This page could be found on VCNA's website but suddenly disappeared. Since we think it contains some useful information we have put a copy of it here on our website. Volvo 164 Club of Sweden, January 15, 2001.

PARTS FAMILIARIZATION WORKBOOK NO. 2
240/260
Section 2: 1979 Through 1984 Models
INTRODUCTION - Part 2

Engine - Gas Six-Cylinder

The B-27 engine introduced with the 260 models in 1976 was replaced by the B-28F engine in the 1980 260 models.

The B28-F is similar to the B-27F and contains many of the same features such as:

- Compact V-6 cylinder arrangements
- Aluminum block, heads, intake manifold and water pump
- "Wet" cylinder liners, overhead camshafts

The B-28F displaces 2.849 liters (2,849 cc) or 173.85 cubic inches. The increased displacement from 2,660 cc of the B-27 is the major difference.

The different parts include pistons and liners, liner shims, piston rings, camshafts, valve springs and keepers, and head gaskets. Most routine maintenance parts like the air filter, oil filter and valve cover gaskets are the same for both engines.

Because this is a wet liner engine and not a bored block, a machine shop is not needed to rebore the block when a rebuild is needed. However, as with all Volvo engines, the rebuilding process must only be attempted by qualified Volvo-trained technicians.

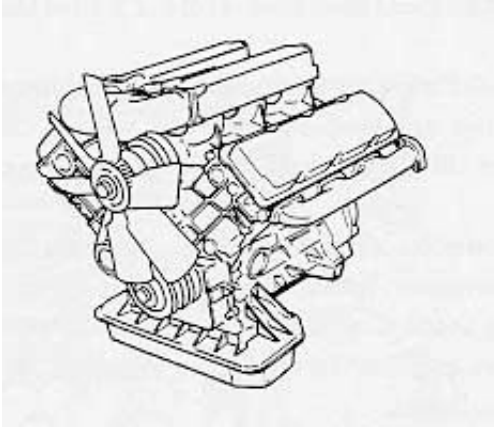
A single kit that contains everything needed for rebuilding a Volvo engine is not available. Instead, the parts needed must be ordered individually. Because rebuilding an engine requires precise measurements, never assume what you may needs. Let the customer tell you. Remember that key engine parts like pistons/liners, main bearings, etc. are available in a variety of sizes for each engine.

Replacing a 1976-79 B-27F with a B-28F is not as easy as it may seem. Switching parts from the old engine to the new engine and various adjustments have to be made.

For instance, the B-28F may not have the exact pre-drilled holes or mounting brackets that the replaced B-27F has. Because there are several versions of each engine (emissions equiprment and fuel systems parts vary), it may take additional time to get the newly installed engine running.

As indicated in Section 1, other car manufacturers were involved in the design and update of the V-6 engine. Certain models of Peugeot (the 604), Renault (the R-30) and the Delorean were fitted with a version of the 2.7 or 2.8 liter V-6. Fuel and emissions system parts vary by manufacturer, but the engine internals are usually identical.

The last B-28F installed was in the Canadian and U.S. 1982 264GLE model. Starting in 1983, the new Volvo 760 came equipped with the B-28F.



One last comment on the B-27 and B-28: the all-aluminum design make for a very lightweight engine. A genuine Volvo Exchange Program B-28F engine (if still available 10/98), tips the Parts Distribution Center scales at 290 lb. (132 kg). That's light when compared to some others:

