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 1

The genuine Volvo parts and accessories market grew steadily during the 1979 to 1984 period. Both an increase in the sales of new 240/260 Volvos and the high number of Volvos on the road were the reasons.

Many more refinements were made to the 240/260 during this period. Actually, 1978 kicked off a blizzard of yearly improvements made to many internal component parts. Listed below is just a quick sample of a few of the many improvements made from 1978 through 1980:

1978

- Redesigned Cl system fuel distributor.
- Larger fuel pressure accumulator for 260s.
- Oxygen sensor system for all 260s.
- Alternator, starter, ignition distributor changes for 240s.
- New fuel gauge sender, plastic wheel well partitions.
- New door locks/latches, front door storage compartments.

1979

- New pistons for B-21F, fuel tank cap, temperature controlled viscous fan, rubber bushings for A/C compressor.
- Rear exhaust pipe routed under rear axle.
- New low-maintenance battery, rear taillight assemblies, license plate/trunk lights, rear tailgate wiper control.
- M45, M46 internal/external transmission parts improvements.
- Steering improvements, gas pressure shocks standard on certain models, Nivomat self-leveling shocks standard on 265s in United States.
- New trunk lid -- easier to load trunk.
- Adjustable dash-mounted switch for A/C thermostat.

1980

- New B-28F V-6 engine for 260s, fuel injection/emissions parts.
- New door armrest mounted electric window switches.
- Ventilated front brake discs for all models except DLs.
- New hubcap design (three wide clips and smaller center cap).
- Electrically controlled central door locks.

- Stick-on Volvo body emblems -- no holes in body.

New Volvo retail car sales increased in both the United States and Canada. The number of Volvos on the road also kept increasing.

Volvo Retails	1978	1979	1980	1981	1982	1983	1984
United States	48,000	53,798	54,177	63,038	71,151	87,841	97,915
Canada	5,512	7,002	8,020	8,654	8,168	8,454	8,516

People were buying Volvos because of a tradition of quality, dependability and value. As you have learned previously, through the years Volvos have remained pretty much true to their roots.

A diesel engine in these cars was first available in 1979 in Canada and 1980 for the 260 United States models as well as 1982 in 240 models. To some, this combination of diesel economy and Volvo practicality was a marriage made in heaven (or somewhere else if you happened to dislike diesels!). The collapse of, the diesel car market in 1982-83 made 1984 the last production year for a Volvo diesel in the United States and Canada. A few late-1984 production diesel Volvos were sold in 1985. More on diesel parts later ...

Someone once said that traditions die hard. Customers that bought Volvos from 1974 through 1977 were sold on dependability, luxury and practicality -- a traditional sporty model was not available. A movement in Volvo got underway in 1977 to spice up the North American 240 with a dose of excitement.

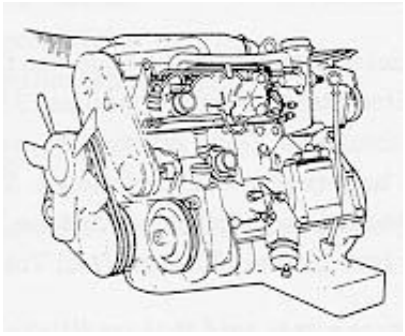
Volvo's tradition of high performance was reawakened in 1978-80 with the previously described 242GT. From 1981-85, the 242, 244 and 245 Turbo models made the scene. Volvo performance was back and better than ever! More about this later, too.

The next few sections contain general parts-related information about these refinements and new features. This info is divided up into the following segments:

- Engines
  Diesel
  Gas -- four cylinders
  Gas -- six cylinders
- Electrical
- Drive train/brakes
- Suspension/steering
- Body

The last model year for the 260 was 1982. In 1983, the 700 was introduced with the first model being the Volvo 760 -- the successor to the 260. The 700 is the subject of Workbook No. 3.

Engine -- Diesel



The diesel engine was installed in 1979 and later Canadian models, in 1980 260 models and 1982 through 1984 244 and 245 models (the 242 was never offered with one). All Volvo diesel engines are six-cylinder, in-line bored block type, and displace 2,383 cc (145 cubic inches). The cylinder block is cast iron and the cylinder head is aluminum.

