

DESCRIPTION AND OPERATION

ENGINE

Overview

The 3.7L (4V) is a V-6 engine with the following features:

- Dual overhead camshafts
- Four valves per cylinder
- **SFI**
- Composite upper and lower intake manifolds
- Aluminum cylinder heads
- An aluminum, 60-degree V-cylinder block
- Timing chain driven coolant pump
- **Ti-VCT** system

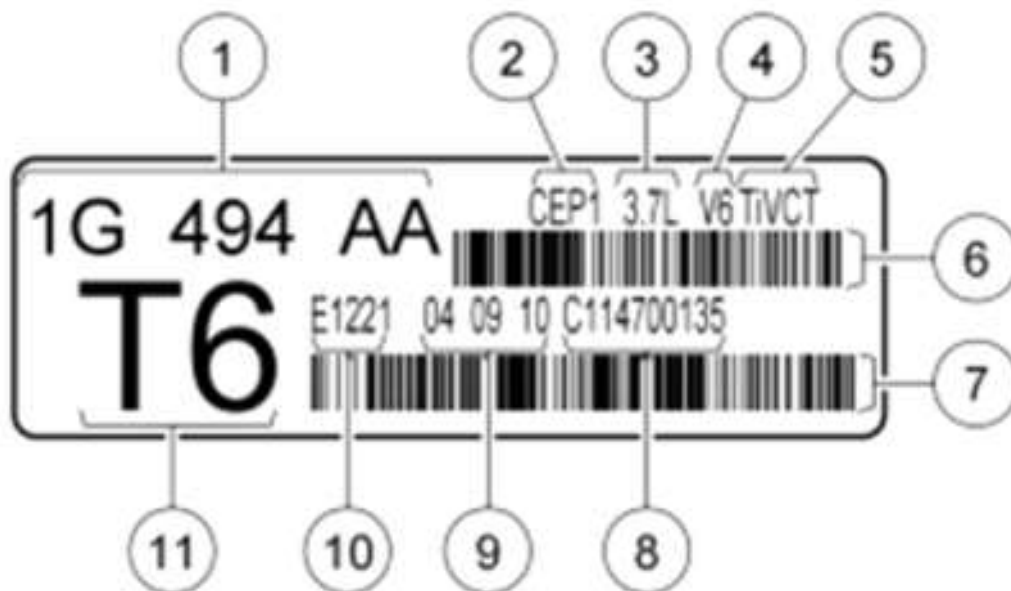
Engine Identification

For quick identification, refer to the safety certification decal.

- The decal is located on the LH front door lock face panel.

Engine Code Information Label

The engine code information label, located on the front side of the valve cover, contains the following:

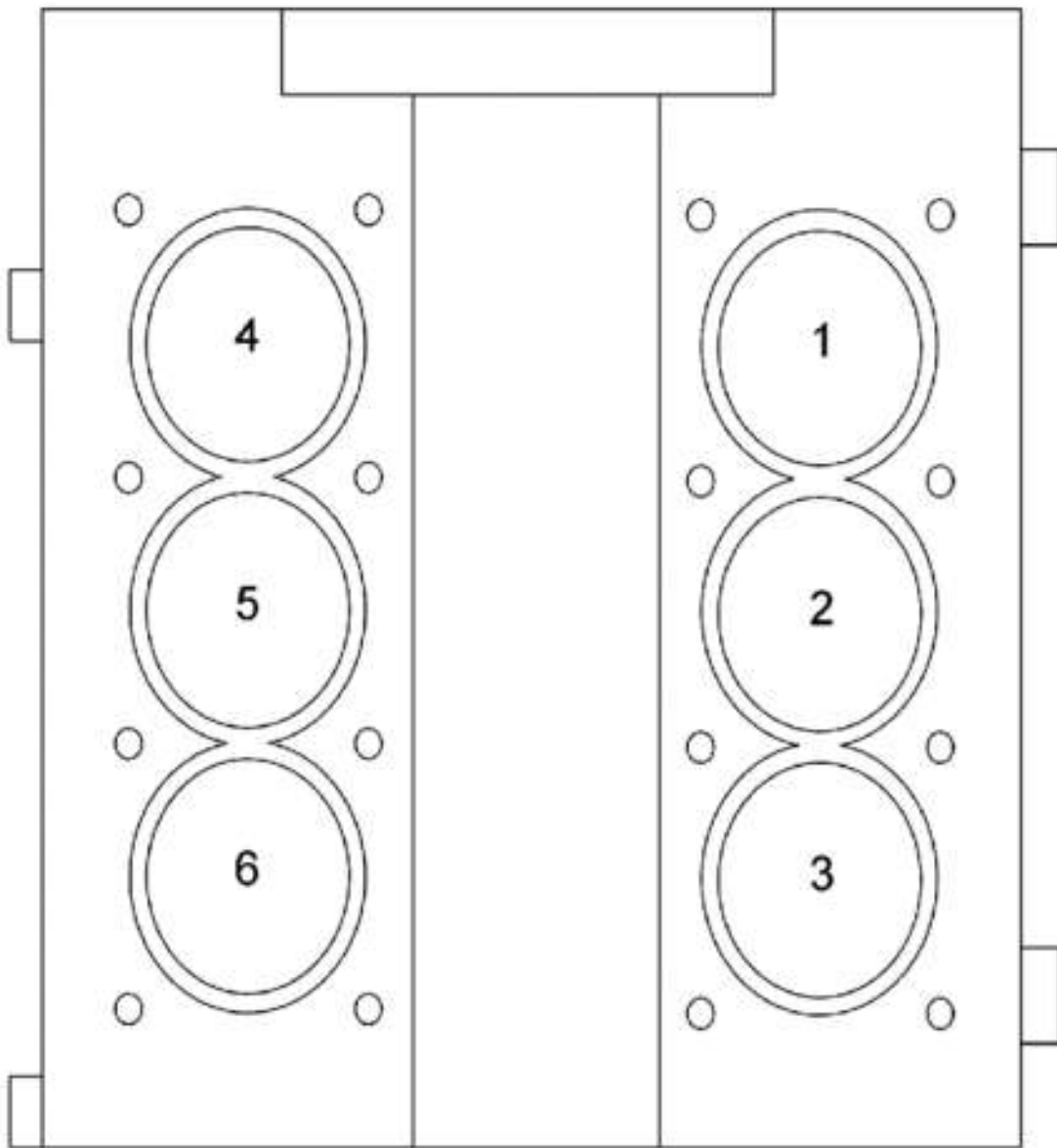


N0119147

Fig. 1: Identifying Engine Code Information Label
Courtesy of FORD MOTOR CO.

Item	Description
1	Engine part number
2	Engine plant (Cleveland)
3	Engine displacement
4	Engine configuration
5	Twin independent VCT
6	Bar code
7	Bar code
8	Running number
9	Engine build date (DDMMYY)
10	Plant shift line
11	Derivative code