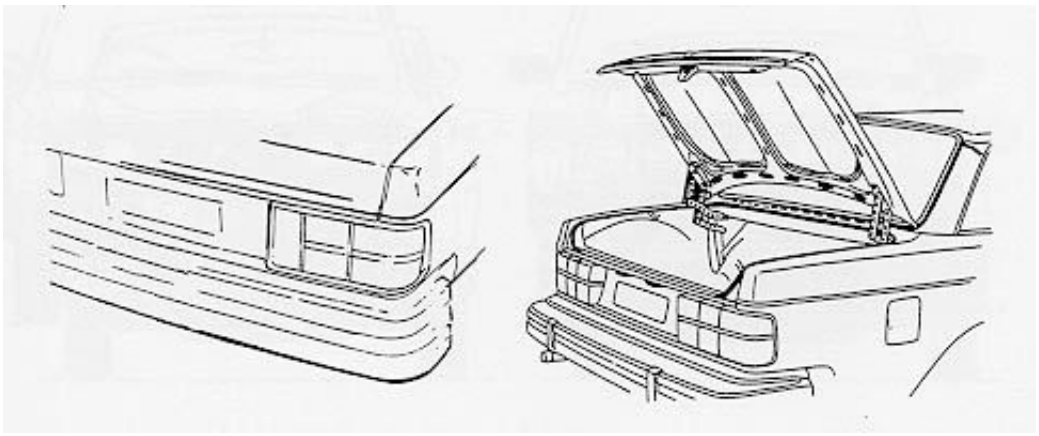
- The B-20 at 372 lb. (168 kg)
- The B-21F - Turbo at 410 lb. (186 kg)
- An average domestic 5-liter V-8 at a heavy 450 to 550 lb. (250 kg)
- The D24 at a hefty 550+ lb. (250+ kg).

The point is that this compact, aluminum V-6 makes more power for its weight and size than many other engines. Volvo engineers felt that this kind of balance was too good to pass up -- and Workbook No. 3 includes details about an even more improved generation of Volvo V-6 engines, the B-280F.

Electrical

By 1979 the 240/260 was on its way toward carrying on the Volvo tradition of a dependable electrical system. Ongoing improvements to alternators, batteries, wiring harnesses and ignition system parts kept pace with the demands of the market and made up for earlier "teething" troubles. Other parts were also improved.

New taillight assemblies for the sedans first appeared in 1979. The 260s received six-section assemblies and the 240s were fitted with five-section rear assemblies.



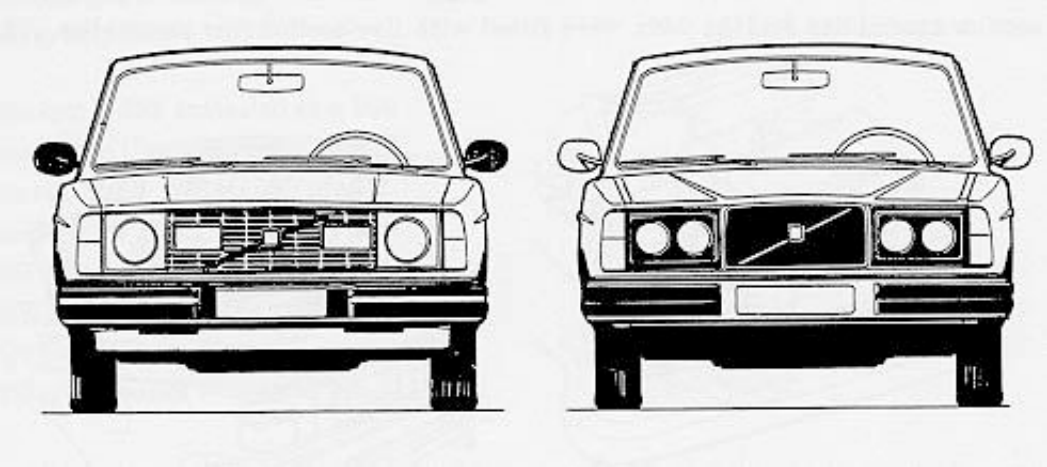
These assemblies contain the parking brake, reverse directional reflector and side marker lights. A

printed circuit and twist/turn bulb sockets eliminated loose wires and made replacing a bulb much easier. Lenses and circuits were permamently attached to the housing, unlike the separately attached pieces of most 1978 and earlier Volvos.

This one-piece design is still in use today. Accident research previously done by Swedish engineers on the older multi-piece rear taillight indicated that damage destroyed the entire multi-piece unit in more than 80% of the accidents studied. The cost for producing and replacing separate taillight pieces is greater than a one-piece design. Also, the one-piece assembly is better sealed and is less likely to develop an electrical problem due to exposure to the elements caused by slight accident damage.

