeugdatenkarte

First off, you need to obtain the data card. If you don't have it in hand already, the first place to look is in your glovebox or with other papers that may have come with your vehicle when you purchased it. Data cards come in two varieties: a pink "master" copy and a manila copy that was intended to remain in the glovebox of the vehicle. Check inside your owner's manual and service booklets (if you have them) to see if it is there.

If you don't find it in these places, you'll need to order the card from the Mercedes-Benz corporate archive in Germany. Traditionally, Mercedes has provided this service *gratis* for all owners who requested an example of their

card, provided that proper documentation was given (However, in recent months Mercedes has indicated that they may begin to charge a nominal fee for this service).

MB defines "proper documentation" as evidence of ownership; this can be in the form of a valid vehicle registration or certificate of title with the requester listed.

Next, you'll need to contact the Mercedes Archives with a formal written request. This can be done in two ways: via FAX, or by postal mail. You can write a short letter of a couple paragraphs detaiing your desire to obtain the vehicle data card, providing the VIN number as found on the registration or title documents, or using the VIN number found on the driver's door post (for US vehicles) or on the small aluminum plate on the inside of the driver's side windshield pillar next to the windshield. Be sure to provide your mailing address so that they know where to send the information!

If ordering by FAX, you can send this information (your letter and proof of documentation) to the Mercedes-Benz Archive at FAX number 011-49-711-17-83456. If you are ordering by mail, you can send to the following address: DaimlerChrysler AG / Mercedes-Benz Classic Center / HPC 096 R051 / D-70546 Stuttgart / GERMANY. In a few weeks, you should receive the information by mail.

If you live in the US, you can also go to any Mercedes-Benz dealer and ask a sales representative for a "Vehicle Master Inquiry" or VMI. The VMI uses data in the Mercedes-Benz USA computer system and provides much of the same basic information as found on the vehicle's data card, but isn't quite as extensive.

However typically this is free and quick -- you can walk in and walk out with a one-page VMI printout in a matter of minutes. All US Mercedes-Benz dealers have access to the VMI system.

Deciphering Your Data card

Once you have your data card in hand, the next step is to gather the background information that you will need to properly translate your data card. The tables of information provided on the IAMO web site provide the information that you will need to successfully complete this task.

Examine your data card carefully using the guide on pages six and seven. This provides an overview of the all of the information on the card. Much of the information (for example, the production control codes and brands of headlights or tires shipped on the vehicle) is only of peripheral value. The main parts you'll want to focus on are the option codes, interior and exterior colors, and order number information.

First, examine the option code information. To decipher these, combine the two small numbers at the top of each option code box with the larger number in the center of the box into a three-digit code. Then reference the option code table's corresponding three-digit codes. Do this for each box.

Next, examine the "Lackierung" (exterior paint code) and "Ausstattung" (interior upholstery) boxes found at the top of the data card. Cross-reference these boxes with the codes found in the "paint and upholstery codes" tables on the IAMO web site. For most M-100s the "OT" sub-box in the "Lackierung" area will be blank, because the majority of cars were painted a single color.

The next step is to examine the "Auftrags-Nr" (order number) box. This number is unique to each vehicle and this number provides a wealth of clues about when and where the vehicle was originally ordered. Use the accompanying table and chart to decipher this number.

Lastly, peruse the rest of the card, box by box, in order to get a feel for other information that was provided, including serial numbers for the original transmission, engine, and chassis, as well as steering box and front/rear axles (if provided). It is prudent at this time to write down the VIN and motor numbers, as well as the key codes (if indicated) and keep this information in a safe place. It will come in very handy in case you need to order a new key or to prove the authenticity of the vehicle's components if this is needed for obtaining collector car insurance or if you sell the vehicle in the future.

Conclusion

As M-100 enthusiasts (or amateur sleuths?), most of us are intensely interested in the details and history of our cars. Obtaining the vehicle data card for your M-100 can be a great first step in learning the history of your car, or for determining whether the key subsystems on your car are original or not. Serial numbers are found on the vehicle's engine, transmission, chassis, axles, and power steering gearbox, and it can be a bit of fun and useful detective work to see if these still match the information found on the data card.

If certain components don't match, it provides the opportunity for more detective work if you are so inclined. Also, if you are restoring your car to its original condition and specifications, having access to the information found on the data card is instrumental (and in most cases essential) in the case that interior and exterior colors and materials have been changed over the car's life.

