

Engine Mechanical - 2.0L (LTG) or 2.5L (LCV) - Component Locator - Malibu

DISASSEMBLED VIEWS (LCV)

This exploded view diagram illustrates the assembly of a mechanical component, likely a valve cover or similar engine part. The main assembly is shown in the center, with various parts numbered 1 through 23. A dashed line indicates the assembly path for the components on the left, including a hose (1), a bolt (2), a nut (3), a washer (4), a bolt (5), a nut (6), a bolt (7), and a bracket (8). A central vertical assembly shows a bolt (9) passing through a bracket (10), a spacer (11), a nut (12), and a bolt (13). A long cable (14) is shown on the right. A dashed box highlights a detail of a bracket (15) with a bolt (16). A large arrow points from this detail to a bracket (17) with a bolt (18). A large gasket (20) is shown at the bottom, with a bolt (21) passing through it. A bolt (22) and a nut (23) are shown on the left side of the gasket.

Callout	Component Name
1	PCV Tube Assembly
2	PCV Valve Bolt
3	PCV Valve
4	Camshaft Cover Plug

5	PCV Valve
6	Engine Coolant Air Bleed Pipe Bolt
7	PCV Valve Bolt
8	Engine Coolant Air Bleed Pipe
9	Ignition Coil Bolt
10	Ignition Coil
11	Spark Plug
12	Camshaft Cover Bolt
13	Camshaft Cover Bolt
14	Oil Level Indicator
15	Camshaft Housing Cover Heat Shield Bolt
16	Camshaft Housing Cover Heat Shield
17	Camshaft Position Actuator Control Solenoid Valve Bolt - Exhaust
18	Camshaft Position Actuator Control Solenoid Valve - Exhaust
19	Spark Plug Shield Seal
20	Camshaft Cover Gasket
21	Camshaft Cover
22	Camshaft Position Actuator Control Solenoid Valve - Intake
23	Camshaft Position Actuator Control Solenoid Valve Bolt - Intake

