Star Motors

Specializing in 300 SEL 6.3's, 450 SEL 6.9's
& 600 Limousines

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300sel.com

Dear Valued Customer,

We at Star Motors appreciate the interest you have shown in our parts and service. Our goal is to supply quality parts at reasonable prices. Star Motors continually strives for total customer satisfaction.

Many of the parts we deal in are becoming more and more rare. Therefore, the prices provided in our brochure are intended as ballpark figures to help you estimate costs associated with your repair job or mechanical restoration projects, and are subject to change without notice. The parts and prices at the end of this brochure are not a complete list of all parts available through Star Motors. We provide a full line of parts for most Mercedes-Benz models, so please call for availability.

Because many of our parts are sold on an exchange basis, a core charge may be added to your final bill. Upon return of your original core, this charge will be refunded.

Please call our Sales and Technical Support Line for the current price, availability and/or core charges. Thank you.

Sincerely,

Neil Dubey
Owner

Contents

Quality New & Rebuilt Mercedes-Benz Parts

Specializing in 300 SEL 6.3's, 450 SEL 6.9's and 600's

Why buy from Star Motors?

Our business is dedicated to the maintenance and troubleshooting of the 300 SEL, 450 SEL and 600 Limousine. Whether you're an automotive professional or enthusiast, Star Motors has the new, rebuilt or hard-to-find components you are looking for. We have an intimate working knowledge of the W100, W109 and W116 chassis and M100 drivetrain. An extensive parts inventory, superior knowledge, and the right price ensure an excellent value for you, the customer.

300 SEL 6.3

Star Motors rebuilds virtually every mechanical component for the Mercedes-Benz 300 SEL 6.3, which was manufactured from 1968 through 1972. This classic is renowned for it impressive power and unique air suspension.

Extensive Parts Inventory
Expert Technical Support

Affordable Prices...

Star Motors

450 SEL 6.9

The 450 SEL 6.9's hydraulic suspension is one of our specialties. The 6.9 was produced from 1975 through 1980. This descendant of the 6.3 differs in its amenities and hydraulic suspension.

600 Limousine

The 600 Mercedes-Benz limousine, produced from 1964 through 1981, is the most technologically advanced vehicle of its time. Star Motors has the special tools and technical information required to meet your needs.

Extensive Inventory

We use only the appropriate parts for rebuilding and repairing your Mercedes-Benz vehicle. A large inventory of cores enables you to place an order and have the part rebuilt and shipped with minimum down time. Star Motors carries a complete line of new interior, exterior and mechanical parts, and an extensive library of technical literature and owner's manuals. We also stock more rubber and decal 6.3 parts than anyone in the USA.

Customer Service Policy

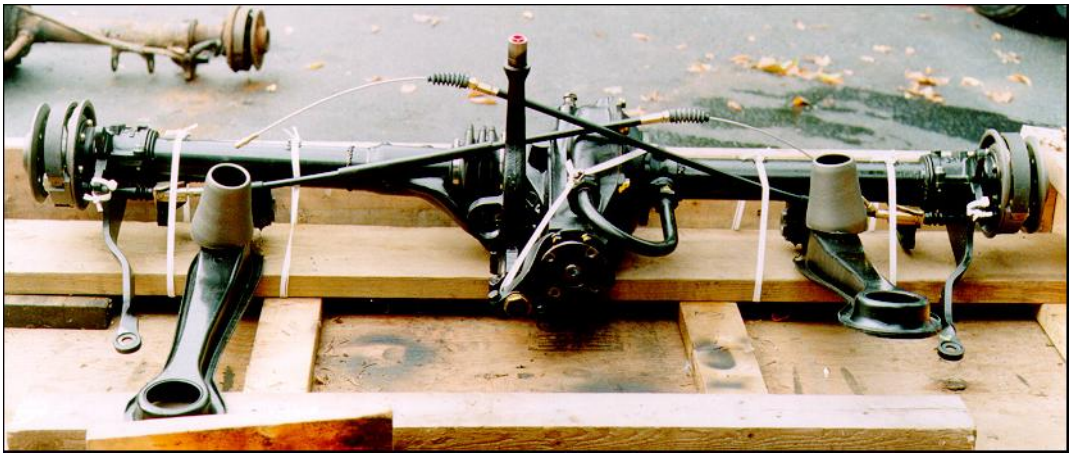
Nearly every part that you purchase from Star Motors comes with a 2-year unlimited mileage warranty. We warrantee your rebuilt axle for one-year. Electronic ignitions come with five full years of coverage.

Let our expertly trained staff ensure that your vehicle is maintained to the original standards set forth by Mercedes-Benz.

REBUILT REAR AXLES

for 300 SEL 6.3's (M100.981) and all swing axle cars

(W108, W109, W110, W111, W112 & W113)



Star Motors offers complete rebuilt rear axles for the 300 SEL 6.3 as shown here. Swing axles for other cars are similar.

Each rear axle is rebuilt to the exacting original standards. Star Motors has many satisfied customers and references can be provided upon request.

Rear Axle includes:

All new axle bearings
New sliding sleeve in homokinetic joint along with 114 – 4 mm barrel bearings New seals and clutches for limited slip differential
New differential gears Original ring and pinion gears
New wheel bearings
New center support carrier for differential (rubber/steel tube) New rubber boot

Optional items: new radius arm bushings, new radius arm mounts, new trunk mount for center support tube, calipers, rotors, and brake lines.

Freight: We offer pick up and shipping via Yellow Freight or Burlington Air Express. *Call for pricing.*

Terms and Conditions: All rear axles are warranted for 12 months, unlimited miles. In the unlikely event of a problem, call Star Motors immediately. Damaged sliding sleeves will not be warranted due to the nature of the design. Refundable core charges apply to all axles and will be refunded upon receipt of your core. The standard core charge for a rear axle is $1,500.00. Any damage to the ring gears, pinion, homokinetic joint, axle half shafts or housing carrier will be considered non-rebuildable and the core charge will be prorated.

Note: For all vehicles please provide engine number and chassis number.

ELIMINATE POINTS!

With an Electronic Ignition

Star Motors offers a modified late model Mercedes-Benz electronic ignition system for 300SEL 6.3's and 600's. This system offers the latest in electronic spark control from a transistorized switching unit. The distributor is custom machined and anodized black. The coil is replaced with a high performance unit. The complete package, when installed into your 6.3 or 600, transforms the engine idle and acceleration to smooth. The only maintenance required is replacement of the cap and rotor every 50,000 miles.

This is the ultimate cure-all for the problems associated with points. For $950.00 you receive the following: ignition distributor (cap and rotor included), coil switching unit, harness, spark plug wires and a 5-year warranty. Please review the simple installation instruction that appear on the following pages.

TOOLS THAT YOU WILL NEED:

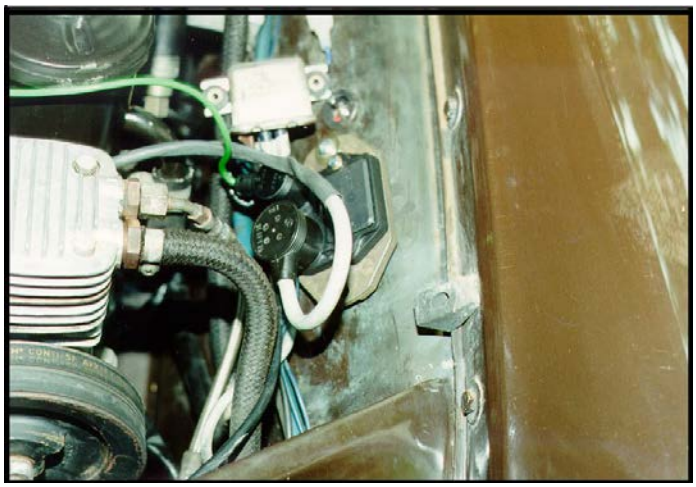
10mm open end wrench
8mm open end wrench
Brady markers or color pens
Screw drivers
Wire cutters
13mm socket
5mm Allen wrench
Lubricating grease

1) Position engine to top dead center with ignition switch. Note position of old distributor. New distributor's #1 position will be 120° clockwise from old. Remove distributor by loosening 10mm head bolt from base. Disconnect electrical wires. Pull distributor straight up. If distributor does not pull up, it is frozen. If so, heat and strike upward with a rubber mallet to loosen.

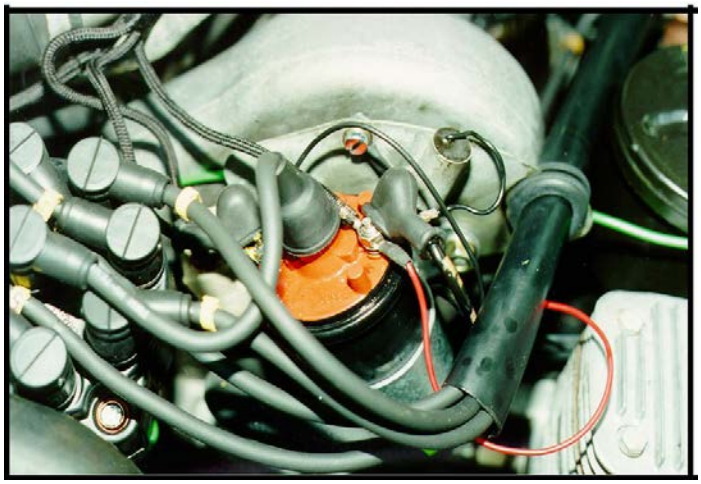
   Note: Do not strike vacuum advance units if frozen.

2) Rotor installed into # 1 firing position.

3) Remove distributor clamp from old distributor and install on new. Lubricate as shown on shaft and install into distributor housing until rotor lines up with hash mark indicating # 1 position as shown in diagrams 1 and 2.



4) Control unit is installed on the left fender. Drill holes to suil. Attach control unit and green wire.



5) Attach wires as shown. Mount ground wire to plate. Hole is pre-drilled. Red wire to terminal 15 and black wire to terminal 1. Brown wire to ground. In some cases, wires will be numbered rather than color coded.

6) After completing wiring. Start car and retime to 5° after TDC. Use wire ties to complete installation. Route wires accordingly.

High Performance Engine Modification Packages

Headers, electronic ignition and camshaft.

Star Motors has developed a package of high performance engine and chassis modi-fications to suit the true horsepower and handling enthusiast. Horsepower gains amount to 10% when using the header kit.

The electronic ignition module (all original Mercedes-Benz) improves idle and reliability by going to a pointless system. We offer porting and polishing, modified air plenum and injection pumps to bring the horsepower gain to 330 hp.

Rebuilt Engines for 300 SEL 6.3 Long Block (M100.981)

Long block includes balanced crankshaft with new 9:1 compression ratio pistons and rings
New timing chain and tensioner with slide rails
Remanufactured oil pump with new oil chain and tensioner
New pressure oil relief valve
Reconditioned oil pan without cracks New main and rod bearings
New front and rear seals
Connecting rods shot peened and fluxed for stress cracks
Cylinder heads with new valve guides (updated version)
Seals (updated version) with head gaskets
Intake and exhaust valves with stems correctly matched
Valve seats triple angle cut to improve flow Heads and block pressure tested
Water distributors
Rocker arms and shims correctly matched
Rocker ball studs matched to correct torque specification
Camshaft oiler tubes
Camshaft towers

All head bolts are yellow zinc chromate along with rockers. All specifications are held to factory tolerances. Woodruf keys are installed to correct any timing deviations. Price upon request.