In any case, having this information somehow brings us closer to our cars and provides valuable insight into our stewardship of them.

Enjoy your fact-finding and detective work!

anatomy of a *data card*

Layer Number
A production control code that is different between different types of vehicles, and even those produced within a certain type

Product Number
A code indicating the specific type of product built

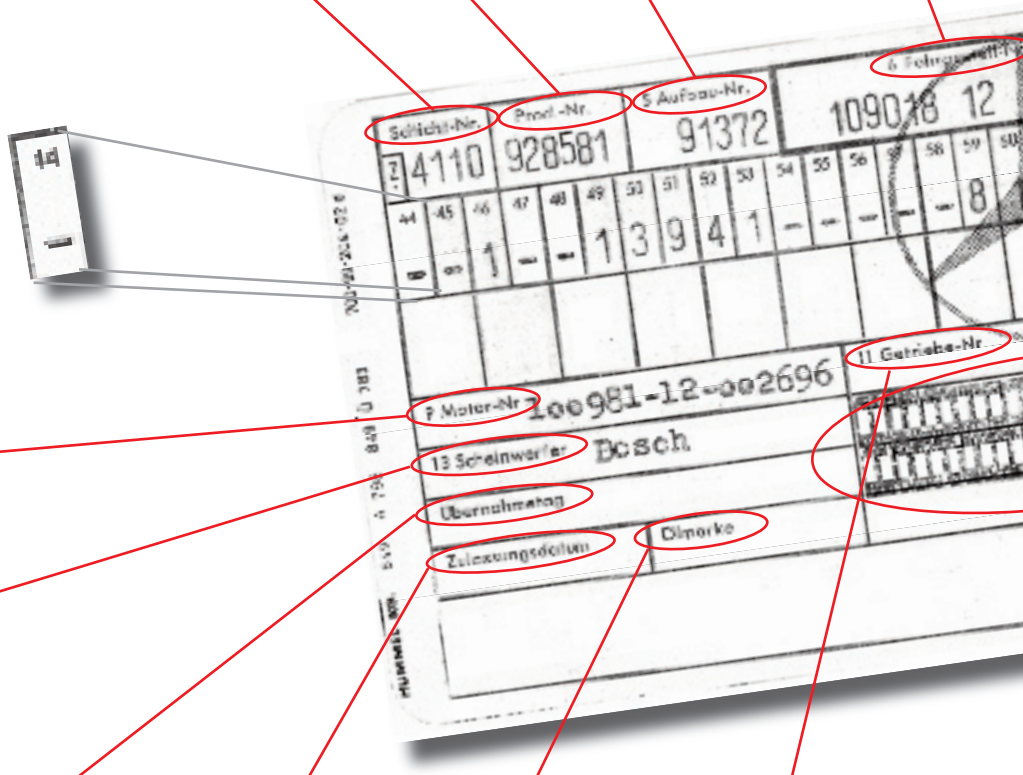
Chassis Number
The vehicle's chassis number; in the US, this is commonly known as the Vehicle Identification Number (VIN)

Individual Option Codes
This row of small rectangular boxes, numbered 41-68, indicates the specific options that were built on that particular car. These codes are always a 3-digit format, starting with the two small numbers at the top of the box, followed by the large digit in the center of the box.

Boxes with with a "—" within indicate that options in that particular series weren't used on that specific car.

Individual option variations in a specific code series were denoted by the third digit, which in many cases was variable. The chart available on the IAMO web site clearly shows the option variations present for a specific series

Build Number
Indicates the individual type of car structure built



Engine Number
Serial number of the vehicle's motor as shipped from the factory

Headlight Type
Indicates the brand of headlights as shipped from the factory. Generally always "Bosch"

Order Entry Date
Indicates when the order was entered into the production system. This box is generally always empty

Permission Date
A factory quality control indicator. Generally always blank

Oil Brand
Indicates the brand of motor oil used in the vehicle. Generally left blank

Transmission Number
Provides the serial number of the original transmission installed in the vehicle

Exterior Paint Codes

Indicates the paint code(s) of the vehicle. The “UT” code is used for all vehicles, and denotes the lower-body paint code for two-tone cars (or the entire car color for solid colors). The “OT” code denotes the upper (roof) paint code if so used