Cylinder Head and Components

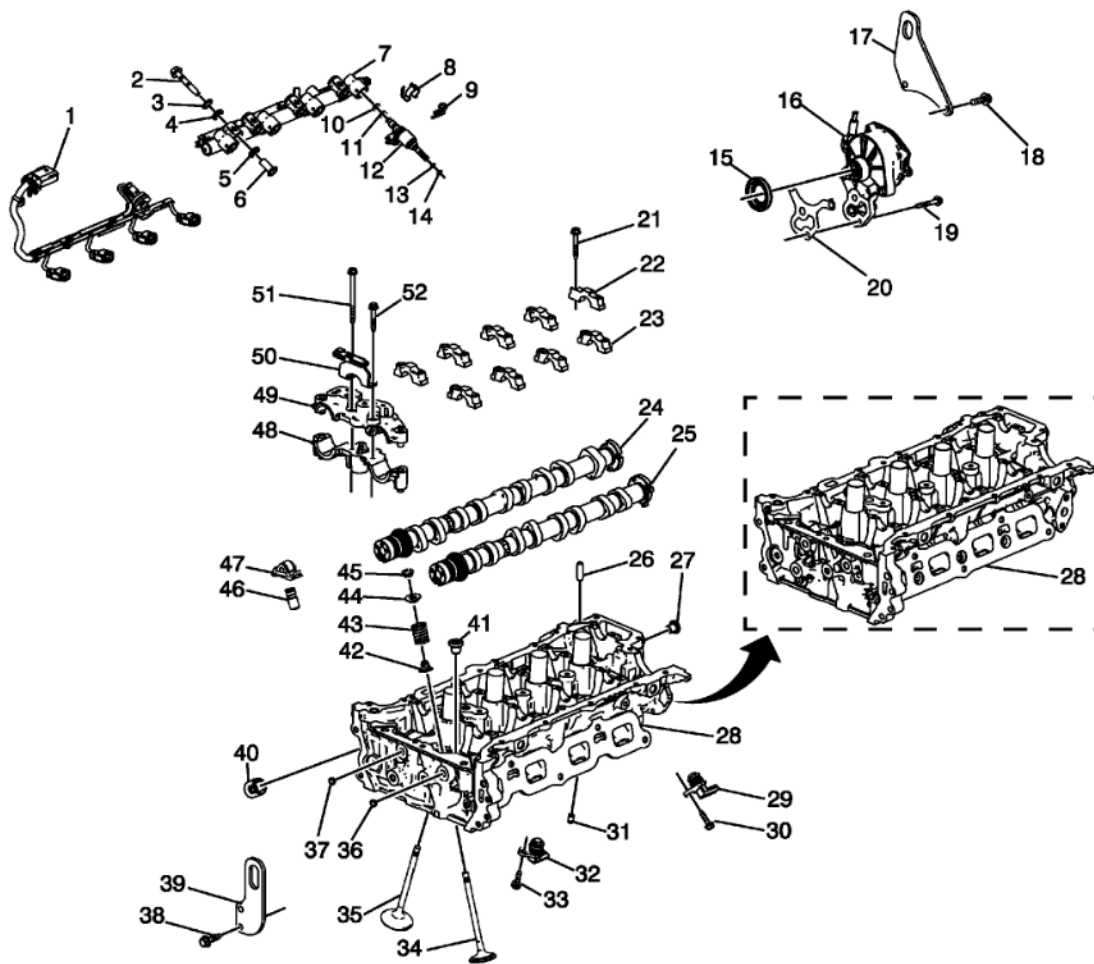


Fig. 2: Cylinder Head and Components
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Fuel Injector Wiring Harness
2	Fuel Injection Fuel Rail Bolt
3	Fuel Rail Insulator Bushing
4	Fuel Rail Insulator Washer
5	Fuel Rail Insulator Washer
6	Fuel Rail Insulator Sleeve
7	Fuel Injection Fuel Rail
8	Fuel Injector Holding Clamp
9	Fuel Injector Retainer
10	Fuel Injection Fuel Rail O-Ring Seal
11	Fuel Injector Seal Spacer
12	Direct Fuel Injector Assembly
13	Fuel Injector Nozzle Housing Seal

14	Fuel Injector Nozzle Housing Seal
15	Vacuum Pump Seal
16	Vacuum Pump Assembly
17	Engine Rear Lift Bracket
18	Engine Rear Lift Bracket Bolt
19	Vacuum Pump Bolt
20	Vacuum Pump Gasket
21	Camshaft Bearing Cap Bolt
22	Camshaft Bearing Cap
23	Camshaft Bearing Cap
24	Intake Camshaft
25	Exhaust Camshaft
26	Cylinder Head Locating Pin
27	Cylinder Head Oil Gallery Plug
28	Cylinder Head
29	Camshaft Position Sensor
30	Camshaft Position Sensor Bolt
31	Cylinder Head Oil Gallery Restrictor
32	Camshaft Position Sensor
33	Camshaft Position Sensor Bolt
34	Intake Valve
35	Exhaust Valve
36	Cylinder Head Oil Gallery Plug
37	Cylinder Head Oil Gallery Plug
38	Engine Front Lift Bracket Bolt
39	Engine Front Lift Bracket
40	Valve Lifter Follower
41	Cylinder Head Core Hole Plug
42	Valve Stem Oil Seal
43	Valve Spring
44	Valve Spring Retainer
45	Valve Stem Key
46	Hydraulic Valve Lash Adjuster
47	Valve Rocker Arm
48	Camshaft Bearing Front Lower Cap
49	Camshaft Bearing Front Cap
50	Timing Chain Cam to Cam Guide
51	Camshaft Bearing Cap Bolt
52	Timing Chain Guide Bolt

Intake Manifold and Components

14	Fuel Pump Insulator
15	Fuel Pump Bolt
16	Fuel Pump
17	Fuel Pump Housing Gasket
18	Fuel Pump Housing O-Ring Seal
19	Throttle Body Assembly Gasket
20	Throttle Body Assembly
21	Throttle Body Assembly Bolt
22	Intake Manifold Gasket