Engine Cylinder Identification

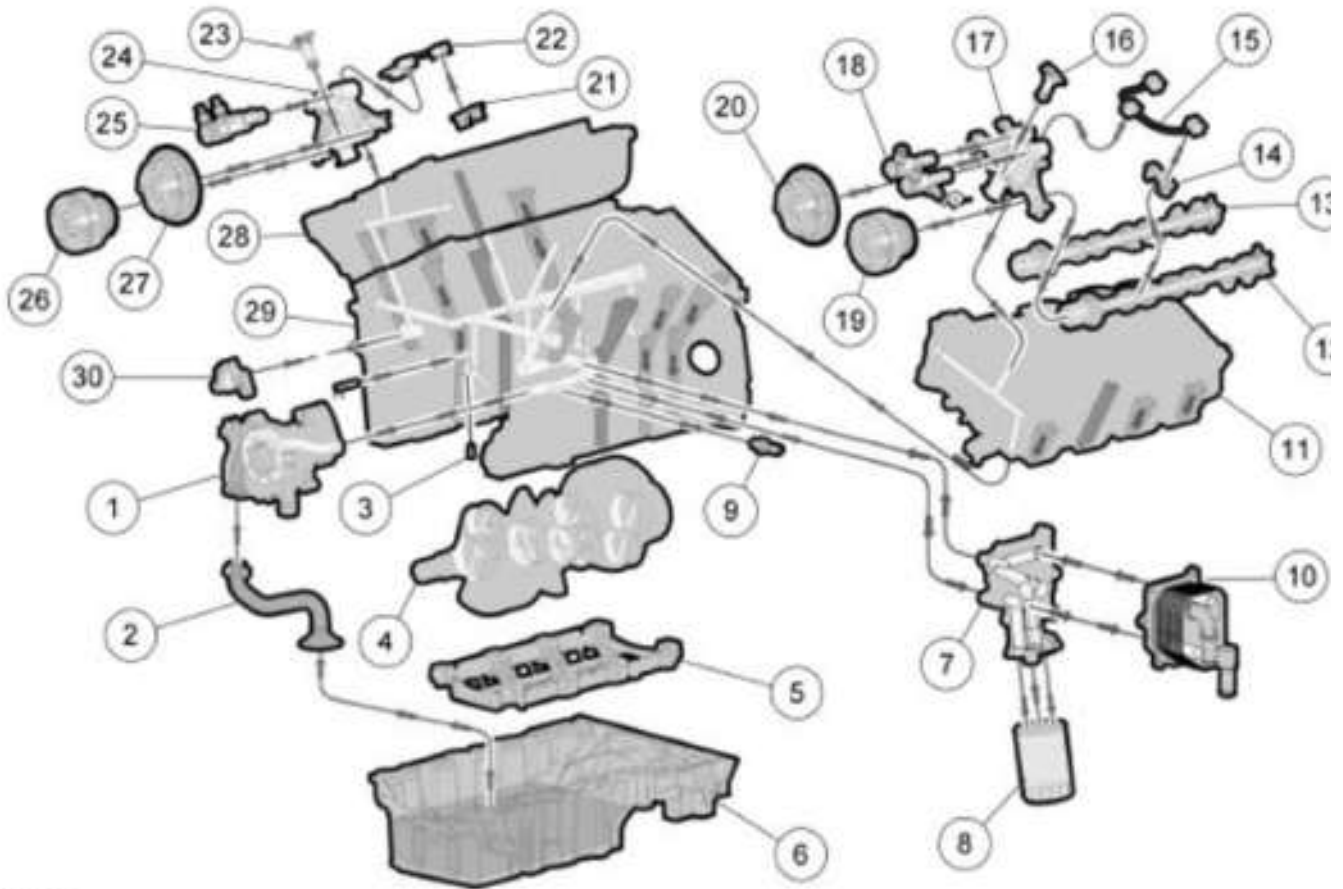


N0069904

Fig. 2: Identifying Engine Cylinder
Courtesy of FORD MOTOR CO.

System operation

Engine Oil Flow Illustration



N0137857

Item	Part Number	Description
1	6600	Oil pump
2	6622	Oil pump screen and pickup tube
3	6K868	Piston oil cool valve
4	6303	Crankshaft
5	6C364	Engine main bearing cap support
6	6675	Oil pan
7	6881	Oil filter adapter
8	6714	Oil filter
9	9278	EOP switch
10	6A642	Oil cooler
11	6049	LH cylinder head
12	6250	Exhaust camshaft
13	6250	Intake camshaft
14	6A258	LH camshaft cap
15	6K602	LH valve train oil feed tube
16	6K254	LH secondary timing chain tensioner
17	6B280	LH camshaft mega cap
18	6M280	LH intake and exhaust camshaft VCT oil control solenoid
19	6C525	LH exhaust camshaft VCT

20	6C524	LH intake camshaft VCT
21	6A280	RH camshaft cap
22	6K602	RH valve train oil feed tube
23	6C270	RH secondary timing chain tensioner
24	6B280	RH camshaft mega cap
25	6M280	RH intake and exhaust camshaft VCT oil control solenoid
26	6C525	RH exhaust camshaft VCT
27	6C524	RH intake camshaft VCT
28	6049	RH cylinder head
29	6010	Cylinder block
30	6K254	Primary timing chain tensioner

Lubrication System

The engine lubrication system is of the force-feed type in which oil is supplied under full pressure to the crankshaft, connecting rod bearings, timing chain tensioners, piston oil cooling jets and **VCT** solenoids. The flow of oil to the valve tappets and valve train is controlled by a restricting orifice located in the cylinder head, front camshaft cap.

The lubrication system is designed to provide optimum oil flow to critical components of the engine through its entire operating range.

The heart of the system is a positive displacement internal gear oil pump.

Generically, this design is known as a gerotor pump, which operates as follows:

- The oil pump is mounted on the front face of the cylinder block.
- The inner rotor is piloted on the crankshaft post and is driven through flats on the crankshaft.
- System pressure is limited by an integral, internally-vented relief valve which directs the bypassed oil back to the inlet side of the oil pump.
- Oil pump displacement has been selected to provide adequate volume to ensure sufficient oil pressure both at hot idle and maximum speed.
- The relief valve calibration protects the system from excessive pressure during high-viscosity conditions.
- The relief valve is designed to provide adequate connecting rod bearing lubrication under high-temperature and high-speed conditions.

Valve Train

The valve train uses **DAMB**. The camshaft lobes are positioned directly above mechanical buckets which are positioned on top of the valves.

Ti-VCT System

The **Ti-VCT** system allows variable control of the valves which optimizes combustion at full load providing improved power and low speed torque (broadening the torque curve) which enables variable valve overlap which provides better fuel economy and emissions and provides optimized cold start operation with improved exhaust emissions.