A complete left or right rear taillight assembly is a precision-made part designed to last for years. Each assembly contains a combination of lenses, reflectors, bulb sockets, gaskets, sealing compounds, circuits and a moulded housing. It meets all federal safety requirements including state motor vehicle inspection laws. The safety benefits and overall quality of a genuine Volvo taillight assembly make it worth it to use a genuine replacement from Volvo.

The headlight arrangement for U.S./Canadian 240/260 Volvos have gone through a few changes.

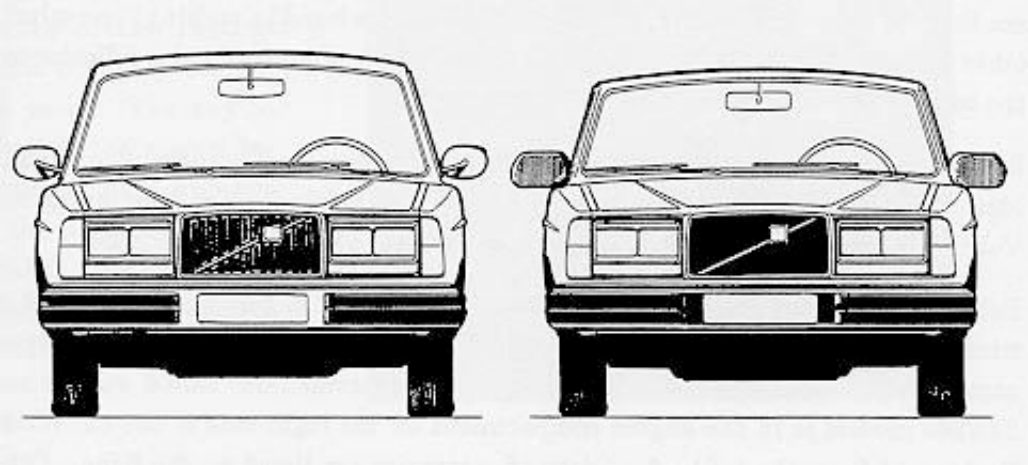


The headlamps were single round, dual round and dual rectangular headlight bulbs (the bulbs were called "inserts"). Although headlight inserts are listed by VIN on your Volvo Parts Manager's list, we have simplified things with the list below:

HEADLIGHT INSERTS

1975	Single round	No models available
1976	Single round	Dual round
1977	Single round	Dual round
1978	Dual round (except single round on 242 models)	Dual rectangular

1979	Same as 1978	Dual rectangular
1980	Same as 1978	Dual rectangular
1981	Dual rectangular, halogen high beam	Dual rectangular, halogen high beam
1982	Same as 1981	Same as 1981
1983	Dual rectangular, halogen high and low beam	No models available
1984	Same as 1983	No models available



For Canadian Volvos, European square and round halogen lights were available as an accessory. These single inserts are large, square lenses with replaceable bulb inserts. They are not legal for U.S. Volvos.

Windshield wipers from time to time require the replacement of the rubber insert or entire insert/blade holder. All 240/260 models have two front wipers. Older Volvos may require a new wiper motor, wiper arm bearings and new cables. Wiper motors can be rebuilt. However, usually the cost of repairing the motor (labor + parts) is more than the price of a new one.

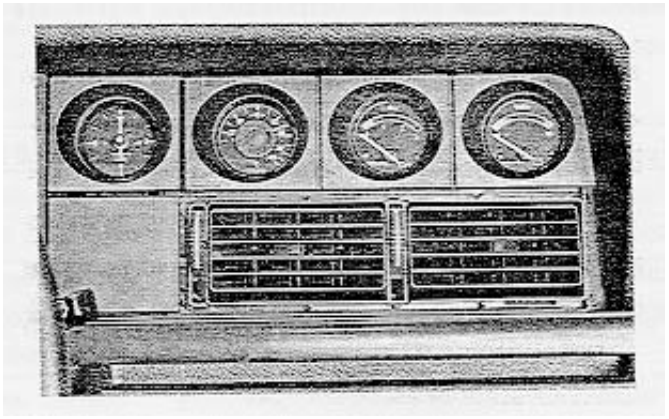
The rear window is kept clean on all 245/265 station wagon models with its own single wiper. This was a very unique feature when these cars were introduced in 1975. Volvos were not the first to have this feature -- but they did have a hand in making it popular! Most other imported and domestic station wagons had a rear-mounted wind deflector to clean the window instead of using a wiper.