Exhaust Manifold and Components

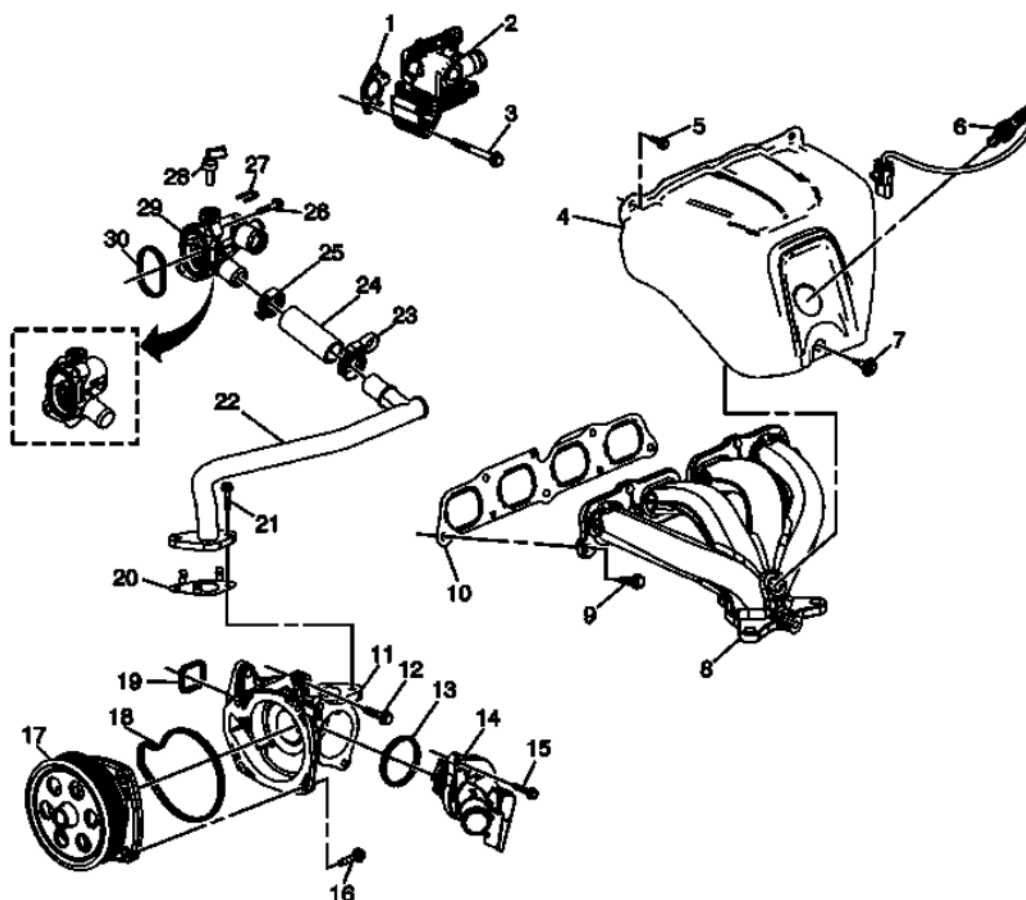


Fig. 4: Exhaust Manifold and Components
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Secondary Air Injection Check Valve Gasket

2	Secondary Air Injection Check Valve
3	Secondary Air Injection Check Valve Bolt
4	Exhaust Manifold Heat Shield
5	Exhaust Manifold Heat Shield Bolt
6	Heated Oxygen Sensor Assembly
7	Exhaust Manifold Heat Shield Bolt
8	Exhaust Manifold
9	Exhaust Manifold Bolt
10	Exhaust Manifold Gasket
11	Water Pump Rear Housing
12	Water Pump Bolt
13	Engine Coolant Thermostat Housing Gasket
14	Engine Coolant Thermostat Housing
15	Engine Coolant Thermostat Housing Bolt
16	Water Pump Housing Bolt
17	Water Pump Front Housing
18	Water Pump Inlet Gasket
19	Water Pump Gasket
20	Thermal Bypass Pipe Gasket
21	Thermal Bypass Pipe Bolt
22	Thermal Bypass Pipe
23	Thermal Bypass Hose Clamp
24	Thermal Bypass Hose
25	Thermal Bypass Hose Clamp
26	Water Outlet Bolt
27	Engine Coolant Temperature Sensor Retainer
28	Engine Coolant Temperature Sensor
29	Water Outlet
30	Water Outlet Gasket