The engine type designation is D (for diesel) 24 (for 2.4 liters/2,400 cc rounded up from 2,383 cc).

This diesel was obtained from Volkswagen/Audi in Germany. Although it has a few parts in common with the Audi diesel engine used in the early 1980s, most large components (like the cast iron block and crankshaft) are only used on Volvos. The reason is that the Audi diesel has five instead of six cylinders like the Volvo diesel.

Although the D-24 is a six-cylinder engines it does not share any parts with the earlier in-line type B-30 gas engine or the later B-27/B-28 V-6 gas engine.

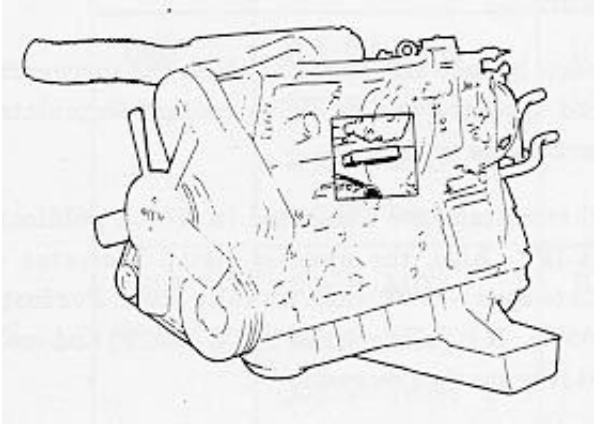
The D-24 represents a break away from the traditional family of part numbers. For instance, the oil filter is special to this engine and cannot and should not be used on any other Volvo engine. Virtually all D-24 genuine Volvo parts fit only the D-24.

Although many operational differences exist between gas and diesel engines, many parts look the same. All diesels have connecting rods, pistons, rings, bearings, etc. A diesel engine puts more strain on these parts so they have to be made stronger. Also, assembling a diesel engine requires additional skills and training.

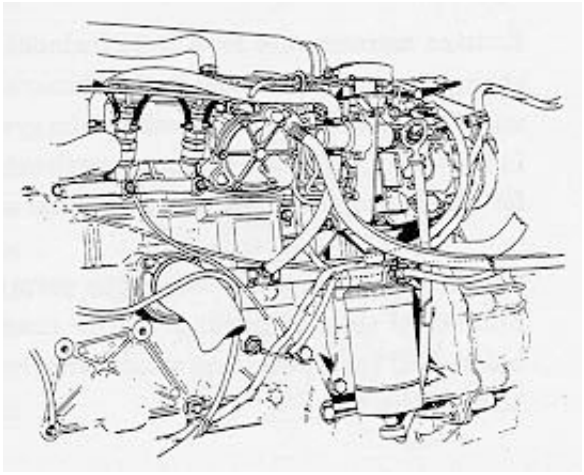
Routine maintenance for a D-24 includes frequent oil filter/oil, fuel filter and air filter changes at intervals listed in the Owner's Manual. Valves should be adjusted at 15,000 miles using the same replaceable shim system previously described for the B-21 gas engine. The shims for a B-21 cannot and should not be used on a D-24.

Selecting the correct diesel engine parts can be tricky. Some parts are available in a number of sizes or thicknesses (for example: cylinder head gaskets or cylinder head bolts).

Engine Identification Number



D-24 Diesel
Engine Identification Number and Engine Serial Number
Stamped under the vacuum pump on engine left side.



Internal engine parts and cylinder blocks are available for rebuilding D-24 engines. Some 1980-81 D-24 engines (up to engine No. 41875) have II mm threaded bolts that hold the cylinder head to the block. All other later engines from No. 41876 have 12 mm threaded bolts. When ordering top end parts, you will see part numbers listed for both. They do not interchange.

The diesel fuel system includes an injection pump, fuel lines and injectors.

The cooling system includes radiators, one thermostat for all D24s, upper and lower hoses and coolant. All of this is formulated to be compatible with the aluminum parts in the engine.