Interior Trim Codes

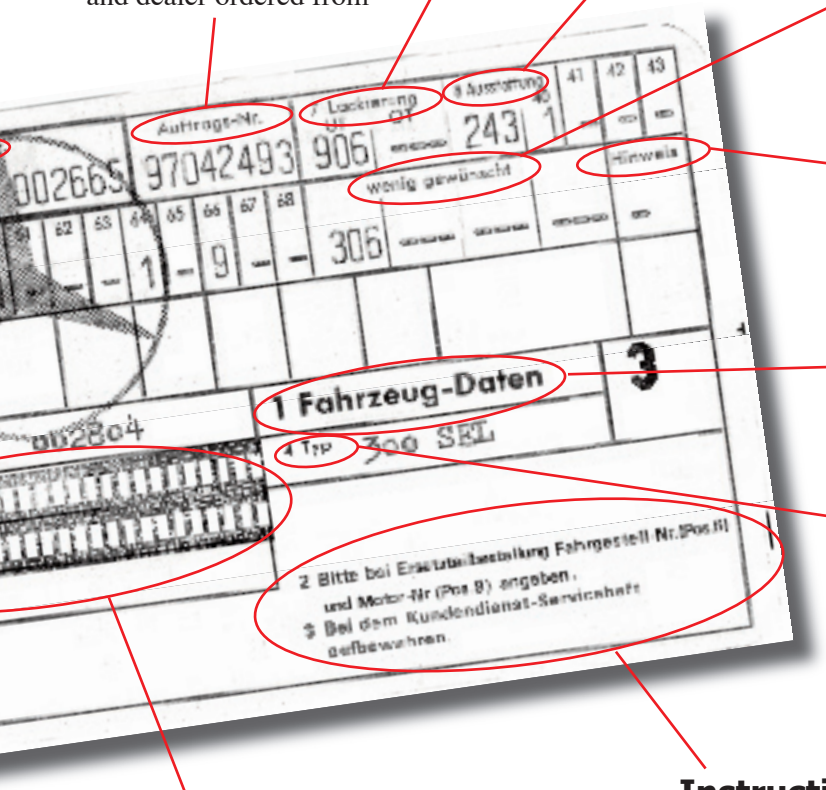
The first three-digit code denotes the color of the interior upholstery. The second code indicates the type (leather, velour, MB-Tex) of material used. This particular card indicates a red (243) leather (40-1) upholstery

Order Number

A factory number indicating the vehicle’s individual production order number. Every car has a different number. Consists of the year, country and dealer ordered from

Special Requests

Lists codes for optional equipment requested by purchaser, or special options abocve and beyond normal optional equipment. Code 306 is always found on US-spec 6.3s, for example



Reference Number

A reference for additional special production codes. This box is used on some vehicles and not on others

Fahrzeug-Daten

The main title of the card; translates into “vehicle specifications”

Vehicle Model

Vehicle type. For M-100 cars, this will say “600,” “300SEL” or “450SEL 6,9”