Optional High Performance Engine for 300 SEL 6.3, Long Block

Custom 9:1 compression ratio pistons
Heads, intake and exhaust port matched, extrude honed and *Superflow* tested
High performance camshaft with longer duration and 1mm extra lift for 10% improved flow
Custom headers for improved torque and 10% increase in flow
Intake and exhaust
headers Electronic ignition

Total improvement in horsepower and torque is 350 SAE net hp and 500 FT-lb. of torque. No modifications are required to the driveline. Total price available upon request. Price does not include required custom stainless steel exhaust front pipes or any accessories.

Complete Engine with All Accessories Ready to Install (300 SEL 6.3 Only)

Rebuilt engine with 9:1 compression ratio
Rebuilt water pump
Rebuilt air compressor pump with Mahle rings
Rebuilt power steering pump
Rebuilt distributor with cap, rotor and points
New factory correct wires with numbers and in correct loom
Rebuilt injection pump with injectors
Rebuilt cold start valves
New injector blocks and gaskets
New belts
Remanufactured alternator (correct 60 amp)
Mercedes-Benz original fuel, radiator and water hoses
Norma clamps
York a/c compressor with clutch*
Rebuilt idler pulley for a/c with new bearing

All rebuilt items are fully tested. All items are yellow zinc chromate to correct finish and painted to factory specs. A detailed diagram of the complete motor can be provided upon request. The total package price is available upon request. This motor is a direct bolt-in and requires very little adjustment. Items can be deleted or added accordingly to match customers needs. *A custom modified rotary compressor with a/c hoses and bracket can be purchased, price available upon request.

Complete Engine with All Accessories Ready to Install (600 Only)

Rebuilt engine with 9:1 compression ratio
Rebuilt water pump
Rebuilt air compressor pump with Mahle rings
Rebuilt power steering pump
Rebuilt distributor with cap, rotor and points
New factory correct wires with numbers and in correct loom
Rebuilt injection pump with injectors Rebuilt cold start valves (absolutely necessary)
New injector blocks and gaskets
New belts
Remanufactured alternator (correct 35 amp)
Rebuilt hydraulic pump
Rebuilt starter
Mercedes-Benz original fuel, radiator and water hoses
Norma clamps
York a/c compressor with clutch
Rebuilt idler pulley for a/c with new bearing

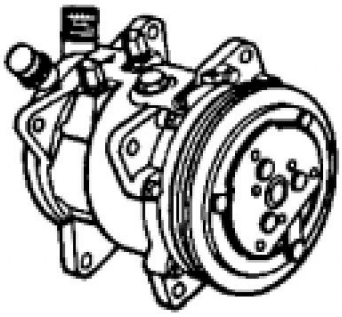
All rebuilt items are thoroughly tested. All items are yellow zinc chromate to correct finish and painted to factory specs. A detailed diagram of the complete motor can be provided upon request. The total package price is $14,000.00 plus shipping. This motor is a direct bolt-in and requires very little adjustment. Items can be deleted or added accordingly to match customers needs.

KEEP COOL

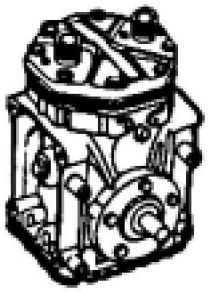
Air Conditioning Conversion Kit

for the 300 SEL 6.3

Take the sizzle out of summer with the Sanden 508.



Sanden Rotary Compressor
(7 lbs. lighter than original York Compressor)



Original York Compressor

Star Motors now offers an air conditioning conversion kit that utilizes a modified rotary compressor. The Sanden 508 compressor is a rotary compressor with approximately 35% higher operating efficiency than the original York compressor.

This kit improves the vibration and cooling problems associated with York compressors originally specified for the 300 SEL 6.3. The rotary design of the Sanden 508 allows the compressor to cool your car effectively.

OUR KIT INCLUDES THE FOLLOWING FOR A PERFECT FIT:

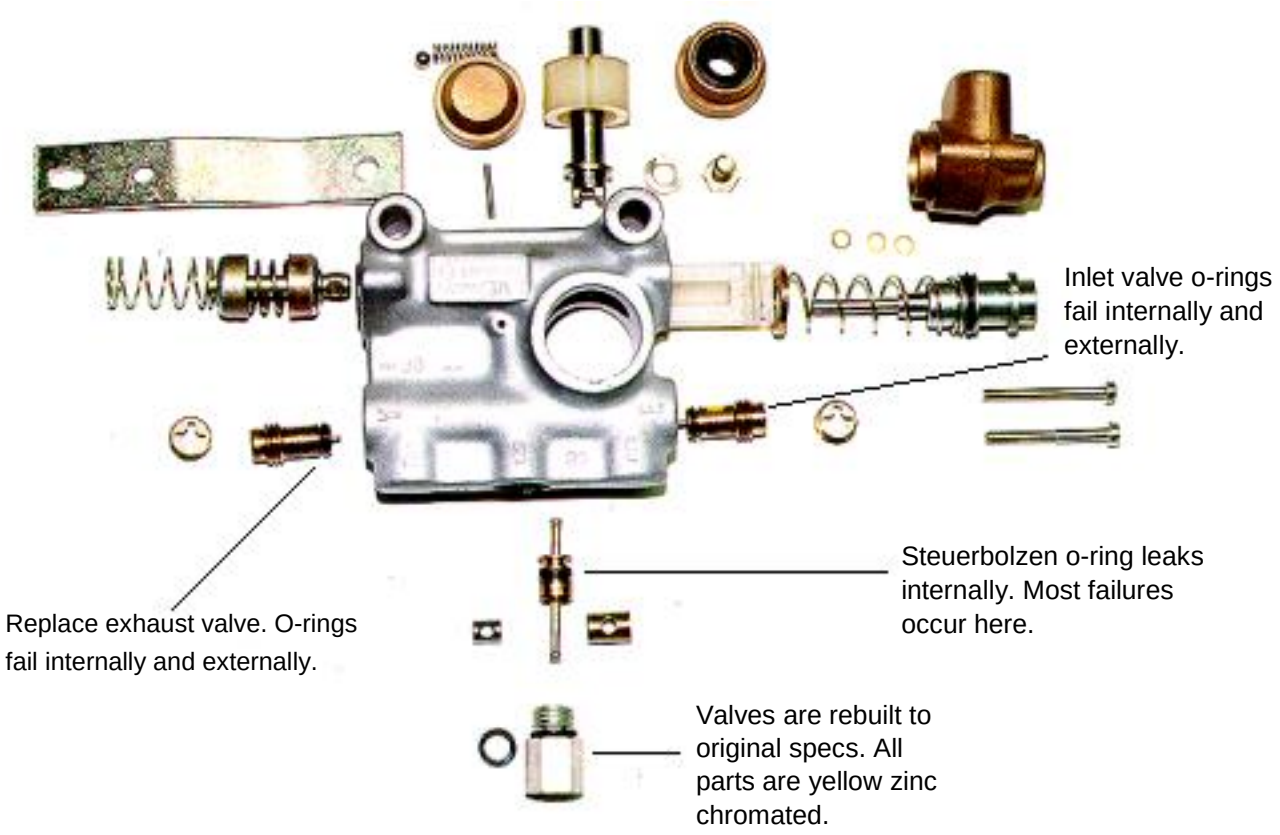
New Sanden 508 compressor
Receiver drier
Mounting bracket
3 hoses (#6, #8 and #10)
Expansion valve
Compression fitting crush seals

Please specify chassis when ordering. This conversion kit costs $2,000.00 and comes with a two-year warranty.

TROUBLE SHOOTING

THE AIR SUSPENSION

Most air suspension problems are directly related to the leveling valves and main valve. Generally, most of the other components rarely fail. This trouble-shooting guide is comprehensive in its approach to trouble shooting. Please follow the procedures to diagnose the problems in conjunction with the Mercedes-Benz workshop manuals and figures provided with this guide.



Exploded view of leveling valve.

Leak Checking Procedures

Air suspension lines rarely leak unless they are rusted. Air bags rarely leak unless the cord is showing and they are in poor physical condition. Ninety-five percent of the leaks are in the leveling valves and main valve. The non-return valve is another area of concern. It should be replaced if the leveling valves are replaced. Valves are made with internal rubber parts of 70 durometer buna nitrile composition. Most of the leveling valves failure occur in the center region of the 2 mm pin holding the internal part called the steuerbolzen (*German*). A quick leak test can be made by placing soapy water around this area and watching the air escape (sometimes the leak may be infinitesimal and may not be detected). If this leaking occurs, the valve must be replaced because pressurized air is escaping to atmospheric air. Soapy water can be used to check the non-return valve once the valve has been disconnected from the high-pressure com-pressor line. Just add the water to the valve and see if any bubbles form. None should be present. See the attachment for a general description of the air suspension system.

PROBLEM	CAUSE	REMEDY
White or red warning lamp lights up and never goes away, but car does not lose air in 24-hour period (even after valves have been replaced).	Push pull button or lever not in correct position.	Adjust cable or push lever or button in correct position.
	Electric pressure indicator on main valve defective or leaking.	Replace switch.
	Leaking air line	Replace line and check for leaks.
	Air compressor is defective and not reaching the minimum pressure of 105 psi to shut-off the electric switch.	Drain reservoir tank and see if excessive condensate is present of oil and water. Then place car into high level position. If the car fails to go up to correct height replace unit with rebuilt compressor because the rings are worn.
White or red warning light appears over a short period (1 hour or more) when car is not running.	Supply tank leak or valves leaking.	Check for leaks in the supply system as discussed in the work shop manual. Replace level valves and main valve. Replace drain valve. Replace filling valve. Check fittings going to main valve. Replace non-return valve.
Car level too low in front on both sides.	Serious leak in both front suspension valves.	Replace both front and right leveling valves.
	The car continues to drop after replacing valves and the main valve does not leak.	Screw in pressure reducing screw on main valve 2 turns clockwise to see if car raises up with increased supply pressure. If it does not raise up, replace the main valve unit because the diaphragm ring has a slow leak or the one-way feed valve is defective internally (assuming the supply pressure in the tank is at least 150 psi or more).
Car level low on either left or right side, but not on both sides.	This definitely indicates a defective leveling valve.	Replace leveling valve.
Car level in front but low in rear.	Defective rear valve.	Replace rear valve.
Car is too low in front and rear.	All leveling valves are defective	Replace level valves and main valve as a set.
Car appears to be tilted in the rear.	Front valve is leaking with the left or right causing the rear suspension to compensate.	Replace front valves.
Car level is too low in front on both sides.	Serious leak at main valve. Because the main valve supplies regulated front valve air pressure though the pressure reducing valve at 140 psi to 195 psi, the pressure is below minimum.	This problem rarely occurs. Increase the main valve regulating pressure by screwing set screw 2 full revolutions. If nothing happens, reset to original position and replace main valve and front leveling valves.
Hissing noise from the main valve after driving the care.	Air is exhausting from the system.	This is a normal function of self leveling.
Car fails to reach high level after the pull knob or lever is moved into the high position.	Low supply pressure due to weak compressor rings or cracked valve	Replace compressor.

IMPORTANT NOTE TO OWNERS OF 300SE EARLY STYLE AIR SUSPENSION CARS. In order to ensure proper longevity and warranty for the air suspension valves of the LF/VNB type, the following must be done: (Please reference the air suspension diagrams that follow.)

Do not let the valve become covered with oil, because this will deteriorate the rubber center pieces.

The main valve (Part # LF/EVA1A1) and the supply tank holding valve, located on the air suspension supply tank in the left inner fender well, should be checked for leaks. Leaks may cause the supply pressure to drop and the car to lose front or rear pressure. This will put undue stress on the center rubber pieces of the leveling valves. The best measure to prevent this is to replace the supply check valve and the main valve.