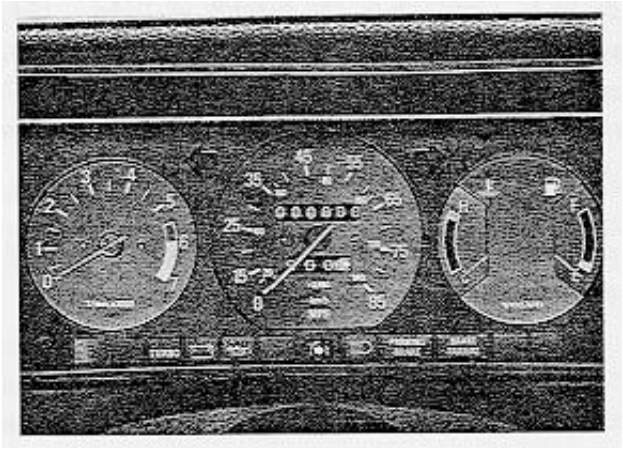
In time, more wagons (even hatchback sedans and sports cars) would pick up on this good idea of using a rear wiper.

Both the front and rear wipers have washer systems to spray washer fluid on the window. A washer motor located on or right near the plastic washer fluid reservoir is a popular replacement part. The location of the reservoir (also called washer tank) on 240/260 models is in the engine compartment on the right side of the car (diesel and Turbo models on the left). Other key replacement parts include the washer lines and jets that spray the fluid on the glass.

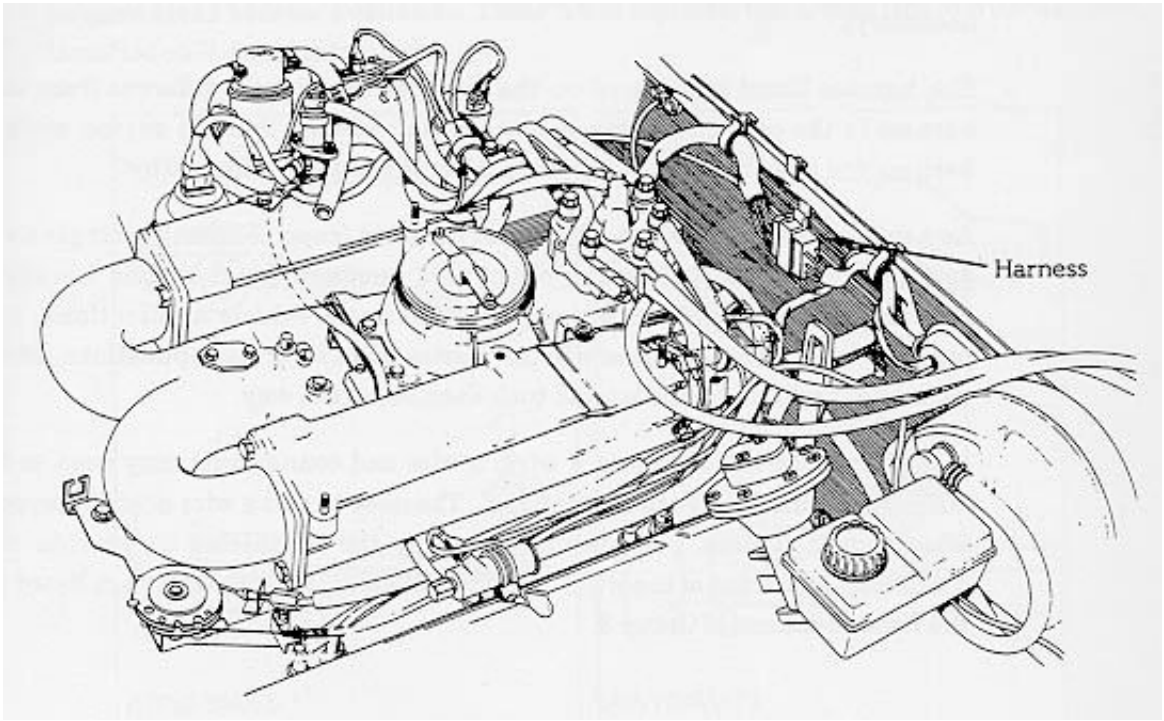
Never use engine coolant as a washer fluid substitute. Serious damage to the body paint can occur.