Instructions

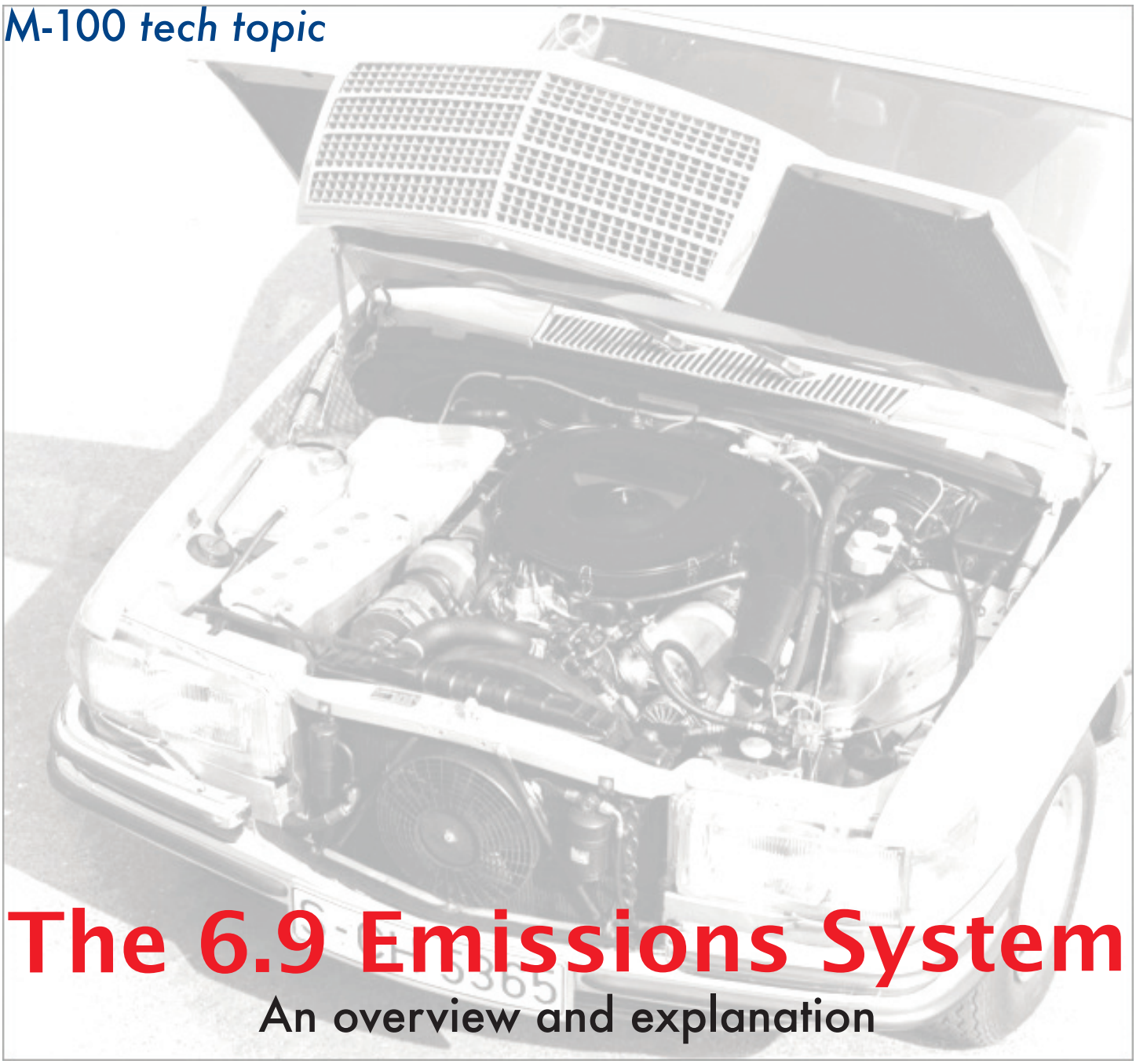
Two inscriptions admonishing the vehicle owner to: provide the chassis and motor numbers when ordering spare parts, and keep the data card together with the vehicle’s service booklet

Key Codes

Provides the vehicle key codes for boh master and valet keys. Beige cards, typically kept in the vehicle, have these boxes cut out (hanging chads and all!) for security purposes. Pink cards, which were intended for possession of the owner, contained the full codes. These codes allowed the owner to order new keys in case a key was lost or additional keys needed to be made

Other Information

Variations on the data cards for later M-100 cars (not indicated on this sample data card) included additional information. This included wheel size, tire size and brand, front and rear axle serial numbers, and steering box number



The 6.9 Emissions System

An overview and explanation

It is no secret that the 450SEL 6.9 was introduced in the United States nearly two years after its May, 1975 introduction in the Alsace region of France. While the 1973 Arab-Israeli conflict and the subsequent surge in energy prices -- and the fuel-economy mindset they triggered among US consumers -- were partially responsible for the delay, there was also another reason. Mercedes-Benz engineers had to work very diligently to engineer and then perfect a complex emission-control system and additional safety equipment for the US market.

The challenge was two-fold: to preserve as much of the 6.9's European-spec original power, torque and drivability as possible, while making a vehicle that could pass the increasingly stringent US automotive pollution standards. This was no easy task, but the numbers and facts tell the story. The 6.9 engine, in European form, provided 286 horsepower and 405 ft-lbs of torque. In US trim, with full pollution controls, the same engine produced 250 horsepower and 360 ft-lbs of torque.