The air suspension supply tank should be checked for oil condensate build up. No oil should be displaced when draining the tank. Since the 300SE type is fuel injected, gas may enter into the oil through a leaky injection pump and condense in the supply tank if the rings on the air compressor are worn. This will accelerate the wear of the air valve. Also check the air compressor air cleaner to determine if it is properly mounted and does not inhale engine fumes (A modification was made at the factory for this.)

In cold climates the ethyl alcohol chamber must be full to assure that the valves do not freeze and become inoperative.

It is not uncommon for the rubber center pieces to leak slightly. Mercedes-Benz allows a 1 ATM (14.7 psi) pressure loss over a 24-hour period.

If all the suspension items are OK, you should experience trouble-free maintenance for years to come.

AN IMPORTANT NOTE TO OWNERS OF 300SEL LATE STYLE AIR SUSPENSION CARS. In order to ensure proper longevity and warranty for the air suspension valves of the LF/VNC type the following must be done: (Please reference the air suspension diagram included on Pneumatic Cushioning, Type 300SEL.)

Your air suspension is made of 100’s of individual rubber\brass\stainless steel components. In order for you to insure years of trouble free performance please review the checklist.

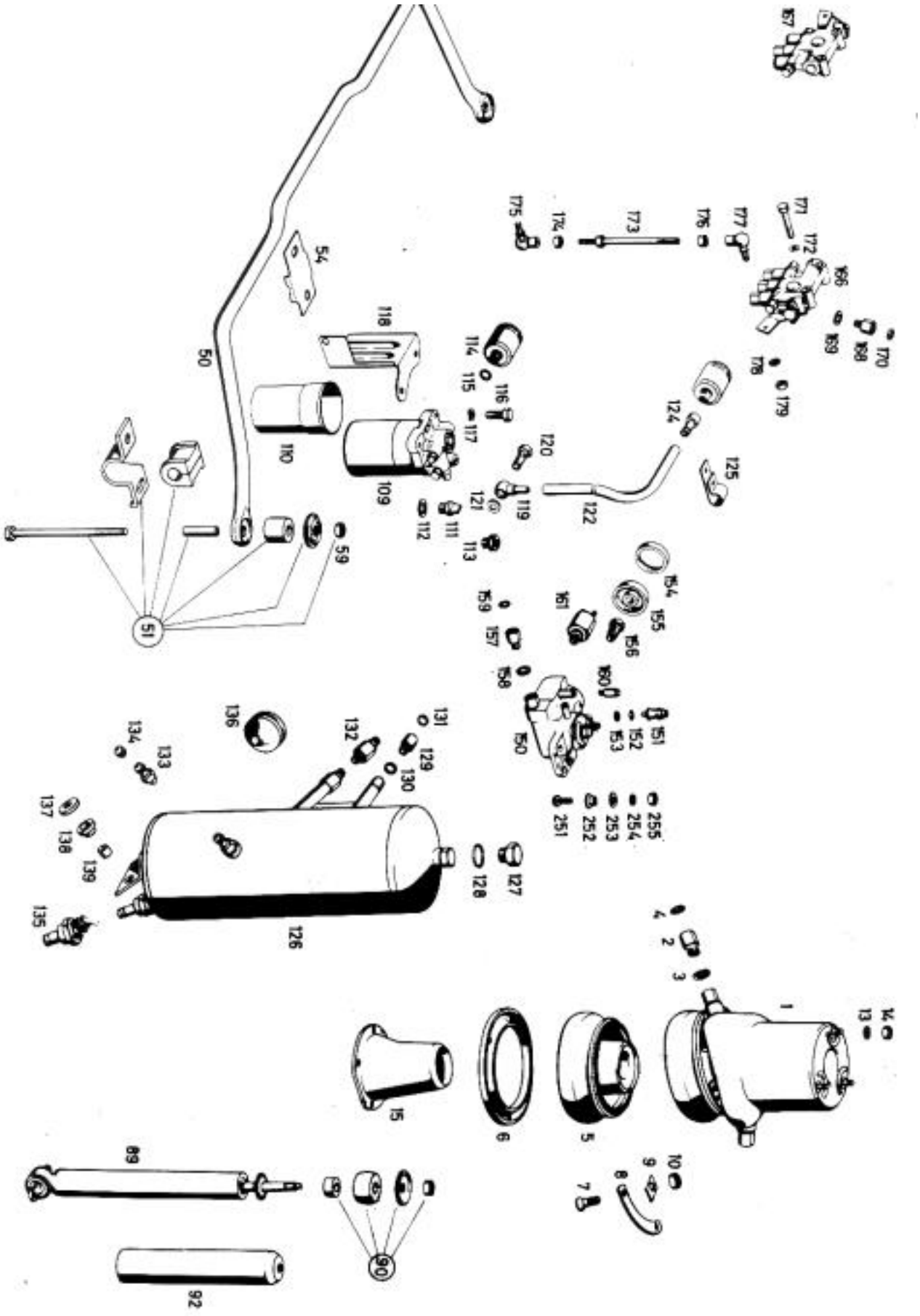
The main valve, p.n. LF/EVA1A1,2,3,4,5, 0501001004 AND 005, should be checked for leaks if you have not already replaced this valve. The air suspension supply tank in the left inner fender (ITEM 33 in diagram) should be checked, since it is quite common for this valve to fail. If leaks are apparent this may cause the supply pressure to drop and the car to lose front or rear pres-sure (the warning light will come on when pressures below 7 ATM.

The best measure to prevent this is to replace the supply check valve (ITEM 33) and the main valve. Air lines and fittings rarely leak, the soap bubble test is not of significance in most cases. External air leaks can generally be heard by the human ear. The main sup-ply tank also has a filling valve and drain valve. These must be checked for leaks when installing a new valve set. These valves rarely leak, but in the events of complaints please check these for leaks.

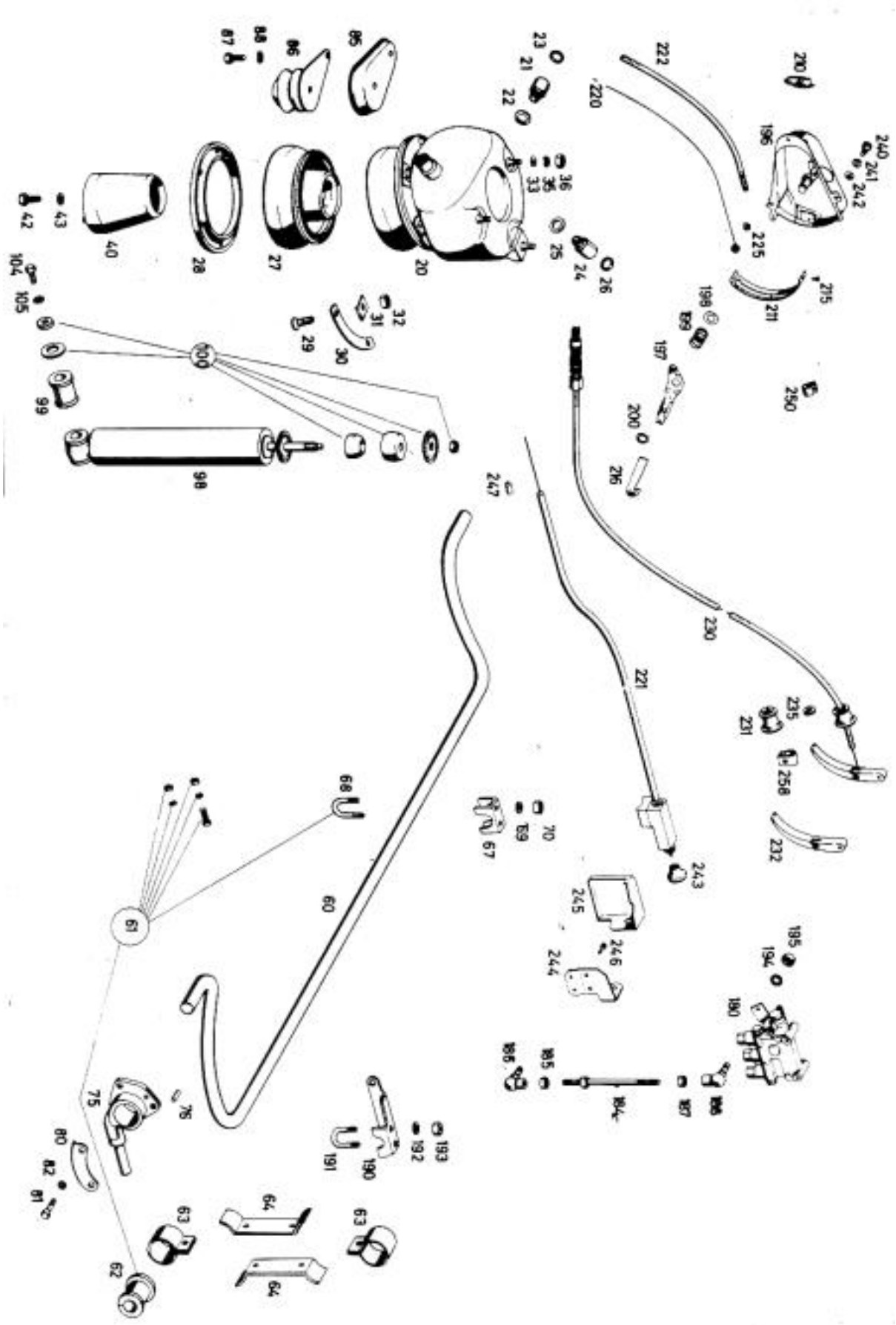
Another area for leaks to occur is the pressure switch on the main valve. These rarely leak but in the event of a complaint, please check the switch for cracks.

The air suspension supply tank should be checked for oil condensate build up, no oil should be displaced when draining the tank. Since the 300SEL type is fuel injected, gas may enter into the oil through a leaky injection pump and condense in the supply tank if the rings on the air compressor are worn. This will accelerate the wear of the air valve.