The dashboard instruments on the 240/260 models include a variety of speedometers, tachometers, clocks, temperature gauges, boost gauges, fuel gauges and optional accessory gauges. The sizes and shapes of the instruments changed through the years.





Speaking of variations -- now we come to wiring harnesses! These are also called cable harnesseses.



If a harness is needed, usually it's f or a fire or accident-damaged car. There are many variations

listed and diagrammed by the general areas of the car. For instance, all headlight harnesses and engine harnesses (the front of the car) are listed, dashboard and interior harnesses for the middle of the car, tne rear harnesses (taillights, rear wiper/washer), etc.

Some things should be remembered:

> As new part numbers replace older part numbers (supersessions), a single new part number can replace many older part numbers for the same harness. Because a single new harness may now fit many vehicle applications, it's possible that this new harness will have extra wires for some applications. Most technicians will tape them up and tuck them out of the way.
> If the new harness is missing a wire, a wire and connector(s) may need to be added to the harness by the technician. The need to add a wire doesn't happen often; but if it does, you may need to provide the connectors at the end of the wire.

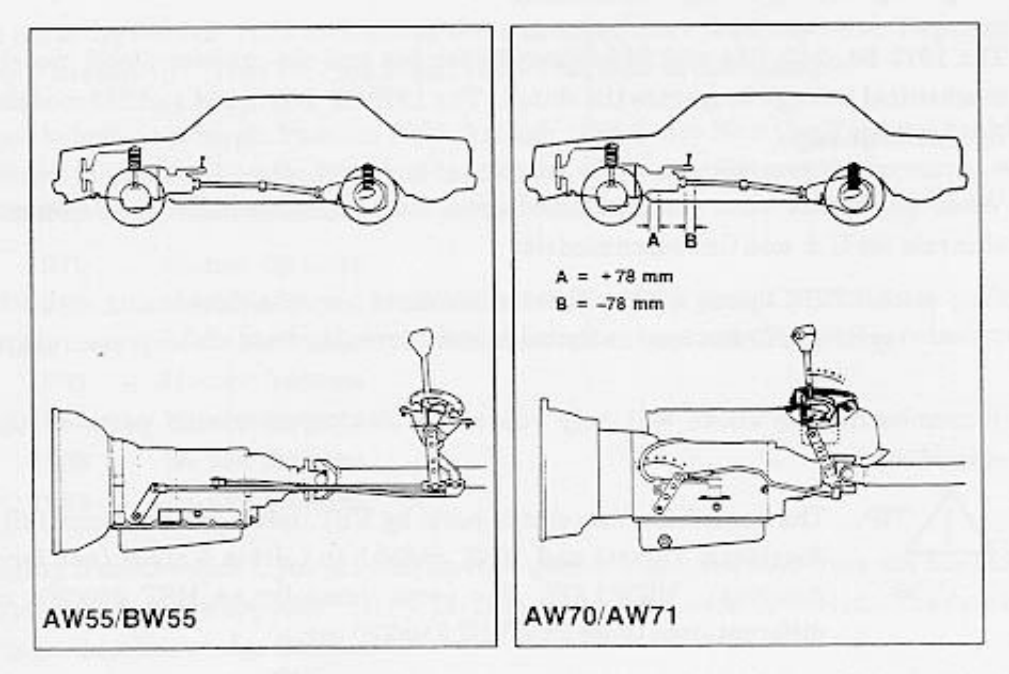
For harnesses with many missing wires or incorrect wire lengths, BEWARE! Recheck the part number and vehicle info, then visually compare the new to old harness if possible. Obtain all the facts and advise your parts manager of the situation -- Do not order another harness just to compare.

Wiring harnesses are usually expensive. Most are handmade and involve considerable time to produce. Many knowledgeable long-time parts professionals would agree that they have had more than one wild and crazy experience dealing with wiring harnesses.