Engine Block and Components

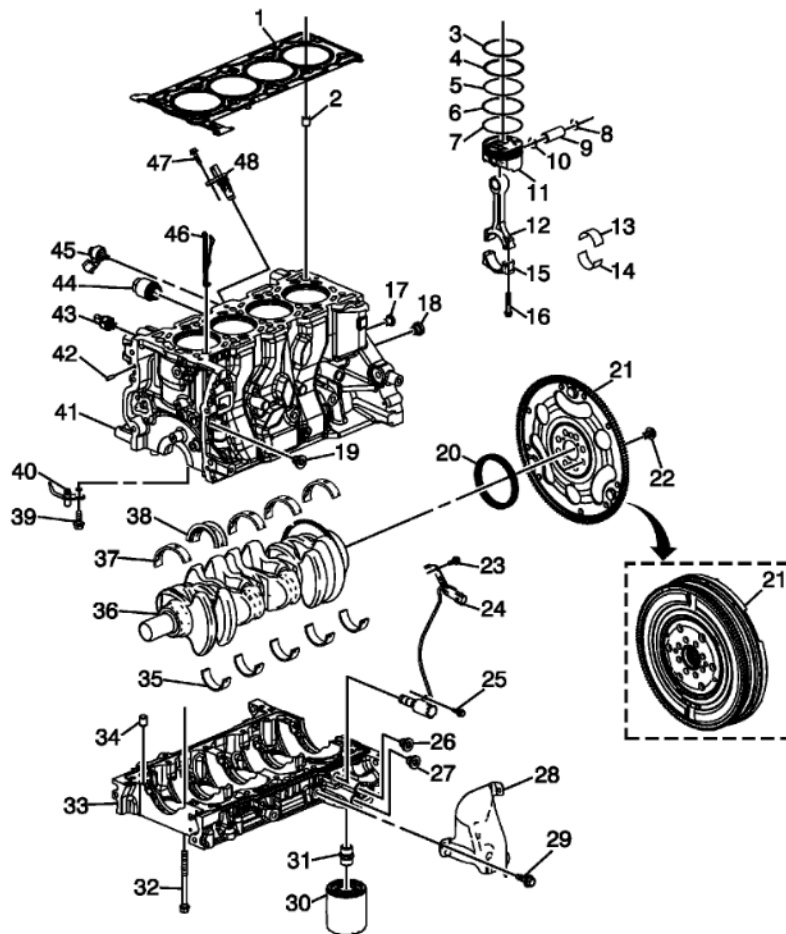


Fig. 5: Engine Block and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Cylinder Head Gasket
2	Cylinder Head Locating Pin
3	Piston Upper Compression Ring
4	Piston Lower Compression Ring
5	Piston Oil Ring Rail
6	Piston Oil Ring Rail Spacer
7	Piston Oil Ring Rail
8	Piston Pin Retainer
9	Piston Pin
10	Piston Pin Retainer
11	Piston
12	Connecting Rod
13	Connecting Rod Bearing

14	Connecting Rod Bearing
15	Connecting Rod Cap
16	Connecting Rod Bolt
17	Engine Block Oil Gallery Plug
18	Engine Block Oil Gallery Plug
19	Engine Block Oil Gallery Plug
20	Crankshaft Rear Oil Seal
21	Automatic Transmission Flex Plate
22	Automatic Transmission Flex Plate Bolt
23	Oil Pump Flow Control Valve Assembly Bolt
24	Oil Pump Flow Control Valve Assembly
25	Oil Pump Flow Control Valve Assembly Bolt
26	Engine Block Oil Gallery Plug
27	Engine Block Oil Gallery Plug
28	Oil Pump and Compressor Heat Shield
29	Oil Pump and Compressor Heat Shield Bolt
30	Oil Filter
31	Oil Filter Fitting
32	Lower Crankcase Bolt
33	Lower Crankcase
34	Lower Crankcase Locating Pin
35	Crankshaft Lower Bearing
36	Crankshaft
37	Crankshaft Upper Bearing
38	Crankshaft Upper Thrust Bearing
39	Piston Oil Nozzle Bolt
40	Piston Oil Nozzle
41	Engine Block
42	Engine Front Cover Locating Pin
43	Engine Oil Pressure Sensor
44	Engine Coolant Heater
45	Knock Sensor
46	Engine Block Coolant Baffle
47	Crankshaft Position Sensor Bolt
48	Crankshaft Position Sensor