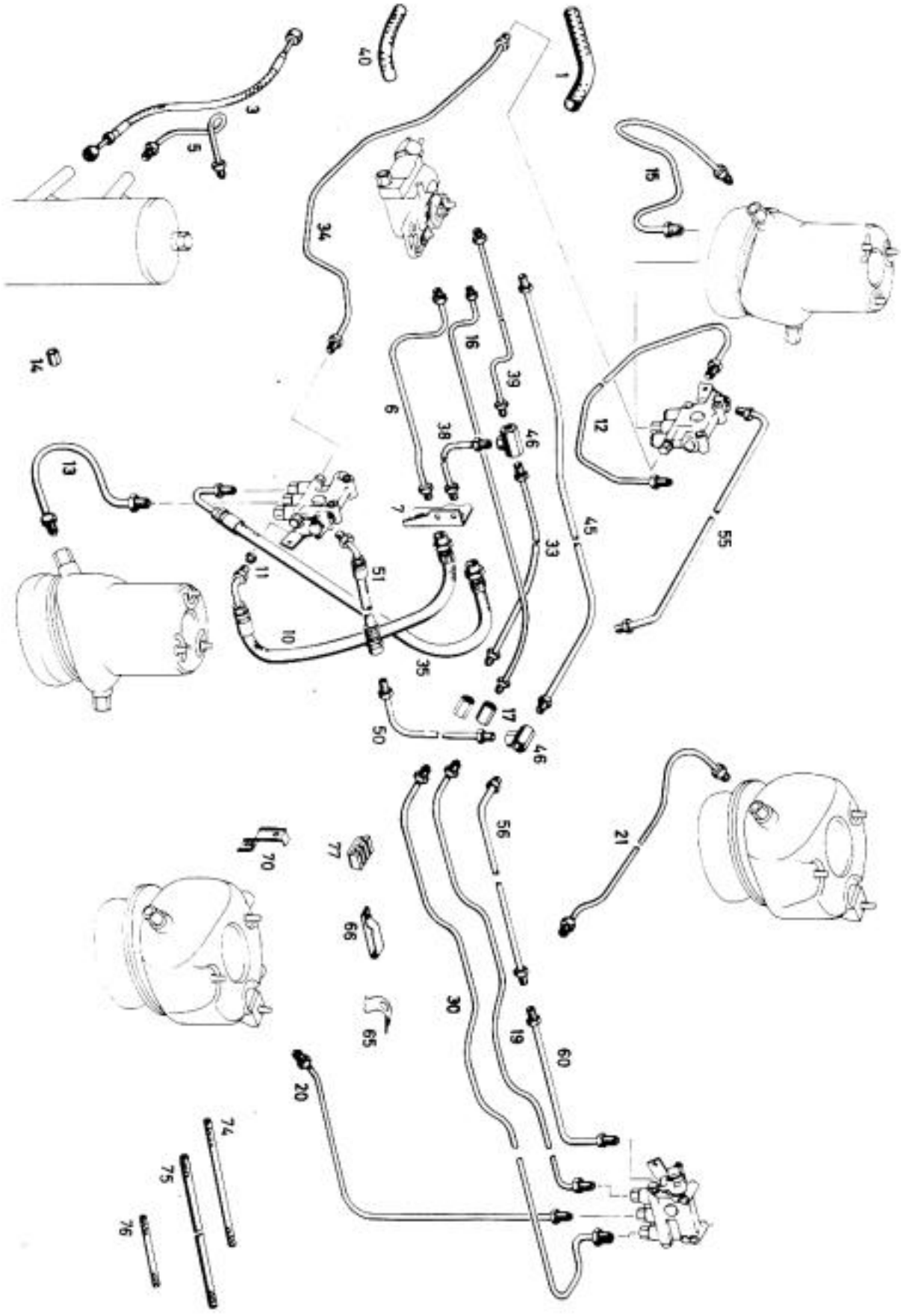
Front Air Suspension Parts, Late-Style Valves



Rear Air Suspension Parts, Late-Style Valves

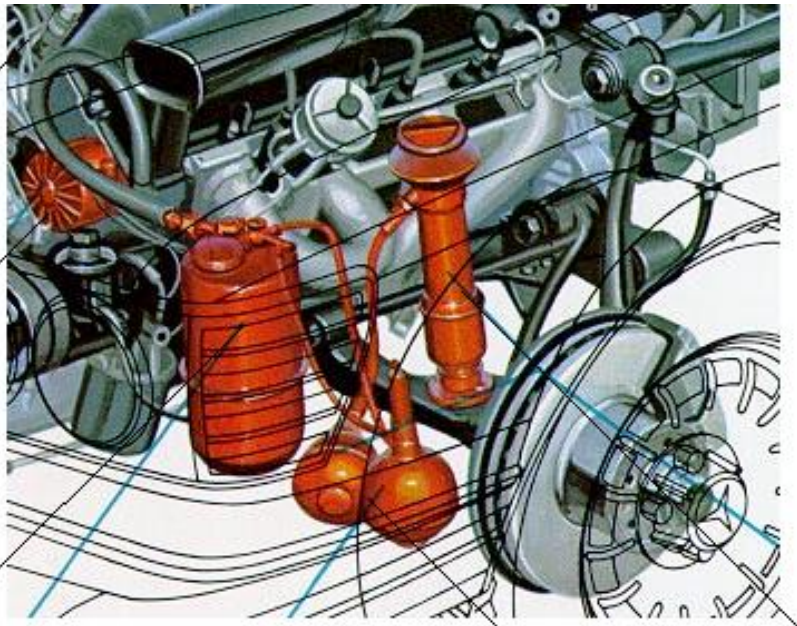


Front and Rear Suspension Parts, Late-Style Valves



TROUBLE SHOOTING

THE HYDRAULIC SUSPENSION



Left side of a 450SEL 6.9 (W126 cars are similar.)

Please review the following information for an understanding of the Mercedes-Benz hydraulic system. For additional information, see the following sections located in their respective service manuals.

- Section 32-501-32-671 for W123 & W126 USA specification cars
- Section 32-515-32-675 for European cars
- Section 32.4-600/2 and 600/3 for a system schematic

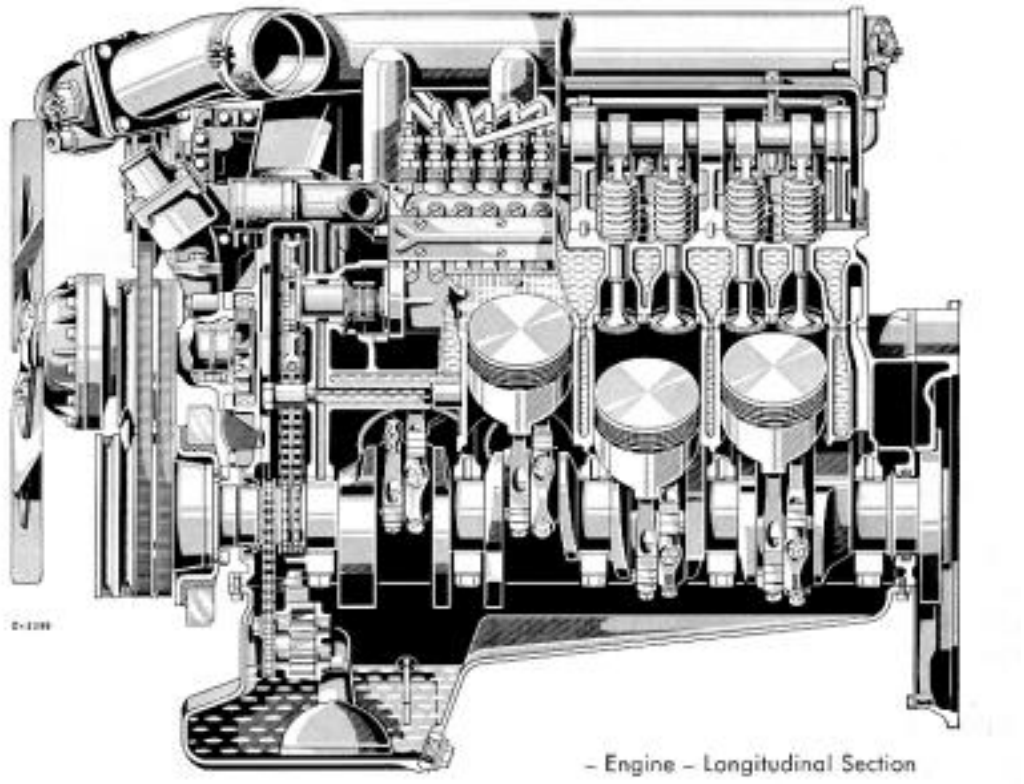
This simple troubleshooting guide is designed to pinpoint about 99% of the problems associated with hydraulic suspensions. Most of the problems occur with the valves or struts. The hydraulic pump rarely fails. Struts and valves have a service life of approximately 10 years.

PROBLEM	CAUSE	REMEDY
Car does not lose level within 24 hours, but warning lamp is constantly on (even after struts and shocks have been replaced).	Push-pull button or lever is not in correct position.	Adjust cable, push lever or button to correct position.
	Electric pressure indicator on accumulator is defective or leaking.	Replace switch.
	Line to central reservoir or other line is leaking.	Replace line and check for leaks.
	Hydraulic pump is defective. Not reaching the minimum pressure shut-off the electric switch.	Replace pump (32-640).
Warning light appears after shutting off the car.	System pressure is adequate while driving. Pressure is lost when car is shut off due to struts or valves leaking.	First check for struts leaking per section 32.4-515/1. If struts are leaking externally or internally, replace struts. If struts are OK, replace leveling valves.
Car level is too low in front left and right sides.	Front struts or valve are defective.	First check for struts leaking per section 32.4-515/1. If struts are leaking externally or internally, replace struts. If struts are OK, replace leveling valves.
Car is too low in rear. Front level is OK.	Valve or rear struts are defective.	First check for struts leaking per section 32.4-515/1. If struts are leaking externally or internally, replace struts. If struts are OK, replace leveling valves.
Car level equally too low in front and rear.	Struts or valves are defective.	First check for struts leaking per section 32.4-515/1. If struts are leaking externally or internally, replace struts. If struts are OK, replace leveling valves.
Car level is unequal on one side.	St rut is defective.	Replace defective strut.
Car ride is bouncy in front or rear.	All accumulators are defective.	Replace the accumulators.
Hydraulic fluid is black.	Filter is clogged on pressure regulator.	Replace the filter.
	Hydraulic flexible lines to accumulator are worn.	Hydraulic lines are made with black rubber and are internally degrading. Replace the lines.
Car goes to high level automatically in front or rear.	Level valve in front or rear is defective.	Replace the valve.
Car fails to reach high level after the pull knob or lever is moved into the high position.	There is low supply pressure in the central reservoir.	Replace the central reservoir.
	The pressure regulator is defective.	Replace the pressure regulator.
	The cable cannot be adjusted.	Replace the cable.
	The car is a USA version.	Due to federal bumper height regulations, the high level option was disabled on USA cars.
Car lowers while being driven.	The pressure regulator is defective.	Replace the pressure regulator.

COMMON ITEMS TO CHECK FOR

300SEL 6.3, 450SEL 6.9 AND 600

This is a list of common mechanical items that wear out on the 300SEL 6.3, 450SEL 6.9 and 600. When purchasing a car, making a trip, or having the vehicle serviced please use this list. Items marked in italics are critical to check as they are generally neglected. All the figure descriptions are from Mercedes Benz publication: Catalog 12 802, Type 300SEL-300SEL 3.5-300SEL 6.3, Model 109-Catalog “A”-1971 U.S. Version.



– Engine – Longitudinal Section

ENGINE

1. Fan belts. Check all fan belts, especially on the 6.3. The alternator belt on the 6.3 should be checked and changed periodically.
2. *Fuel hoses.* Fuel hoses on the 6.9 rarely give problems since the system is Bosch CIS. On the 6.3 and the 600, the fuel lines are steel and cotton covered low-pressure hoses. The hose that runs from the fuel filter to the pressure damper is notorious for chafing. The fuel line from the rear pressure damper mounted on the engine block to the steel return line is susceptible to engine heat and deteriorates rapidly with age. **FIRE HAZARD**. Replace!
3. *Timing chain and tensioner.* A loose tensioner or chain can be heard rattling. Change the pair every 50,000 miles.
4. Injection pump. Check if any oil is present in the V-block where the injection pump resides. Leaking oil or an oil-flooded V-block can cause an engine fire. The injection pump must be rebuilt.

5. Cold start valves. Leaking cold start valves are a very common problem on the 6.3 and the 600. Generally the O-ring must be replaced. But, sometimes the Bakelite on the solenoid is cracked and must be replaced.

6. Fuel filter. Replace the fuel filter on the 6.3 and the 600 every 6,000 miles. CHECK RUBBER SEALS FOR LEAK AND REPLACE ALUMINUM CRUSH WASHER. Clogged fuel filters can cause the car to misfire. On the 6.9 change every 30,000 miles.

7. Fuel pump. The 6.3's and the 600's late-style fuel pumps (distinguished by red and brown terminal ends) can pump only 4 liters per minute. If the pump fails to pump less than this a drivability problem may occur. This may be very hard to diagnose. The early-style pump delivers 6 liters per minute. Change pump to early style. On the 6.,9 replace the check valve on the fuel pump. This will eliminate hard starting problems associated with CIS cars.