Drive Train

The M45, M46 manual four-speed transmissions and the BW55 automatic threespeed transmissions were installed in different models from 1979 to 1984. Internal parts to these transmissions were updated through the years.

With the 1982 240 models, the AW70 and AW71 three-speed-plus-overdrive automatic transmissions became available. These units replaced the AW55 (the BW55 was still installed on V-6 and diesel cars).



The AW70/71 transmissions are improved versions of the earlier automatics. The AW70 was fitted to normally aspirated (non-Turbo) four-cylinder sedans and wagons. The AW71 was fitted to all Turbo models equipped with automatic transmissions. The information plate on the side of the transmission and the VIC plate will positively identify the transmission.

These new transmissions were longer than the AW55/BW55. All cars equipped with the AW70/71 have changes to certain driveline, suspension and exhaust parts. For instance:

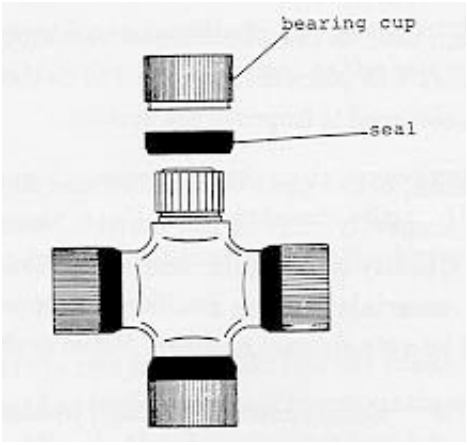
- The front propeller (driveshaft) shaft is shorter and has a different part number.
- The front coil springs are heavier.
- The engine exhaust front downpipe and catalytic converter were modif ied.
- Longer control cables and a push-button switch to engage the overdrive feature were added to the gear selector assembly.

The dependable AW70 and AW71 automatic transmissions are sometimes referred to as a four-speed transmission, although it probably is more technically correct to call them a three-speed-with-overdrive transmission. Replacement parts may still be available as well as complete genuine Volvo exchange units.

The 1979-84 242, 244 and 245 four-cylinder gas and six-cylinder diesel models use a mechanical linkage to operate the clutch. The 1979-82 262C, 264 and 265 models have a hydraulic linkage.

When we include what was mentioned about clutch systems in Section 1, we can make this rule for U.S. and Canadian models:

- All 1975 through 1984 240 models have a mechanical (using a clutch cable) system. All 260 models have a hydraulic (using fluid under pressure) system.



The rest of the drive train is unchanged from the 1975-78 240/260 models. Key replacements parts previously mentioned include the propeller shaft center bearing, universal joints, a variety of rubber bushings, and a regular or limited slip (also called anti-spin) differential.

Complete new rear end assemblies (rear axle tubes, center housing and preassembled differential) may still be available.

Brakes

By now you probably would agree that Volvos have their own kind of evolution. It's not very visible on the outside, but serious changes do occur underneath the surface.

The parts department feels each one of these changes more than any other Department in a dealership. "How so?" you might ask. Well, look at this example.

Listed below are excerpts from the 1979 through 1984 Volvo New Car Features booklets provided to the dealerships. Read and take notice of the new features that occurred with the brakes on the 240/260:

1979 - No new featutres
1980 - Ventilated front brake discs for all models except DL 2/4 door. Parking brake color matched to interior and brake pad (teeth) is redesigned.
1981 - No new features
1982 - No new features
1983 - No new features
1984 - No new features

Judging from the above, you may think that quality improvements were not needed (or not made). Just the opposite. Many parts were improved.

The system used on the 240/260 is a version of the four-wheel, power-assisted disc brake system that was pioneered an the L40 in 1967. From 1979 to 1984 continuous research occurred to improve the system.

For instance, brake pads were tested and improved to reduce noise, fade resistance and increase longevity. Brake pad material was constantly re-evaluated to suit particular models. Usually both regular and special long-life pads (called taxi pads) were available. As new materials became available, groups of brake pad part numbers were usually replaced by a single part number.