More about stats: All Volvo thermostats are identified in Volvo publications (service manuals) by Centigrade (C) and Fahrenheit (F). Also, the number listed indicates at what temperature the thermostat starts to open -- NOT when it's fully open. For instance, an 87' C stat opens at 87' C (1861 F). It is fully open at 102' C (236' F) and coolant will flow at 3.5 liters per second (about four quarts a second!).

The D-24 does not have a viscous-type cooling fan like all other Volvo engines. Instead, the fan is rigidly mounted and spins at all engine spins.

Engine -- Gas Four-Cylinder

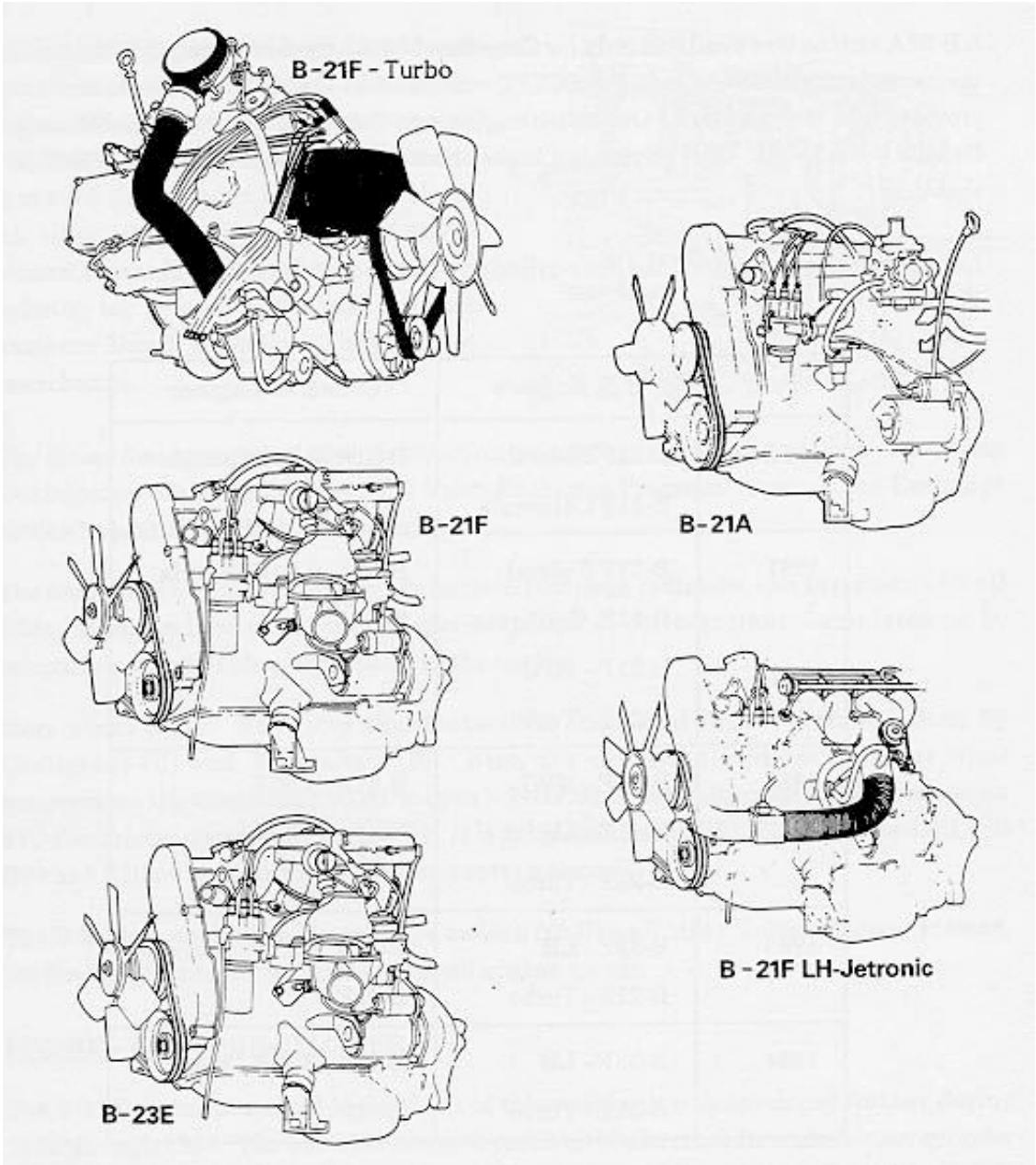
The B-21F engine described in Section I of this workbook was developed further during 1979 through 1984. The basic features -- a cast iron block, cross-flow aluminum cylinder head, overhead camshaft and fuel injection -- were retained on all versions. The B-21F engines were installed in both the United States and Canada. Canadian Volvos also could have a B-21A or B-23E.