8. Warm-up regulator. On the 6.9, the warm-up regulator on the CIS system may malfunction, causing a rough idle during warm up. Replace unit if defective.

9. Thermo time switch and vapor lock line. On the 6.3 and the 600, if hard starting is encoun-tered due to high temperature, install the thermo time relay which will activate the cold start valves for one additional second. Install the vapor lock return feed with t fitting. This can only be done on the later-style fuel pumps.

10. Camshaft. Camshaft wear can be heard as a pronounced valve train clatter. If the valves cannot be adjusted, look for squared-off cam lobes or grooved camshafts. Repair camshaft. On the 6.9's hydraulic valve lifter, failure is more common.

11. Oil pan. See if the oil pan plug is correct and if any cracks are present. On the 6.9, the oil canister is prone to rusting out.

12. Radiator. Check the radiator for leaks and oil contamination. The oil is generally from a leaking head gasket. Check radiator core tubes for calcification.

13. Water pump. Check for leaks through the weep hole. Replace if leaking.

14. *Oil feed line to compressor.* This is the most overlooked part on the 6.3 and the 600. The hose is a braided low pressure hose and chaffs itself against the alternator housing. The hose, if ruptured, can cause damage to the engine. The Mercedes-Benz replacement hose does not fit properly and is a low-pressure rubber hose. Replace this hose with a steel braided hose. Page 82 item 92.

15. Upper and lower oil cooler hose. On the 6.3 and the 600, these hoses must be replaced when leaks are present. The lower hose on the 6.3 is notorious for rubbing against the alternator adjusting arm and wearing through.

16. Battery trays. They are notorious for rusting out. Replace.

17. Positive lead from battery to starter. This wire runs along the right-hand side of the block and should be changed because heat deterioration is present.

18. Cruise control. The 6.3 and the 600 never had them. Throw them away. Check the 6.9's vacuum lines.

19. Accelerator linkages. Change the bushings as required and lubricate.

STEERING AND SUSPENSION

1. Air compressor and power steering pumps. The 6.3's and the 600's P/S pump is connected to the air compressor pump. Check for oil contamination in the reservoir of the P/S pump. The oil is forced from the compressor through the radial seal ring. Replace. Page 77 item 55.

2. *Steering gearbox.* The three mounting holes are prone to loosening, causing the gearbox to move against the frame support and crack the frame. Repairing it can only be done by welding or adding a steel plate. On all models, make sure the three mounting holes on the left frame support are tightened every 10,000 miles. Page 166 item 2.

3. Air suspension and hydraulic suspension. These are covered in another handout. In general, check for leaks and excessive cracks in the air bags. In the hydraulic suspension, check for strut leaks and defective accumulators.

4. King pins. Kingpins are used on the 6.3 and must be inspected every 50,000 miles. Mercedes-Benz allows .020" of axial play on kingpins before servicing. Check the play. Replace if a clanking noise is present.

5. *Lower and upper control arms.* On the 6.3, check the threaded portion of the upper and lower inner control arms for cracks. This is a very common problem for this car. Tighten the nuts every 10,000 miles to avoid this problem. Page 131 items 60 and 80.

DRIVELINE

1. Transmission center support. Check the transmission center support on all cars. A loose or mis-adjusted center support will cause the steering gearbox to knock against the frame. Replace if worn.

2. *Flex disk.* Check for eccentric wear or deformation. The is a very common wear item and when worn can cause driveline vibration. Page 152 item 52.

3. Center support and center carrier bearing. Replace these when changing the flex disk. Pushing up on drive shaft at support can check these. Replace if there is excessive play.

4. U-joints. These are non-serviceable. If a clanking from the rear is heard, especially in reverse, replace with a re-manufactured driveshaft.

5. Rear axle. The 600's and 6.9's rarely give problems in this area except for the 6.9's half shaft. The axle half-shaft bearings are prone to wear. A clicking noise will be heard in such a case. Replace with re-manufactured unit.

6. Rear end. The 6.3's rear end is quite durable if prudent care is taken, i.e. no brake torquing, neutral drops, reverse to forward slams, etc. A common way to destroy a 6.3's rear end is to cause it to axle tramp. This means that the wheel hops on the surface causing a violent loading and unloading on the Homokinetic joint on the swing axle. This in turns disintegrates the sliding sleeve or the slip joint. I recommend changing or inspecting the slip joint every 75,000. Other parts that are prone to wear and may cause vibration or clunking noise are the rubber wear items as pointed out. Page 133, items: 150, 111, 159, 130 and 121.

7. Rear axle brake hold support bearings. These are on the 600 and the 6.3'. They will cause a vibration, especially in reverse, when worn out or not properly lubricated. To eliminate this problem, use custom-made hold down bearings with Teflon shims. Page 137 item 66.

8. Inner wheel axle bearings. Generally when worn, the wheel emanates a groaning or growling noise. Replace.

BRAKES

1. Brake master cylinder and booster. Check for leaks and soft pedal pads. On the 6.3, due to age, you may experience no brakes until vacuum pressure is built up. If this occurs, replace the vacuum line from the brake booster, because it may contain a failed check valve. If this does not work, replace the brake booster.

2. *Front flexible brakes lines*. This is only for the 6.3. The front brake line for the 6.3 is a special line and must be of correct length (470 mm). This is to ensure that if the car is placed in high level that the line does not stretch. Most 6.3's no longer have this line. Re-place the line with part number 001-428-03-35.

AIR CONDITIONING AND CLIMATE CONTROL

1. Air conditioning. Charge the A/C with R12 and check for leaks. If hoses must be replaced, use barrier hose or Aeroquip Red (original equipment) only. Do not worry about R134a conversion because the system is already compliant and the hose fitting ends would have to be changed. R134a will decrease the cooling temperatures 6 to 8 degrees Fahrenheit. This is totally unacceptable in the 6.3 and the 6.9 evaporators.

2. A/C pulleys. The 6.9's pulley should be checked for play. The 6.3's and the 600's pulleys must have the radial sealed bearing changed every 50,000 miles. Check the cast aluminum-mounting arm for wear and cracks.

3. A/C servo. This is on the 6.9 and is notorious for cracking at the head, causing radiator fluid leaks or the inability to shut off heat.

4. Push button assembly and amplifier. Replace if irregular heat conditions occur after the servo has been replaced.

5. Heater levers. On the 6.3 only. These are prone to cracking. The original European levers were made of hard plastic instead of the hard rubber used on the USA versions. The major-ity of the levers crack because the cables start to bind. They must be lubricated and checked for binding every 100,000 miles. Replace cracked levers with originals, and cables with Teflon coated housings.

AUTOMATIC TRANSMISSION

In general, the transmissions of all the cars are well built. Leaks are prone around the input shaft and oil pan gasket. The fluid coupler on the 6.3 can leak form the hub or the large O-ring. Another common problem is the car's inability to have a passing gear. Adjusting the kickdown linkage through the right hand passenger compartment on the 6.3 can solve this. Adjusting the modulator can soften hard shifting. Long shift patterns or flaring may be adjusted through the combination of the kickdown solenoid linkage and modulator. Delayed shifting can be caused by a loose ball bearing in the centrifugal governor. This can be remedied by removing the rear cover and replacing the governor. On cold starting, the car's delayed forward or reverse engagement indicates that the steel oil seal rings on the primary input shaft are worn causing fluid to escape the fluid coupler and fill back into the transmission cavity. The transmission must be rebuilt.

ITEMS TO BRING ON A TRIP

The 6.3, 6.9 and 600 are fine touring automobiles that need considerably more care than the average vehicle. If properly maintained, these cars can give years of reliable service. The key is maintenance. If traveling in either the 6.3 or 6.9, please bring the following: (I exclude the 600 because it comes with everything except its own mechanic.)

1. Belts. Always bring an extra set of belts.
2. Hydraulic fluid. On the 6.9, bring a liter of hydraulic fluid.
3. Flat jack. Bring a small portable flat jack for all cars. This is especially helpfully on air cars. Use the wheel chocks proved with vehicle (They are kept in between the spare tire.). Follow the jacking instructions provided in the owner's manual.
4. Air bags. Hydraulic and air suspension emergency buffers are nice to have. Check your air bags and suspension periodically.
5. Manuals. Always carry a spare parts picture catalog and owner's manual. These are invalu-able, because there is not a Mercedes-Benz dealership in every town.
6. Spare fuse kit. Spare fuse kits are available for the glove box. These are a must.
7. First aid kit. I have used a first aid kit three times while in a vehicle. Because the kit sits on the rear hat shelf and is exposed to heat, check it for deterioration. Kits are available in pillow form for the 6.3's and 600's.
8. Fire extinguisher. This can be mounted unobtrusively on the floor in front of the driver's seat.
9. Spare gas can. Use a Mercedes-Benz gas can. They are fairly inexpensive and bullet proof.
10. Extra bulbs. Keep one common BA series bulb in the glove box.

"Common Items to Check For" prepared by Neil Dubey and Randy Durrance.