Genuine Volvo brake pads have identification markings on the backing plate. The markings appear as follows:

Marking	Meaning
TX	Manufacturing description
465	Charge number or composition number
FF	A safety classification. The first letter indicates the cold friction value and the second the operating friction value.
20088	Backing plate number
135 91 94	Volvo tech number
448BE	Batch number

None of these letters/numbers is a part number! These technical numbers are assigned by Volvo engineers and relate to specific car models.

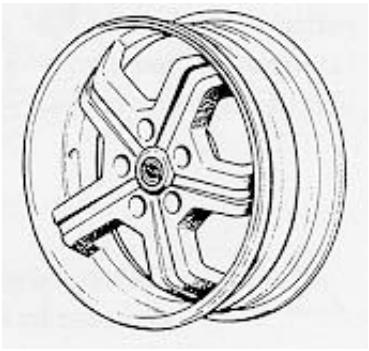
Brake pads are sold in kits of four pads -- two for each caliper. The same batch number on each pad proves that all the pads in the kit were manufactured at the same time and, therefore, have the same properties.

The best types of materials for brake discs and pads were continually investigated. Some material combinations cause electric currents -- called the galvanic effect. Unsuitable material combinations can produce such a high galvanic effect that the brake pads can actually rust onto the brake disc!

A final word on brakes -- Genuine Volvo brake pad kits contain just the brake pads. Do-it-yourselfers and shop technicians will need to replace some of the mounting hardware to do the job by the book. The mounting kits should be available at your dealership. Remember, it's pads and mounting hardware!

Suspension/Steering

The 1979 to 1984 240 /260 models have the same suspension system described previously with the 1975-78 models. This includes the strut-type front end and coil spring rear suspension with 14-inch stamped steel road wheels.



In 1980 a 15-inch alloy wheel rim became available for certain 240/260 Volvo models for the first time. Unlike the 15-inch wheel used on the 140 and 160, this five-spoke aluminum alloy wheel was designed to fit the first of a new generation of low profile tires. This 15-inch rim became standard equipment on the Turbo.

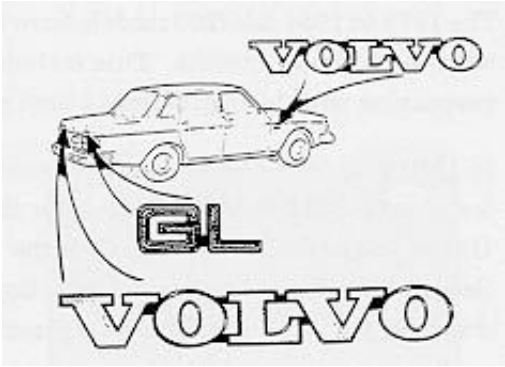
All 240/260 models have power steering as standard equipment from 1982 to the present. Most 1978 through 1981 models have also come with power steering. The only exceptions are the 242DL, 244DL manual-transmission cars that have manual steering.

Body

The basic shape of the 240/260 did not change during the 1978 through 1984 period. Small, almost unnoticeable changes to the sheet metal did occur mainly to improve fit or function.

An example of a small but important functional improvement is the redesigned trunk lid first fitted on all 1979 240/260s. The bottom edge of the new lid was made to be closer to the ground -- the trunk on all 1979 and later cars is easier to load than the 1975-78 models. Several new part numbers were introduced including the new taillight assemblies previously mentioned in the "Electrical" section.

A change to the way 240/260 models are referred to occurred in 1980. The various models were referred to by letters -- the numbers (244, 265, etc.) did not appear. DL, GL GT, GLE, GLT and Coupe were used to identify the model both on the car and in Volvo consumer publications.



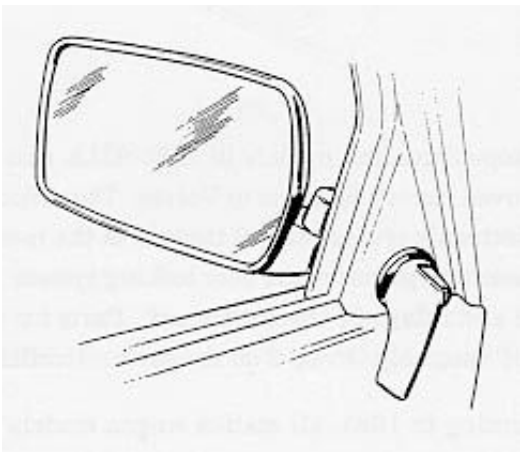
Now instead of a customer saying that he or she needed a part for a 244GL, the customer might ask for a part for a GL. Always politely ask for the VIN and any other information you feel you will need to identify the Volvo model.