Upper and Lower Oil Pan and Components

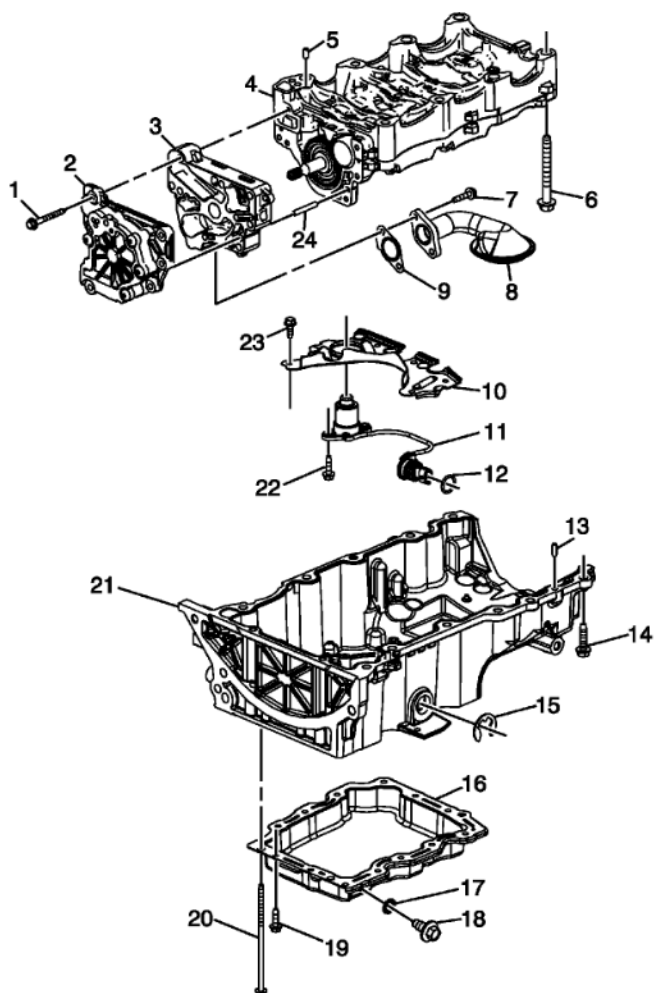


Fig. 6: Upper and Lower Oil Pan and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Oil Pump Assembly Bolt
2	Oil Pump Assembly
3	Oil Pump Cover
4	Balancer Shaft Module
5	Balancer Shaft Housing Locating Pin
6	Balancer Shaft Housing Bolt
7	Oil Pump Suction Pipe Bolt
8	Oil Pump Screen Assembly with Suction Pipe
9	Oil Pump Screen Gasket
10	Oil Pan Baffle
11	Engine Oil Level Indicator Switch
12	Engine Oil Level Indicator Seal
13	Oil Pan Locating Pin

14	Oil Pan Bolt
15	Engine Oil Level Sensor Lead Clip
16	Lower Oil Pan
17	Oil Pan Drain Plug Seal
18	Oil Pan Drain Plug
19	Oil Pan Bolt
20	Oil Pan Bolt
21	Upper Oil Pan
22	Engine Oil Level Indicator Switch Bolt
23	Oil Pan Baffle Bolt
24	Oil Pump Locating Pin