Figure 1: Oil Filter Housing

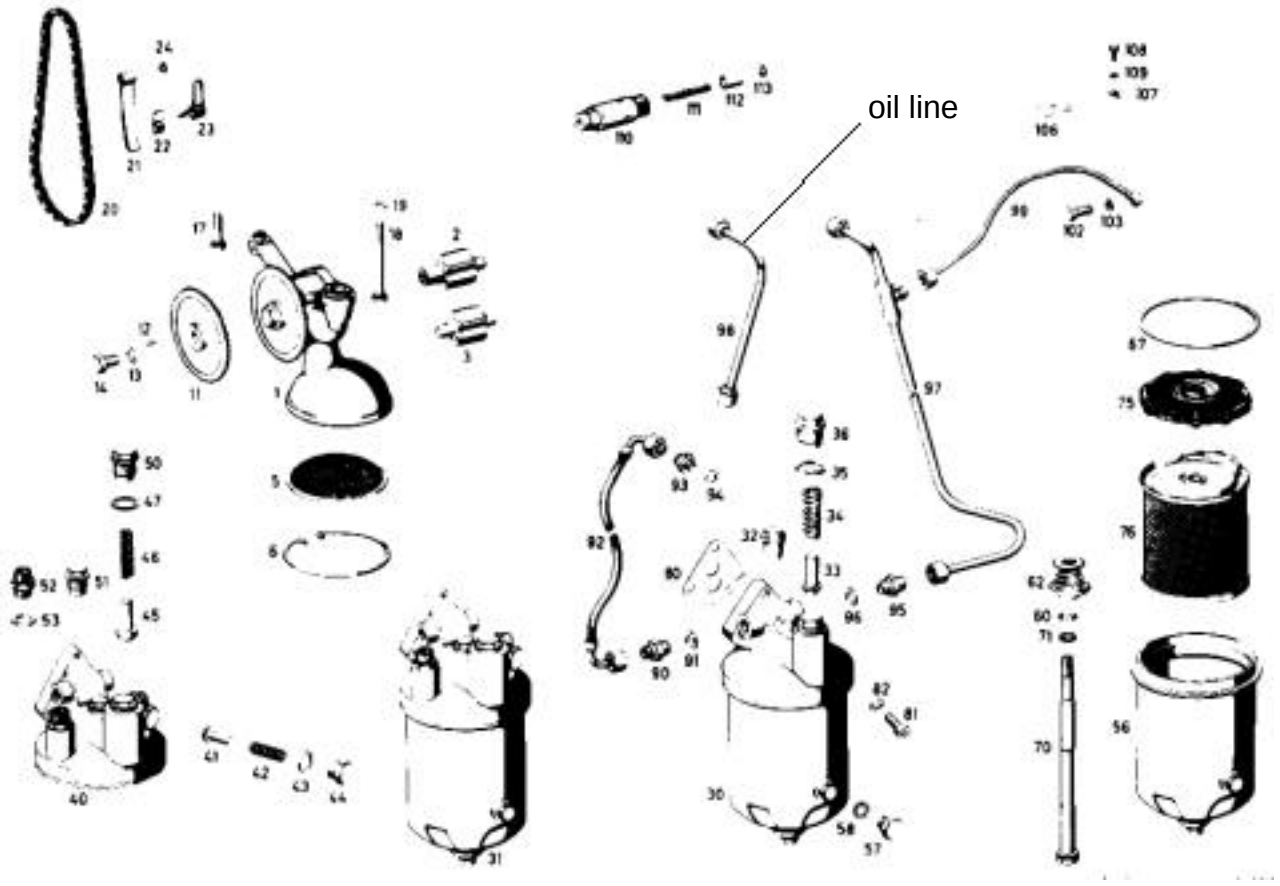


Figure 2: Power Steering Pump

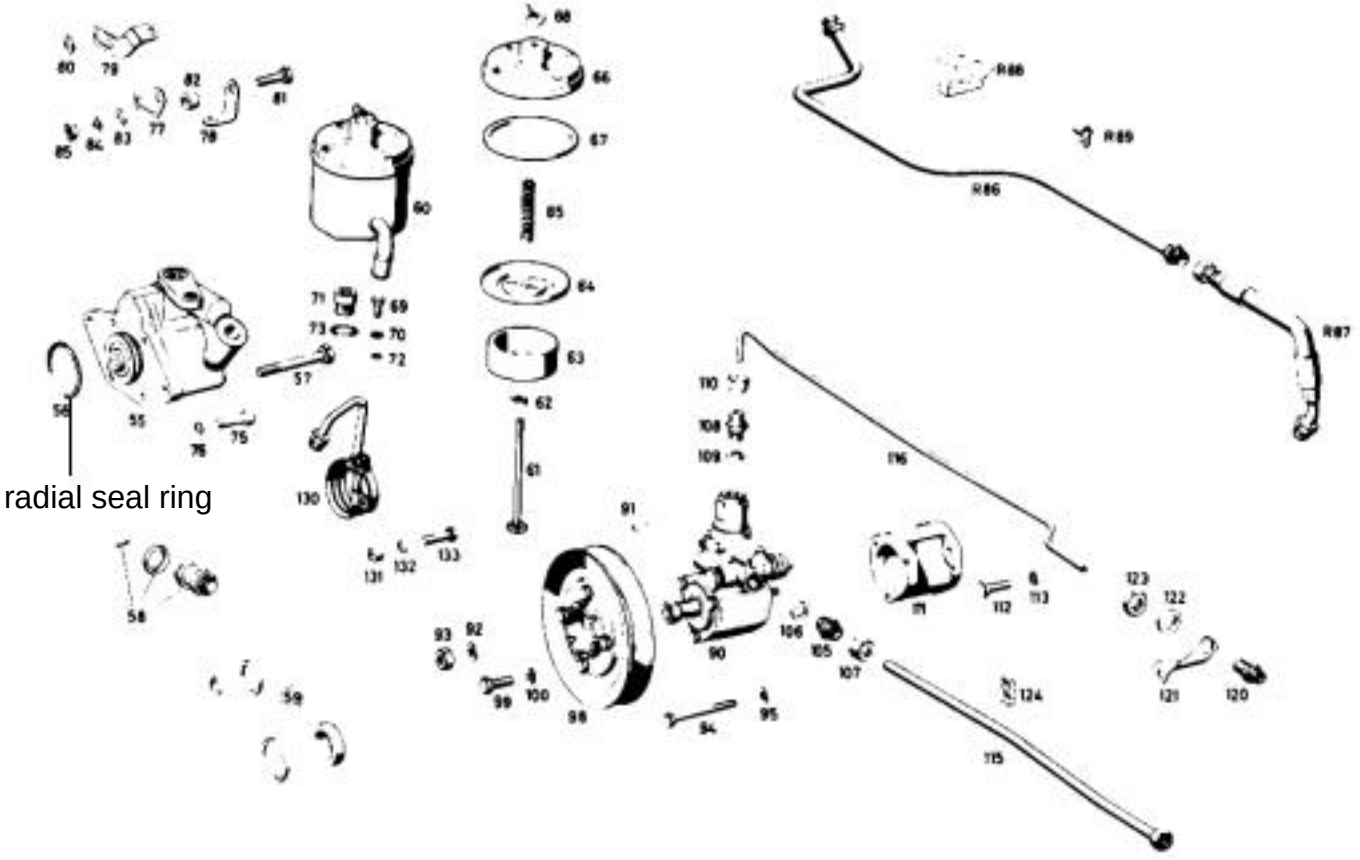


Figure 3: Front End Sheet Metal

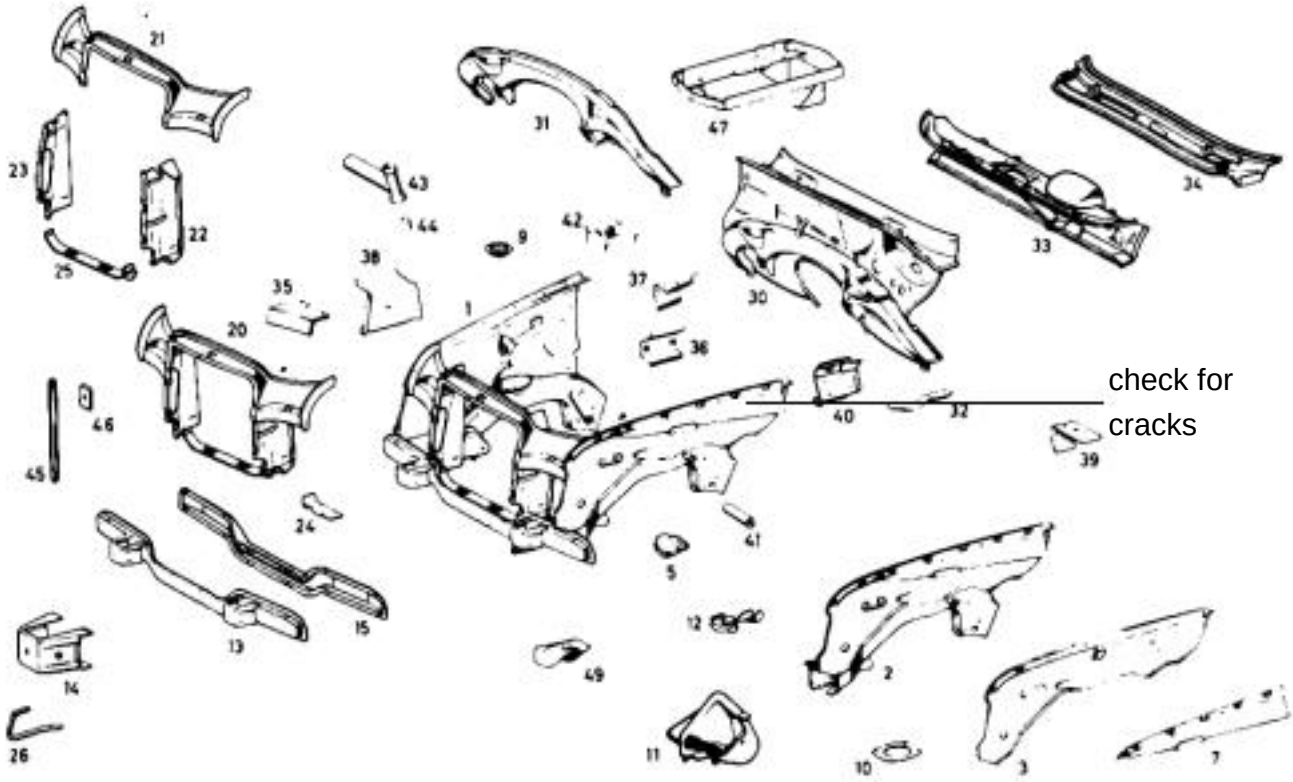