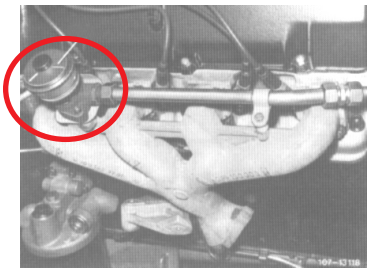
In addition, the 6.9 could easily pass the emissions standards of the day. A true testament to the engineering feat of the Mercedes-Benz engineers is that this same, unmodified US-spec 6.9 still easily passes -- 25 years after it

was produced -- today's infinitely more stringent emissions specifications in states such as California and Oregon, which have among the tightest standards in the country and world!

This article provides an overview and explanation of the US-spec 6.9's emissions system on a component-by-component basis. The emissions system consists of the following major components and subsystems: an exhaust-gas recirculation (EGR) system, exhaust pressure transducer, an afterburning ("smog pump") system, twin catalytic converters placed well down from the exhaust manifolds, a thermo-vacuum valve, and a complex fuel evaporation control system.

Let's examine these systems:

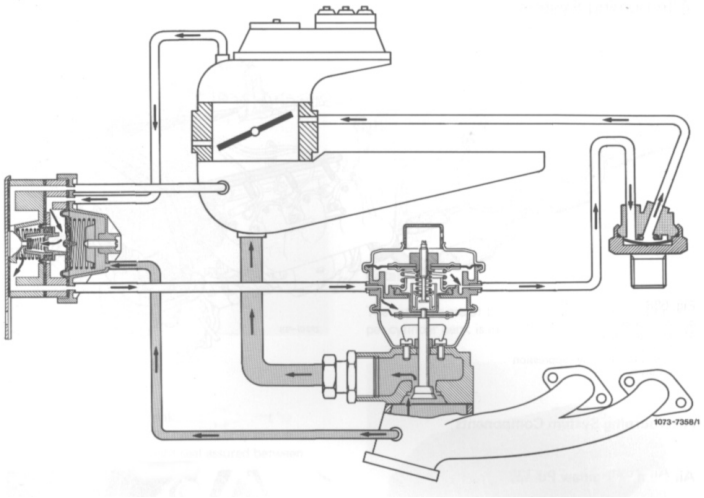
Exhaust Gas Recirculation (EGR). When the 6.9 engine coolant reaches a temperature of 104F, the EGR valve opens, piping exhaust gas from the exhaust manifold back to the intake manifold for reintroduction into the system. An effective EGR system reduces nitric oxide emissions by cooling the engine's combustion chambers; a side benefit is that the probability of pinging or detonation is reduced. This action is performed during acceleration, part-throttle operations and when the car transitions to a "coasting" mode.



The system is controlled by a number of factors, including throttle position, intake manifold vacuum, and the exhaust back-pressure in the exhaust manifold. The system consists of the EGR valve mounted on the exhaust manifold, the line running from exhaust to intake manifold, and the exhaust pressure transducer, which is discussed next.

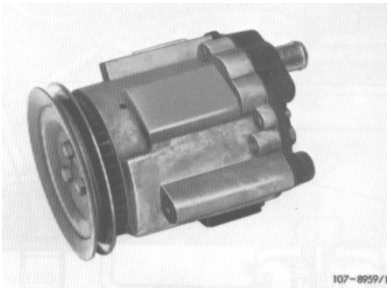
Exhaust Pressure Transducer. This is a three-chamber valve that is divided by two movable diaphragms which are connected by a tubular shaft. The purpose of the exhaust pressure transducer is to control the complex ducting and valves that permit the flow of exhaust gas out of the exhaust manifold through the EGR valve.

The exhaust pressure transducer is controlled largely by exhaust back-pressure, resulting in a wide-open EGR valve when exhaust back-pressure is high (for example, under acceleration) or a reduction in EGR valve flow when back-pressure decreases. During



steady driving (say on the freeway), the exhaust pressure transducer maintains the EGR valve flow in a steady state. Also, the exhaust pressure transducer prohibits operation of the EGR valve at temperatures below 104F (via a signal from a thremo-vacuum valve); while coasting; while idling; and during full-throttle acceleration.