A B-21A engine was available only for Canadian 240 DL models during this time. It has the same features as the B-21F EXCEPT without fuel injection. A single carburetor provides fuel to the engine. One other engine was fitted to certain 240 models only in Canada the B-23E. This engine is a higher horsepower version also used in Europe at that time.

Listed below is a recap of the four-cylinder engines installed on U.S. and Canadian Volvos:

Year	U.S. Engines	Canadian Engines
1979-80	B-21F Federal B-21F Calif.	B-21A, B-21F Canada
1981	B-21F Federal B-21F Calif. B-21F - MPG	B-21A, B-21F Canada B-23A

	B-21F - Turbo	
1982	B-21F - MPG B-21F - LH B-21F - Turbo	B-21A, B-23E
1983	B-23F - LH B-21F - Turbo	B-21A, B-21F - Turbo B-23E
1984	B-21F - LH B-21F - Turbo	B-21A, B-21F - Turbo B-23F - LH



As you can see, the B-21 has been produced in a few versions through the years! Let's take a close look at a few of those B-21F engine variations listed above.

1. The B-21F - MPG engine -- A special version of the B-21F designed for improved gas mileage. Differences included an "All marked camshaft and Volvo (instead of Bosch) ignition system.

Most 1981 B-21F - MPG engines originally came equipped with a white distributor cap. Nearly all other Volvo four-cylinder caps before and since 1981 are brown.

This same engine was fitted to both federal and California cars in 1981 but never on Volvos sold in Canada. In 1982 the B-21F - MPG received many updated parts and is also referred to as the B-21F (CI). To refresh your memory, CI means continuous injection.

2. The B-21F - LH and B-23F - LH -- These were fitted with an advanced fuel injection system called LH-Jetronic. Most fuel system parts are different than the Cl system used on all other B-21F and B-23F engines. A complete explanation of the LH system (along with the locations of key parts) appears in the 1982 Volvo New Car Features booklet. It's worth a look ...

The B-23 engine is a 2.3 liter (141 cubic inch) engine of an entirely new cylinder block casting. It is not a bored-out B-21F - LH engine block.

3. The B-21F - Turbo -- It contains a number of strengthened internal engine parts not found on the regular B-21F, B-21F - MPG and B-21/23F - LH engines. Special pistons, valves, camshaft and fuel/oil system parts keep things together when the turbocharger builds up the boost. An intercooler kit was first offered as an accessory in 1983. This popular kit provided a 24% jump in horsepower and was dealer installed. The intercooler first became standard equipment on late production (Spring 1984) 240 Turbo models. By the way, a turbocharged engine was never offered with the 260 models.

Remember that the easiest way to know what you're dealing with is to get the three-digit engine identification number off of the camshaft drive belt cover (in addition to the VIN). Have your Volvo technician Match the engine number to the engine numbers and VIN in his parts catalog It's not as complicated as it looks!

As tougher emissions standards came along, Volvo was prepared to meet them.

The Lambda-sond system (also called oxygen sensor feedback system) was pioneered by Volvo in 1977 on certain 240 models sold in California. It was installed on all U.S. B-21F and B-28F engines for the first time in 1980. The 1978 262C was the first Volvo sold in Canada to have this system.

As Section I indicated, this is a self-tuning engine control system designed to reduce emissions and improve fuel economy. Other car makers soon used a version of the Volvo Lambda-sond system.