Timing Chain and Components

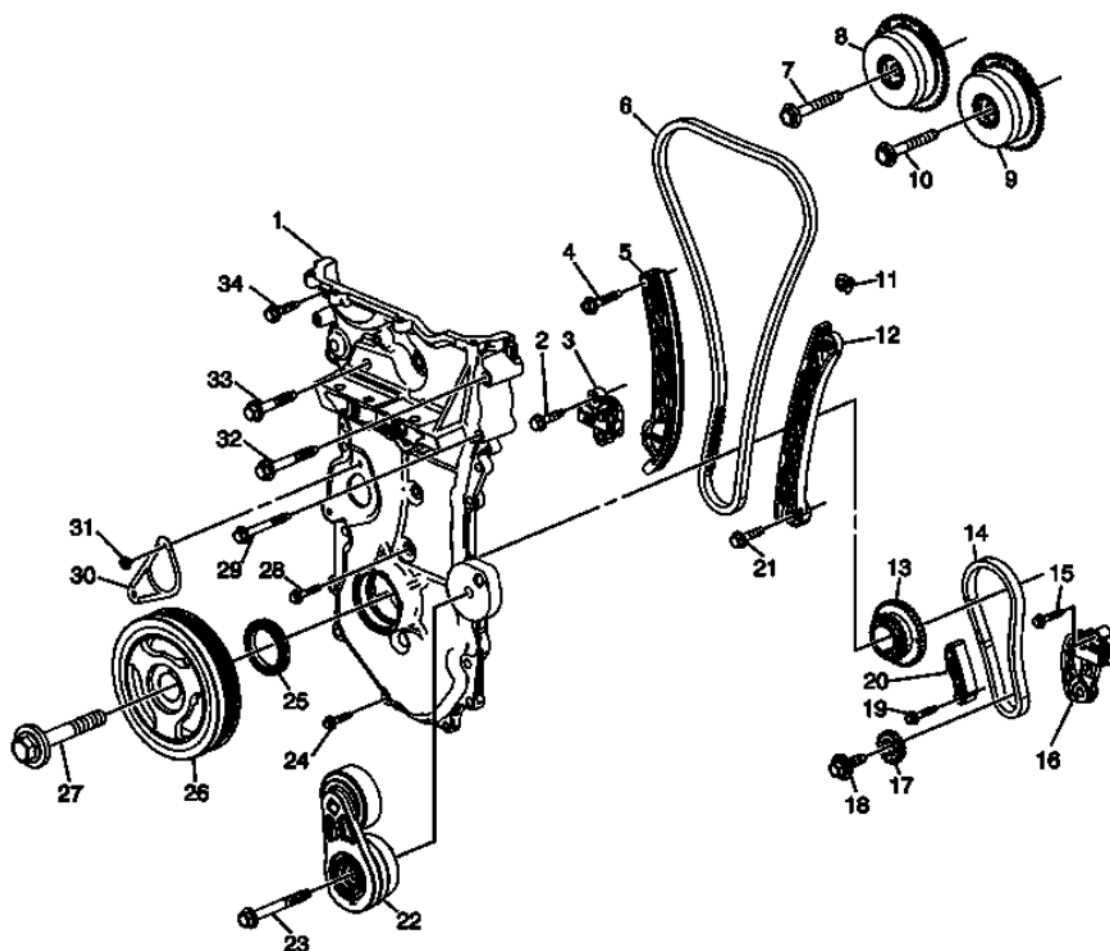


Fig. 7: Timing Chain and Components
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Engine Front Cover
2	Timing Chain Tensioner Bolt
3	Timing Chain Tensioner
4	Timing Chain Tensioner Pivot Arm Bolt
5	Timing Chain Tensioner Pivot Arm
6	Timing Chain
7	Camshaft Position Actuator Bolt
8	Intake Camshaft Position Actuator
9	Exhaust Camshaft Position Actuator
10	Camshaft Position Actuator Bolt
11	Timing Chain Oil Nozzle
12	Timing Chain Guide
13	Crankshaft Sprocket
14	Balancer Chain
15	Balancer Chain Tensioner Bolt
16	Balancer Chain Tensioner
17	Balancer Shaft Driven Sprocket
18	Balancer Shaft Sprocket Bolt
19	Balancer Chain Guide Bolt
20	Balancer Chain Guide
21	Timing Chain Guide Bolt
22	Drive Belt Tensioner
23	Drive Belt Tensioner Bolt
24	Engine Front Cover Bolt
25	Crankshaft Front Oil Seal
26	Crankshaft Balancer
27	Crankshaft Balancer Bolt
28	Engine Front Cover Bolt
29	Engine Front Cover Bolt
30	Timing Chain Tensioner Cover
31	Timing Chain Tensioner Cover Bolt
32	Engine Front Cover Bolt
33	Engine Front Cover Bolt
34	Engine Front Cover Bolt

DISASSEMBLED VIEWS (LTG)

