

# ENGINE CODES

The engine codes consist of a series of letters and digits. The actual, broadly used engine code is 7 or 8 characters long. Hybrid models can have a second engine code that is 7 characters long, mild hybrids engine codes are 6 characters long. Different, more general engine codes are used for some certification and approval documents and are 6 to 8 characters long. An additional 2 characters are used to identify each specific engine variant with an MP or HP suffix to differentiate performance.

- [NOMECLATURE WHITEBLOCK ENGINES](#)
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# NOMECLATURE WHITEBLOCK ENGINES

Volvo **Whiteblock engines** were produced from **1990 to 2016**, with some variants continuing slightly beyond in limited use.

## ? Key Details:

- "**Whiteblock**" refers to a family of modular Volvo engines with an aluminum (hence the term "white") engine block and head.
- Used across **inline-5**, **inline-6**, and **inline-4** configurations.
- Known for their **modularity, durability, and turbocharged performance**.

## ?? Production Years by Engine Type:

Engine Type	Years Produced	Notes
<b>Inline-5</b>	1991-2016	Found in 850, S70, V70, C70, S60, XC90, etc.
<b>Inline-6</b>	1990-1998 (RWD)	960/S90/V90 (B6304, B6294)
	2006-2016 (FWD/AWD)	Used in S80, XC60, XC90 (3.0T, 3.2)
<b>Inline-4</b>	1996-2004	Less common; seen in S40/V40 and some Euro markets

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## The engine codes consist of a series of letters and digits:

- 1st: Fuel type (B/D/GB) **B** = Bensin (Petrol), **D** = Diesel, **GB** = Gas & Bensin
- 2nd: Number of cylinders (4/5/6)

- 3rd & 4th: Approximate displacement in deciliters, may be rounded up or down. (23 ~ = 2.3 L)
- 5th: Valves per cylinder (2/4)
- 6th: Induction method (S/T/F/G/GS/FS/FT/SG)
- 7th: Engine generation or engine variant (2/3/4/5/6/7/8/9/10/11)

<b>S</b> = standard (naturally aspirated),
<b>T</b> = turbocharged,
<b>F</b> = fuel injection with catalytic converter,
<b>G</b> = leaded fuel compatible,
<b>GS</b> = leaded fuel compatible, naturally aspirated,
<b>GS</b> = leaded fuel compatible, naturally aspirated,
<b>FS</b> = fuel injected standard (naturally aspirated) with catalytic converter
<b>FT</b> = fuel injected, turbocharged with catalytic converter,
<b>SG</b> = standard (naturally aspirated) compatible with alternative fuels ( <a href="#">LPG</a> / <a href="#">CNG</a> )

Engine codes are not necessarily unique to a specific engine as power levels can vary depending on market, manufacturer and model.

# NOMENCLATURE REDBLOCK ENGINES

## ? Key Details:

- **Configuration:** Inline-4 (mostly), with a few inline-6 versions (e.g. B30).
- **Construction:** Cast iron block with an aluminum head (except some early models).
- **Notable for:** Reliability, ease of maintenance, and popularity in tuning and racing circles.

## ?? Production Timeline:

Year Range	Notes
1974	Introduction in Volvo 240 with B21 engine.
Late 1970s	B21 and B19 engines used in 240/260 series.
1982-1985	B23 introduced—stronger block, used in 240, 740.
1985-1995	B230 series becomes dominant (B230F, B230FT, etc.)
1998	Final use in some base-model 940s and light trucks.

The B21, and related red block motors, were named using the following convention: B##X or B##VX. Where B stands for "bensin" (gasoline), ## stands for the displacement in decilitres, and X is an appropriate suffix. On the later low-friction motors, V denotes SOHC configuration (0) or DOHC configuration (4, for 4 valves per cylinder).

i.e. B230 (SOHC, 2.3 litres), B234 (2.3 litres, DOHC \* [4 valves per cylinder](#) \* 4 cylinders = 16 valves)

The following suffixes were commonly used by Volvo:

SUFFIX	NOTES
A	single constant-pressure type carburetor (such as the Pierburg 175 CDUS), typically with manual choke

SUFFIX	NOTES
<b>B</b>	high compression, with twin carburetor's, either twin Zenith-Stromberg carburetors or twin SU's.
<b>E</b>	high compression, no catalyst, mechanical fuel injection K-Jetronic
<b>BxxET</b>	K-Jetronic turbo
<b>B2xxET</b>	Motronic controlled electronic fuel injection, turbo.
<b>F</b>	low compression (9.8:1 on B230F, 9.5:1 on B280F, 10.0:1 on B234F and 10.7:1 on B204F), US/Europe version (F for Federal) with catalytic converter. Europe/APAC version, fuel injected (usually LH Jetronic or Bendix Regina)
<b>K</b>	<a href="#">single jet type carburetor (such as the Solex-Cisac carbs), typically with automatic choke</a>
<b>G</b>	LH2.4 Jetronic but without catalytic converter, CO adjustment on the AMM (similar to LH2.2 Jetronic). Some models without O2 sensor, others with O2 sensor which requires regular replacement at intervals due to lead fouling. For markets in which unleaded fuel was rare in the early 1990s, e.g. Eastern Europe.
<b>FB</b>	low compression version of B230F and fitted with Volvo's own "tuning package" (9.3:1), consisting of the "531" cylinder head, VX3 camshaft, and better flowing exhaust headers. Power output 131 PS (96 kW) and 185 N·m (136 lb·ft). LH2.4 Jetronic fuel injection, for the European and Australian markets. Available as an option on 1991 and 1992 models.
<b>FX</b>	<a href="#">same as the FB but with the distributor mounted on the block (instead of the head) for use in the 240.</a>
<b>FD</b>	<a href="#">essentially a B230F fitted with exhaust gas recirculation (EGR) and Pulse air system for cleaner emissions</a>
<b>T</b>	turbocharged, after E or F suffix (example: B21ET, B230FT)
<b>FK</b>	low pressure turbo, 1995 onward, not supplied in North America. Identical to the B230FT engine of that time but lowered boost level at 4 psi (0.28 bar)

(boost level was lowered because of taxes although only in some countries)

- FT - LH-Jetronic 2.2/2.4, turbocharger, 8.7:1 Static compression ratio achieved by dished pistons.
- FTX - Higher power output B230FT, approximately 190 PS (140 kW). (available through the Turbo+ package)