For your reference, a recap of the various U.S. emissions systems combinations appears below:

U.S. 240/260 SERIES

Year	Model(s)	Engine Type	Exhaust Gas Recirculation		Air Injection Reactor		Catalytic Converter 3-Way		Catalytic Converter 2-Way		Crankcase Emission Control System		Altitude Compensating Regulator		Evaporative Control System		Lambda-Sond	
1979	242, 244, 245	B-21F	x					•	x		x	•			x	•		•
1979	242, 244, 245	B-21F					x	•			x	•			x	•	x	•
1979	262, 264, 265	B-27F					x	•			x	•			x	•	x	•
1980	242, 244, 245	B-21F					x	•			x	•			x	•	x	•
1980	262, 264, 265	B-28F					x	•			x	•			x	•	x	•
1981	242, 244, 245	B-21F A)					x	•			x	•			x	•	x	•
1981	242, 244, 245	B-21F - Turbo					x	•			x	•			x	•	x	•
1981	262, 264, 265	B-28F B)					x	•			x	•			x	•	x	•
1981	264, 265	D-24									x	•	x	•				
1982	242, 244, 245	B-21F C)					x	•			x	•			x	•	x	•
1982	242, 244, 245	B-21F - Turbo					x	•			x	•			x	•	x	•
1982	264	B-28F					x	•			x	•			x	•	x	•
1982	244, 245	D-24									x	•	x	•				
1983	242, 244, 245	B-23F					x	•			x	•			x	•	x	•
1983	242, 244, 245	B-21F - Turbo					x	•			x	•			x	•	x	•
1983	244, 245	D-24									x	•	x	•				
1984	242, 244, 245	B-23F					x	•			x	•			x	•	x	•
1984	242, 244, 245	B-21F - Turbo					x	•			x	•			x	•	x	•
1984	244, 245	D-24									x	•	x	•				
1985	244, 245	B-230F					x	•			x	•				•	x	•
1985	244, 245	B-21F - Turbo					x	•			x	•			x	•	x	•

x U.S. (49 State)
• California

A) Includes B-21F, B-21F-MPG
B) Includes B-28F, B-28F w/CIS
C) Includes B-21F, B-21F-LH

CANADA 240/260 SERIES

Year	Model(s)	Engine Type	Exhaust Gas Recirculation		Air Injection Reactor		Catalytic Converter 3-Way		Catalytic Converter 2-Way		Crankcase Emission Control System		Altitude Compensating Regulator		Evaporative Control System		Lambda-Sond		Pulsair	
1979	242, 244, 245	B-21A	x																x	•
1979	242, 244	B-21F																		
1979	262, 264, 265	B-27F					x	•									x	•		
1980	242, 244, 245	B-21F																		
1980	262, 264, 265	B-28F					x	•									x	•		
1980	244	B-21A	x																x	•
1981	242	B-21A	x																x	•
1981	244, 245	B-23E																	x	•
1981	262, 264, 265	B-28F					x	•									x	•		
1981	264, 265	D-24																		
1982	242	B-21A	x	•																
1982	244, 245	B-23E	x	•																
1982	262, 264, 265	B-28F					x	•									x	•		
1982	244, 245	D-24																		
1983	242	B-21A																	x	•
1983	244, 245	B-23E																		•
1983	242, 244, 245	B-21F - Turbo					x	•									x	•		
1983	244, 245	D-24	x	•																
1984	242	B-21A	x	•																•
1984	244, 245	B-23F					x	•									x	•		
1984	242, 244, 245	B-21F - Turbo					x	•									x	•		
1985	244, 245	B-230F					x	•										•		
1985	244, 245	B-21F - Turbo					x	•									x	•		

x with automatic transmission • with manual transmission

Volvos sold in Canada with the B-21A and B-23E engines continued with exhaust gas recirculation and pulse-air system to meet Canadian emissions law requirements. Volvos equipped with the B-23F - LH and B-21F - Turbo use the Lambda-sond System and a catalytic converter.

Engine systems previously detailed in Section I (cooling, A/C, etc.) apply as well to the 1979 through 1984 240 models.

Other "**tipS**" to remember from Workbook No. I also apply here. These include confirming the correct piston or camshaft needed by a letter stamp, avoiding camshaft mixing and knowing where to look when you need to find something.