Air (Smog) Pump. Mercedes-Benz introduced belt-driven smog pumps on its cars in the early-mid 1970s. This belt-driven pump as found on the 6.9 takes in outside air and directly injects it into the intake air at the 6.9's cylinder heads. This forces additional oxygen into the intake air and helps the engine burn the intake air more completely, reducing emissions. The smog pump works very well in concert with the EGR system.

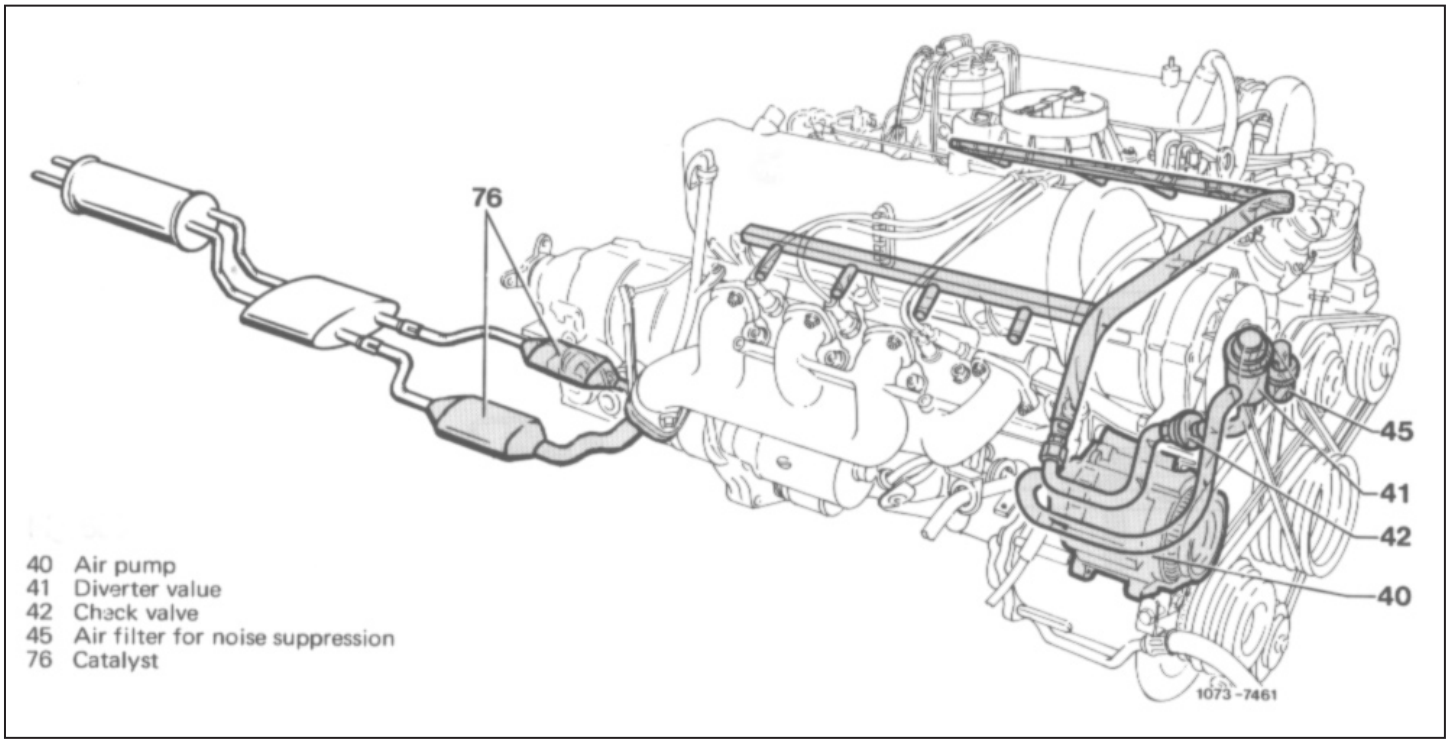


Many 6.9 owners disconnect their smog pumps by simply removing the drive belt from the pump's pulley, driven off of the 6.9 engine crankshaft. Various informal tests have shown that the 6.9 smog pump consumes around 5 HP. When connected, the air pump continually pumps air whenever the engine is operating.