Figure 4: Front Axle

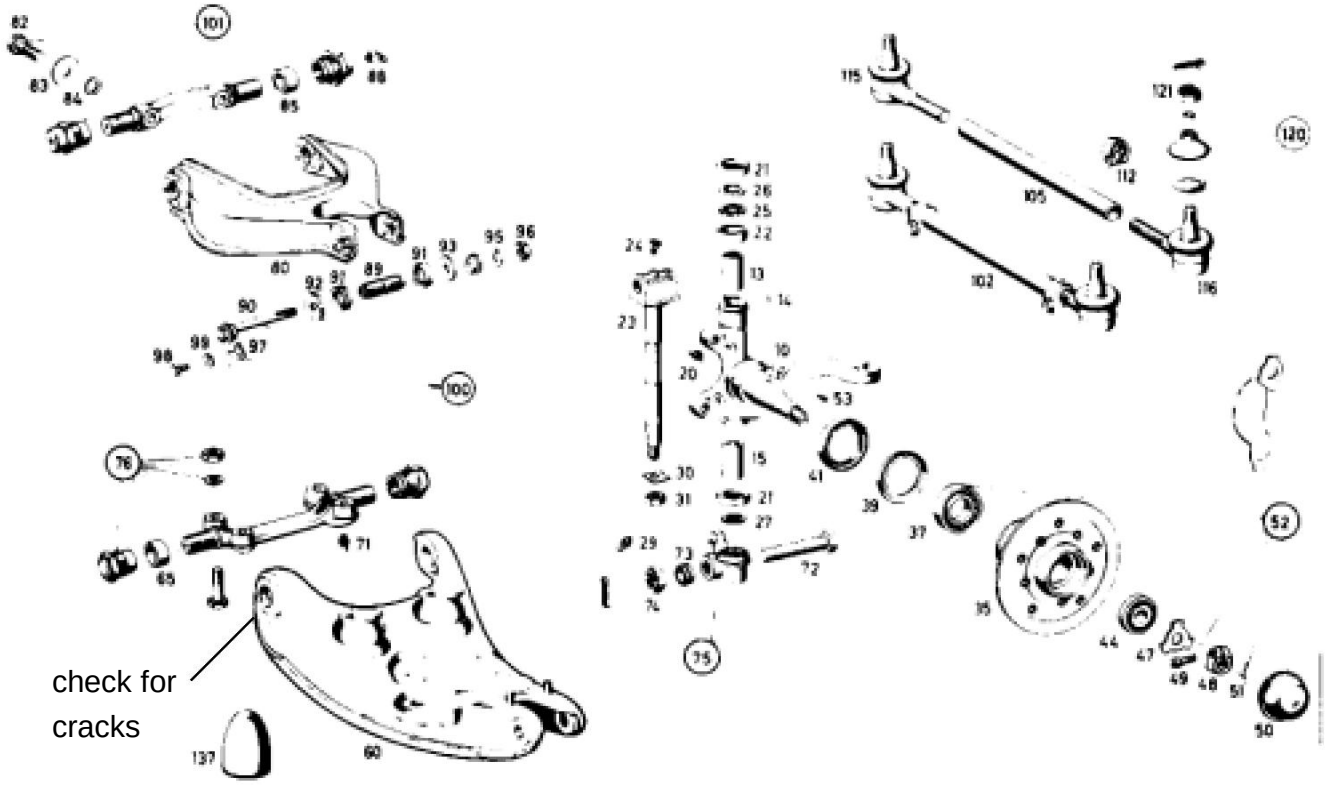


Figure 5: Drive Shaft

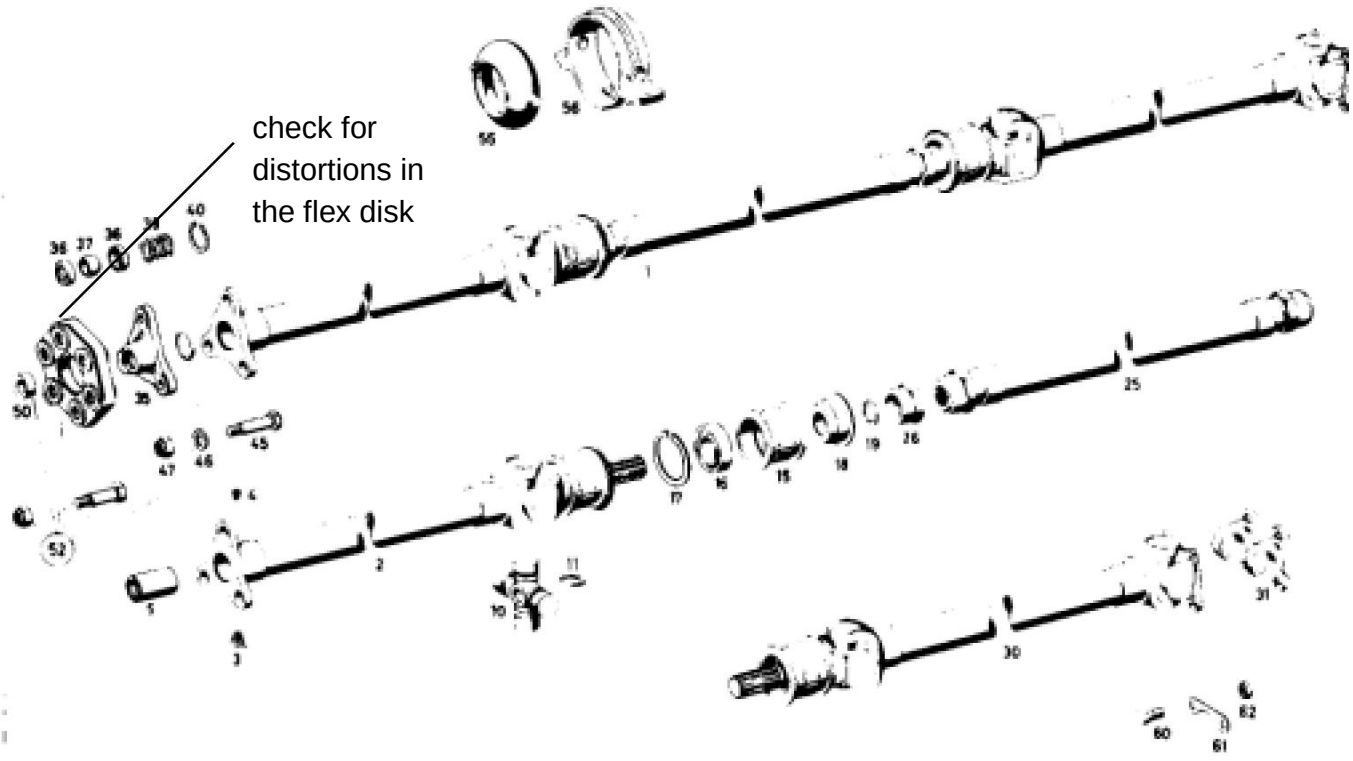


Figure 6: Rear Axle

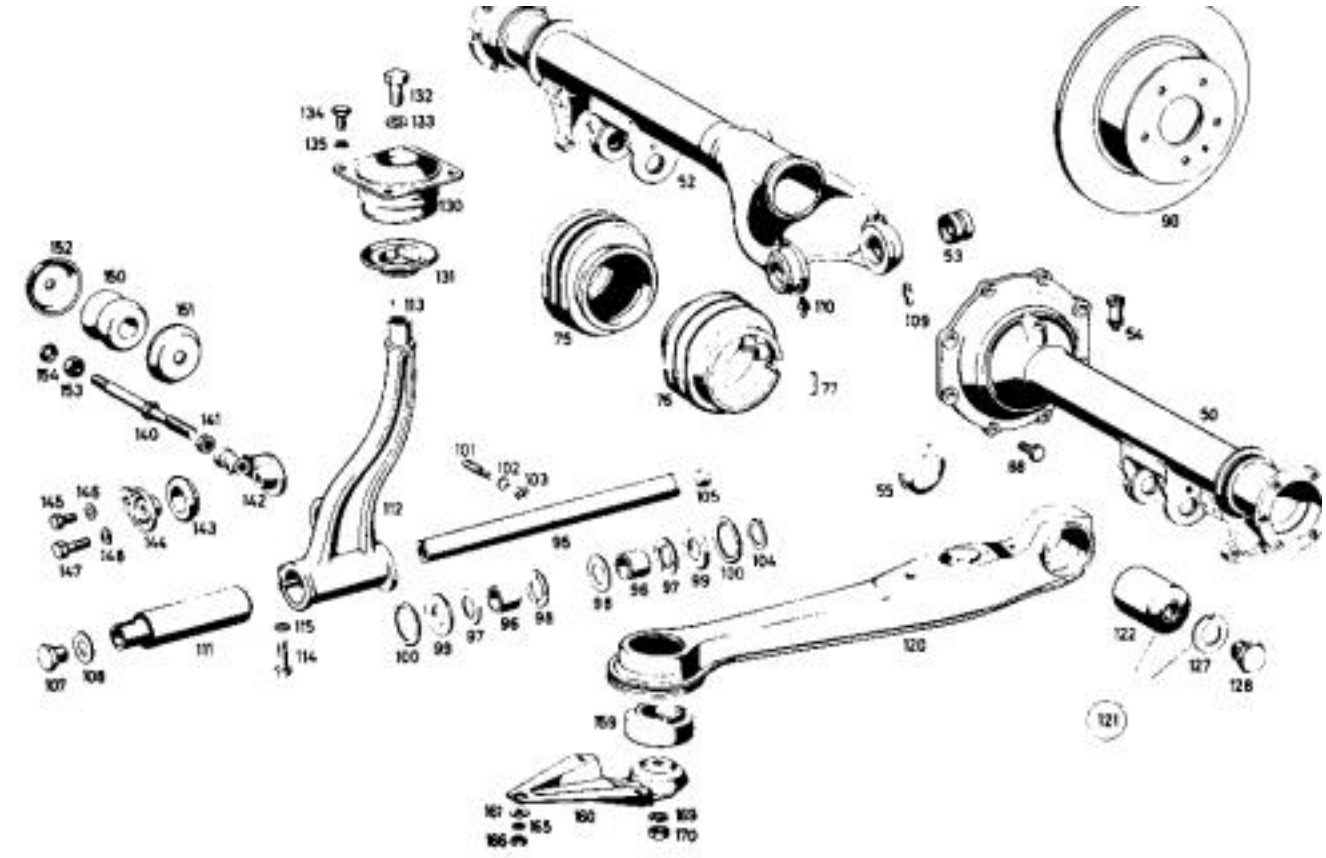
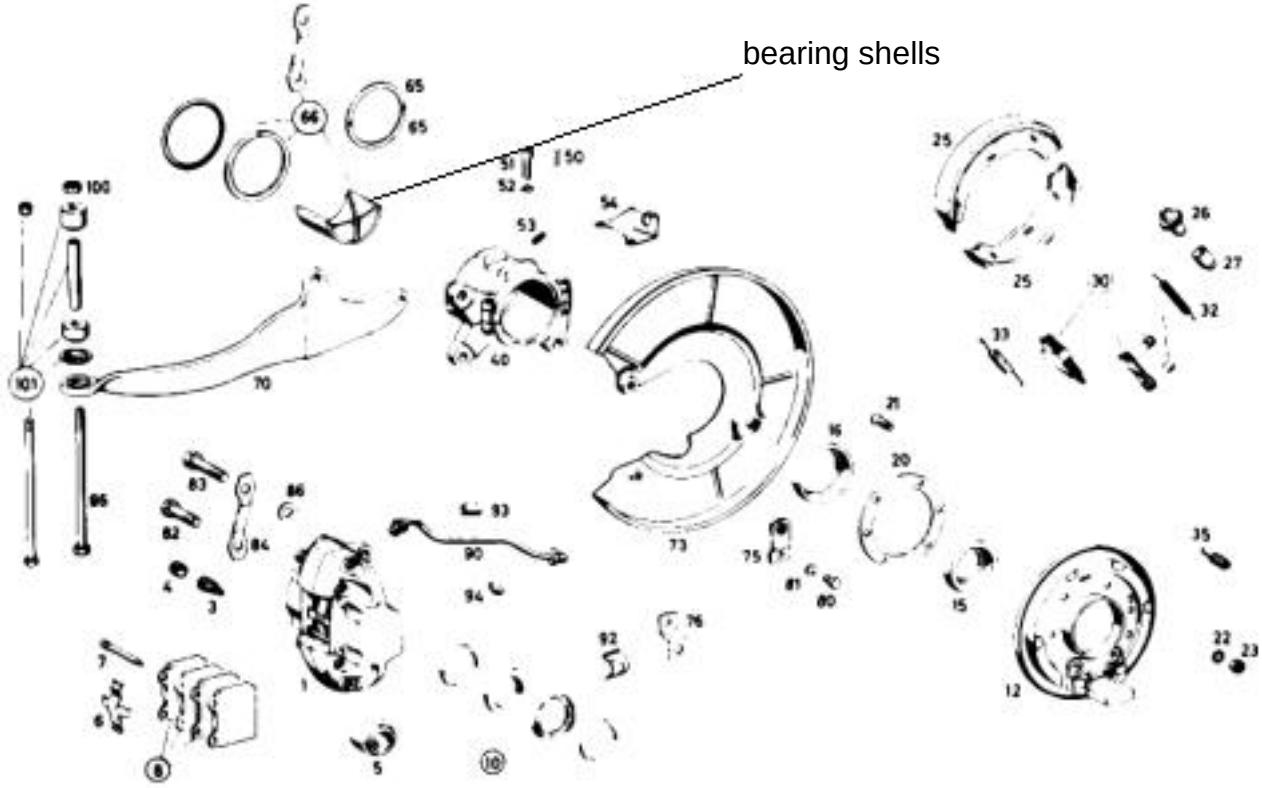