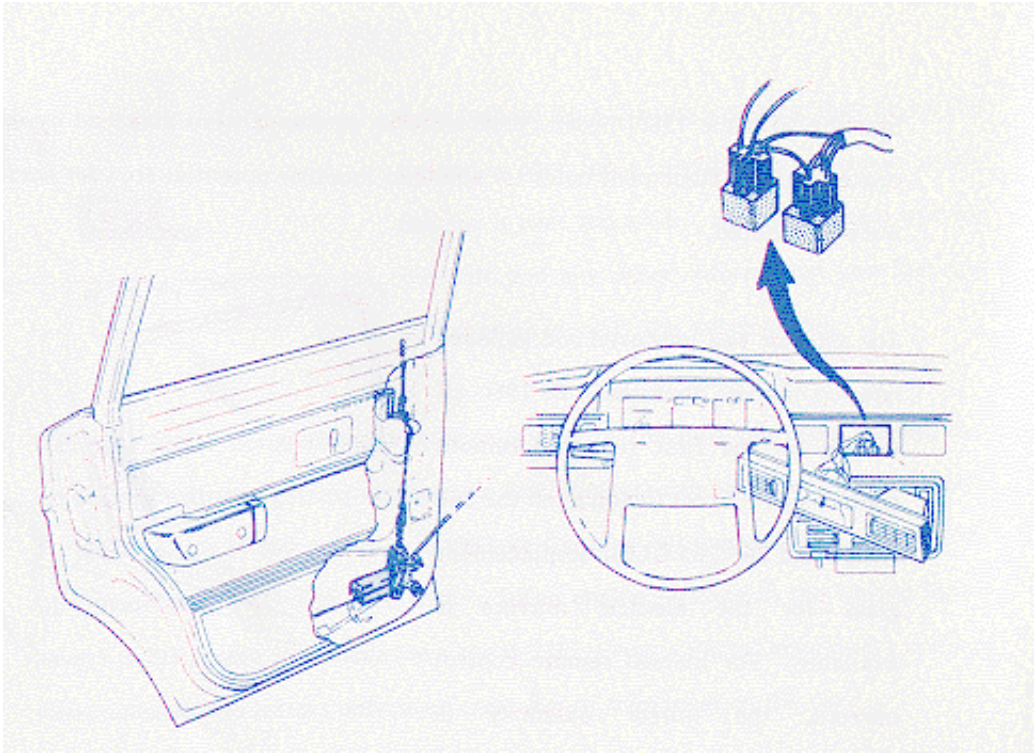
The letter designations provide only part of the info you need. Make your job easier by always getting at least the VIN. Letters can be tricky. For instances a 1980-81 GL is a 260 model -- a 1983-84 GL is a 240 model. Also, a few 1982 GLT models are NOT equipped with a Turbo engine -- some in the United States have a B-21F, some in Canada have the B-23E!

When identifying exterior trim moulding, it helps to know the year and model designation (GL, GLE, DL, etc.) in addition to the VIN. Here's where the letters help to identify the parts needed.

Starting with the 1980 models, most exterior emblems were attached by double-coated tape. Attachment holes for emblems (another potential area for corrosion) were eliminated.

The interior was improved and included new up market features. In 1980 all models for the first time had remote control side mirrors (electric on the 262 Coupe and 264/265 GLE). Replacement glass for the electric mirrors may still be available. For manual remote control mirrors, the mirror assembly is replaced as a unit.





The top-of-the-line models in 1980 (GLE and 262 Coupe) also introduced other new or improved luxury features to Volvos. These included electrically operated door locks and an electronic cruise control instead of the mechanical system previously used. Typical replacement parts for the door locks system include the electric motor (usually one per door) and relays in the dashboard.

Beginning in 1981, all station wagon models were fitted with a locking mechanism for the rear cargo compartment floor storage area.