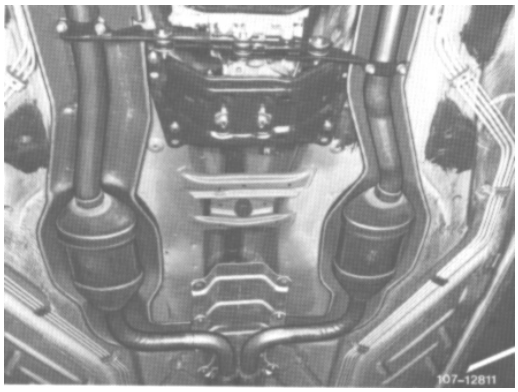
Thermo-Vacuum Valve. The 6.9's thermo-vacuum valve is mounted in the intake manifold and opens when the coolant temperature reaches 62F. It consists of a bi-metallic disc which opens and closes with the temperature. The disc rests against a rubber o-ring when closed, and snaps downward from the o-ring when the temperature reaches 62F, opening the connection.

The thermo-vacuum valve's bimetallic disc controls the flow of vacuum between its two vacuum connections, one of which runs to the throttle body (for intake air), and the other which comes from the EGR valve.

Catalytic Converters. The 6.9 exhaust system also utilizes two in-line catalytic converters, which are located under the floor of the car well aft of the engine. One catalytic converter is located on each side of the car, and they are covered by heat shields underneath the car. The catalytic converters are of a conventional design, containing an oval monolith and a ceramic honeycomb that is suspended in a wire mesh.



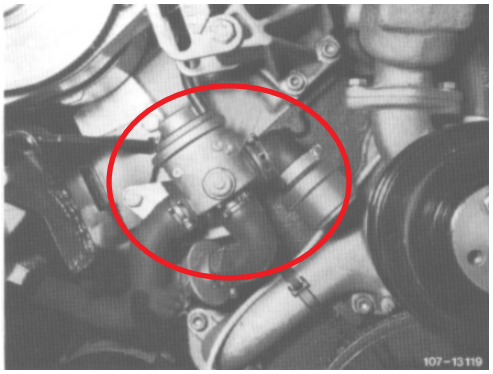
The honeycomb is coated with platinum and palladium (both rare metals), which chemically react with the exhaust gases flowing through the catalytic converters to speed the change of hydrocarbons (unburned fuel) and carbon monoxide (partially burned fuel) into water and carbon dioxide. The extra oxygen provided by air injected into the exhaust also helps to increase the efficiency of the chemical reaction. The catalytic converters must reach the proper operating temperature in order to work most effectively, which is the reason that the



Please visit IAMO web site often:
http://www.m-100.net/

6.9's exhaust is quite strong when the car is first started and operated.

Fuel Evaporation Control System. The last major component of the 6.9 emissions system is the fuel evaporation control system. This system consists of a complex cluster of valves, located just ahead of the rear wheel under the car on the driver's side. These valves include a vacuum relief valve, pressure relief valve and a safety valve, all of which collectively control the flow of gasoline vapor from the gas tank (located just behind the 6.9's rear seat) to the charcoal canister located just behind the radiator under the hood.



The charcoal canister stores the fuel vapor when the engine is not operating. The hydrocarbon molecules attach themselves to the charcoal contained in the canister. When the engine is running, the fuel vapor stored in the charcoal canister are sucked into the 6.9 throttle body when it is opened past a certain point (generally during starting and acceleration) to be burned with the normal air/fuel mixture. The 6.9's fuel tank gas cap is also an integral part of this system, because it prohibits fuel vapor from escaping from the gas tank via the fuel filler neck.

Summary

The 6.9 engine was a direct descendent of the 6.3 motor. Both engines were conceived during a time when there were few, if any concerns about their environmental impact through emissions of hydrocarbons and nitric oxides.

That Mercedes-Benz was able to successfully retrofit emissions controls to the 6.9 to the extent it did, while still maintaining excellent levels of overall tractability, drivability and performance, is somewhat of a modern miracle.

M-100 INFO 1.1

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- ☐ car shows
- ☐ care care & detailing
- ☐ technical how-tos
- ☐ social events / Meets
- ☐ Internet info

Instructions

Application for membership in the IAMO can be made using this form, or online at http://www.m-100.net/

Membership dues are $45 annually for all members. Dues include six issues of the M-100 INFO newsletter and full access to the IAMO web site.

Payment can be made on the Internet via PayPal or by sending a check or money order payable in U.S. funds to:

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