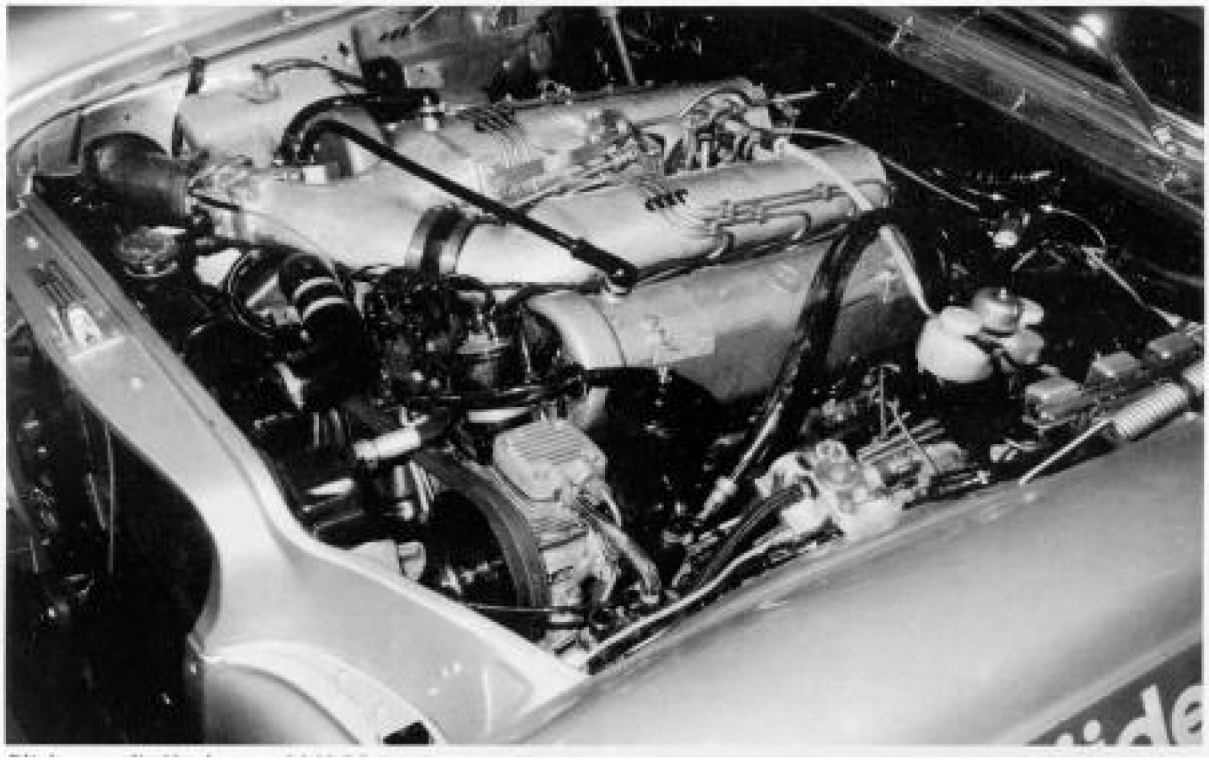
Figure 7: Rear Brakes



Price List

MECHANICAL PARTS

Most mechanical parts are core exchange. Core charges are refunded upon receipt of your old cores. Call for individual core charges.



DESCRIPTION	UNIT PRICE
A/C modification kit with bracket/Sanden 508 compressor or equiv	$3,900.00
A/C pulley	$850.00
Air hose kit for 6.3 includes: all intake hose pre-cut, including air intake boot (P/N 000-094-17-08 only)	$650.00
Driveshaft, 2 piece	$4,000.00
Driveshaft, 3 piece	$10,000.00
Engine	CALL
Front caliper	$550.00
Front brake disc 3.5, 4.5 & 6.3	$390.00
Fuel hose kit for 6.3 includes: all the flexible fuel hoses for the 6.3. Specify right or left hand drive and chassis. All fittings are German Coh-line	$400.00
Fuel pump	$1,250.00
Homokinetic joint 3.5, 4.5 & 6.3	$6,000.00
Ignition distributor	$3,900.00
Ignition wire 6.3	$400.00

DESCRIPTION	UNIT PRICE
Injection pump	$6,500.00
Motor mount kit	$1,900.00
Power steering pump	$1,300.00
Power steering gear box	$2,500.00
Rear axle W109; 6.3, 3.5, 4.5	$20,000.00
Rear caliper for non-vented rotor	$650.00
Rear caliper for vented rotor, early 6	$950.00
Rear rotor, vented, 300SEL 6.3	$1,000.00
Starter motor 6.3	$1,400.00
Starter motor 6.9	$1,150.00
Starter ring gear 6.3	$2,000.00
Subframe/front axle rebuilt includes: drag link, tie rods, subframe mounts, steering shock, idler arm kit, 2 air suspension valves (remanufactured), torsion bar bushing kit, new king pins, upper outer and inner control arm bushings, new eccentric bushings on caster adjustments, new lower control arm rubber stops. Air bags can be installed at request. All items are shot peened, bead blasted and epoxy painted. This kit is a direct bolt on. It will guarantee new road feel if the tires and steering box are replaced. The gear box can be purchased for $200.00 with the kit	$20,000.00
Sunroof motor	$500.00
Tachometer 6.3	$800.00
Transmission, automatic 2.8/3.0	$9,500.00
Transmission, automatic 6.3/3.5 *OEM*	$16,000.00
Transmission mount kit	$200.00
Water hose kit for 6.3 includes: all water hoses	$650.00
Water pump 6.3	$1,000.00
Water pump 6.9	$1,950.0
Window motor	$600.00
Windshield wiper motor	$500.00

AIR SUSPENSION VALVES

Early style valves for 300 SE. Please specify chassis number when ordering.

NOTE: The early style valves have new centerpieces pressed in along with new inlet and exhaust valves.

Air suspension kit for 300 SE includes:		$8,900.00
Main valve	000-327-27-25	
Alternate numbers	(LF/EV1A1 or 0501001002)	
Left valve	000-327-34-25	
Alternate numbers	(LF/VNB3B2 or 0500001019)	
Right valve	000-327-35-25	
Alternate numbers	(LF/VNB1B1 orO500001014)	
Rear valve	000-328-12-25	
Alternate numbers		
Check valve	000-327-16-25.	

Part above is a disassembled air suspension valve with new pieces to be installed.

Individual prices for early style 300 SE air suspension valves

DESCRIPTION	PART NUMBER	PRICE
Front valve left	LF/VNB 3B2	$1,250.00
Front valve right	LF/VNB 1B1	$1,250.00
Rear valve	LF/VNB 2B1	$1,250.00
Main valve	LF/EVB 1/1	$1,250.00

Late style valves for 300SEL

Air suspension valve kit includes:.....		$3,900.00
Main valve	1501001004	
Front valve left	LF/VNC 3/1	
Front valve right	LF/VNC 3/2	
Rear valve	LF/VNC 4/3	

Valves for 600

Air suspension valve kit for 600 includes:.....		$6,500.00
Pressure regulator	0481040001	
Main valve	1501001005	
Front valve left	LF/VNC 3/1	
Front valve right	LF/VNC 3/2	
Rear valve	LF/VNC 4/3	

Individual valve prices for 300 SEL and 600

Front valve left	LF/VNC 3/2	$795.00
Front valve right	LF/VNC 3/1	$795.00
Rear valve	LF/VNC 4/3	$795.00

DESCRIPTION	PART NUMBER	PRICE
Antifreeze valve	000-431-14-15	$900.00
Check valve	050-010-00-03	$390.00
Drain valve	000-328-14-25	$350.00
Main valve 300 SEL	1501001004	$850.00
Main valve 600	1501001005	$950.00
SUSPENSION PARTS FOR 300 SEL 6.3 & 600		
Air bellow, front, 300 SEL		$310.00
Air bellow, front, 600		$420.00
Air bellow, rear, 300 SEL & 600		$310.00
Air compressor 300 SEL & 600		$2,000.00
Main valve pressure switch	000-545-69-11	$600.00
Pressure regulator	048-104-00-01	$1,650.00
We also carry airlines, fittings & rubber grommets		
600 PARTS (Please call for additional 600 parts.)		
Brake booster (specify type)	002-430-03-01	CALL
Caliper, front/left	000-421-77-98	CALL
Caliper, front/right	000-421-78-98	CALL
Caliper, rear/left	000-421-76-98	CALL
Caliper, rear/right	000-421-79-98	CALL
Hydraulic pressure accumulator		CALL
Hydraulic fingertip pump	000-230-01-64	CALL
Hydraulic valve		CALL
Rebuilt hydraulic valves		$1,650.00
Water pump (specify 3 or 5 pulley)	100-200-23-01	$4,900.00
HYDRAULIC PARTS FOR 450SEL 6.9, W126 AND W123 CARS (Call for 6.9 parts.)		
Hydraulic pump (all cars)	117-230-00-64	$1,200.00
Leveling valve, fr/rr (W126 & 6.9)	116-320-03-58	$950.00
Pressure regulator	126-320-01-58	$2,000.00
Accumulator, fr/rr (6.9)	126-320-05-15	$400.00
Struts, fr/rr (6.9)	126-320-07-1	$1,500.00
Accumulator hose to strut(6.9)…….……$200.00		
HIGH PERFORMANCE ENGINE PARTS		
High lift camshafts.....		$4,000.00
MISCELLANEOUS (Call for prices if not listed)		

(“Price List” continued from previous page.)

Coh-line original fuel hose kits for 6.3’s. We are now able to manufacture original fuel lines for all MB.

The savings are 50% - 80% below list price!

Owner manuals are $200.00.

Laser cut hat shelves (W108 & W109). Ask about these exact reproductions.

Power steering gearboxes for W116, W123, W124, W126 and W201.

Road test articles are available upon request.

Windlace kit. Windlace is the fabric covered U-channel that fits on the “A” pillar and “C pillar of the car. Windlace was sold by Mercedes-Benz two years ago. We have obtained original material from Mercedes-Benz and provide an installation kit with hardware and prints for $600.00.

Call for 300SE and 600 parts. We rebuild UN-loader valves, central brake servos and hydraulics for the 600.

(All prices subject to change without notice.)

(“High Performance Engine Modification” continued from page 9.)

Terms and Conditions

All engines are warranted for 12 months or 12,000 miles, whichever comes first. All engines are core exchange. A 30% deposit is required to start work. (Visa, MasterCard and American Express accepted.) The remaining balance is to be paid by COD. A $3,000.00 core charge is required which will be promptly refunded upon receipt of acceptable core.

A complete build order sheet will be faxed to customer prior to work being started. Average lead times are 4 to 6 weeks. Shipping costs are to be incurred by customer for rebuilt motors. Star Motors ships by common carrier at a reduced rate. Average shipping costs is $1,000.00, depending on motor purchased. All items are insured for full value.

PLEASE SPECIFY:

Year and make of model
Engine number
Chassis number
Injection pump number

(“Trouble Shooting The Air Suspension” continued from page 16.)

Also check the air compressor air cleaner if it is properly mounted and does not inhale engine fumes (A modification was made at the factory for this on some early models).
In cold climates (below 40F) the ethyl alcohol chamber must be full to assure that the valves do not freeze and become in-operative. Try to avoid using alcohol in the summer months since it is not necessary and prolongs the life of the internal rubber components of the valve.

It is not uncommon for the new and rebuilt valves to leak slightly due to the design nature of buna nitrile o rings used in the valves. Every valve is tested for 24 hours with a maximum loss of 8 psi (.6 ATM) at a test pressure of 200 psi (13.6ATM) in a 12ml test chamber. Since the chamber size is infinitesimal the 8 psi loss is not significant when compared to 2 liter air bag at 80-120 psi operating pressure.

If all the suspension items are OK, they should assure you trouble free maintenance for years to come.

BECOME AN M-100 GROUP MEMBER

The M-100 Group is dedicated to sharing experiences and preserving the Mercedes 600's, 6.3's and 6.9's. Applicants do not have to own a Mercedes 600, 6.3 or 6.9 though bylaws restrict voting and office holding to actual titled owners. It is our intent to publish a quarterly newsletter with plans to publish monthly. Please send $30.00 along with a completed copy of this application form to:

M-100 Group
Carriage House
2020 S. Girard
Minneapolis, MN
55405 USA

Count me in! Enclosed is my initial $30.00 membership fee.

Date:

Name:

Address:

City/State/Zip:

Daytime Phone:

Evening Phone:

Mercedes model now owned:

Chassis numbers of M-100 powered cars:
Year

Year

Year

Year

SLML (SL Market newsletter) subscriber?

MBCA (Mercedes Benz Club of America) subscriber?

Ways I could help the M-100 Group:

My greatest need for help with M-100 cars at this time is (purchase advice, specific technical knowledge or service, specific parts, or other):

Thank you