Camshaft Cover and Components

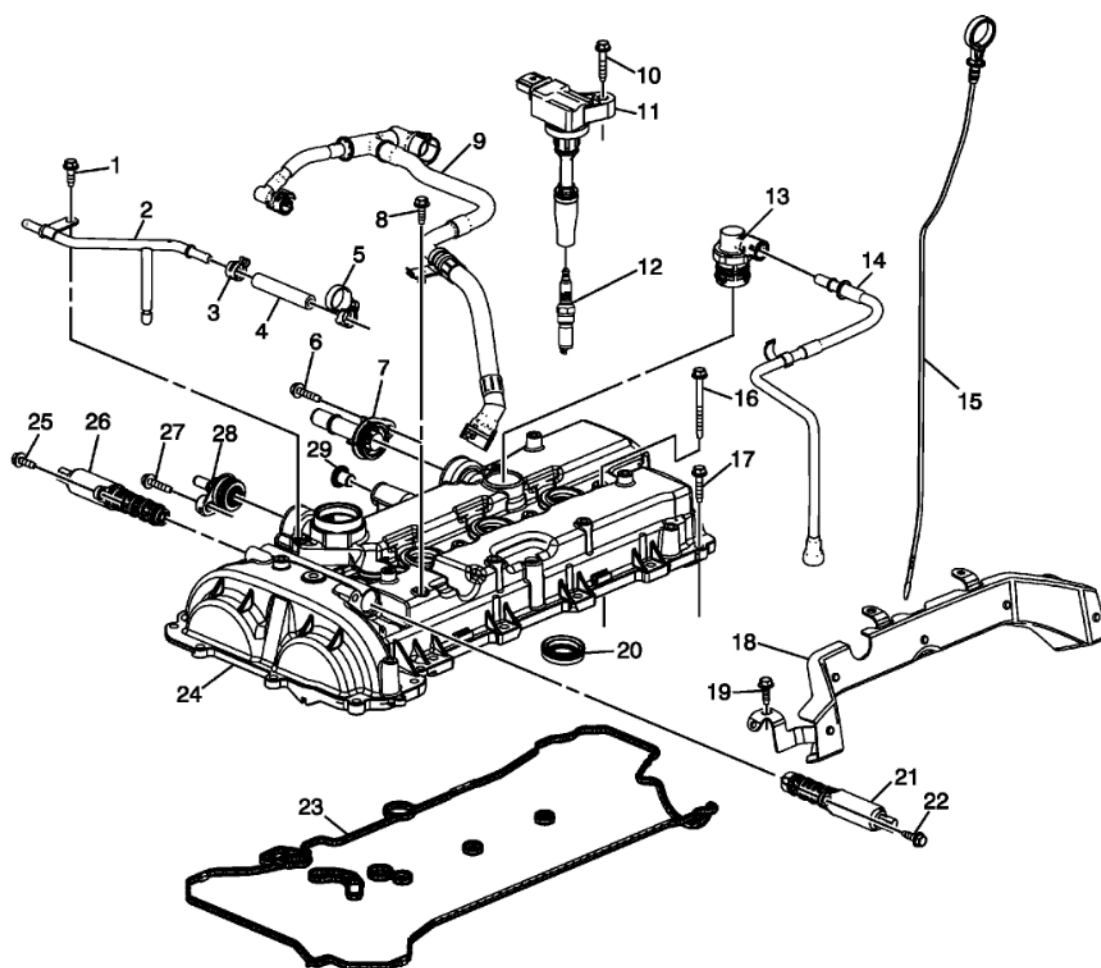


Fig. 8: Camshaft Cover and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Engine Coolant Air Bleed Pipe Bolt
2	Engine Coolant Air Bleed Pipe
3	Engine Coolant Air Bleed Hose Clamp
4	Engine Coolant Air Bleed Hose
5	Engine Coolant Air Bleed Hose Clamp
6	PCV Valve Bolt
7	PCV Valve
8	PCV Tube Assembly Bolt
9	PCV Tube Assembly
10	Ignition Coil Bolt
11	Ignition Coil
12	Spark Plug
13	PCV Valve Assembly

14	PCV Tube Assembly
15	Oil Level Indicator
16	Camshaft Cover Bolt
17	Camshaft Cover Bolt
18	Camshaft Housing Cover Heat Shield
19	Camshaft Housing Cover Heat Shield Bolt
20	Spark Plug Shield Seal
21	Camshaft Position Actuator Control Solenoid Valve - Exhaust
22	Camshaft Position Actuator Control Solenoid Valve Bolt - Exhaust
23	Camshaft Cover Gasket
24	Camshaft Cover
25	Camshaft Position Actuator Control Solenoid Valve Bolt - Intake
26	Camshaft Position Actuator Control Solenoid Valve - Intake
27	PCV Valve Bolt
28	PCV Valve
29	Camshaft Cover Plug

Cylinder Head and Components

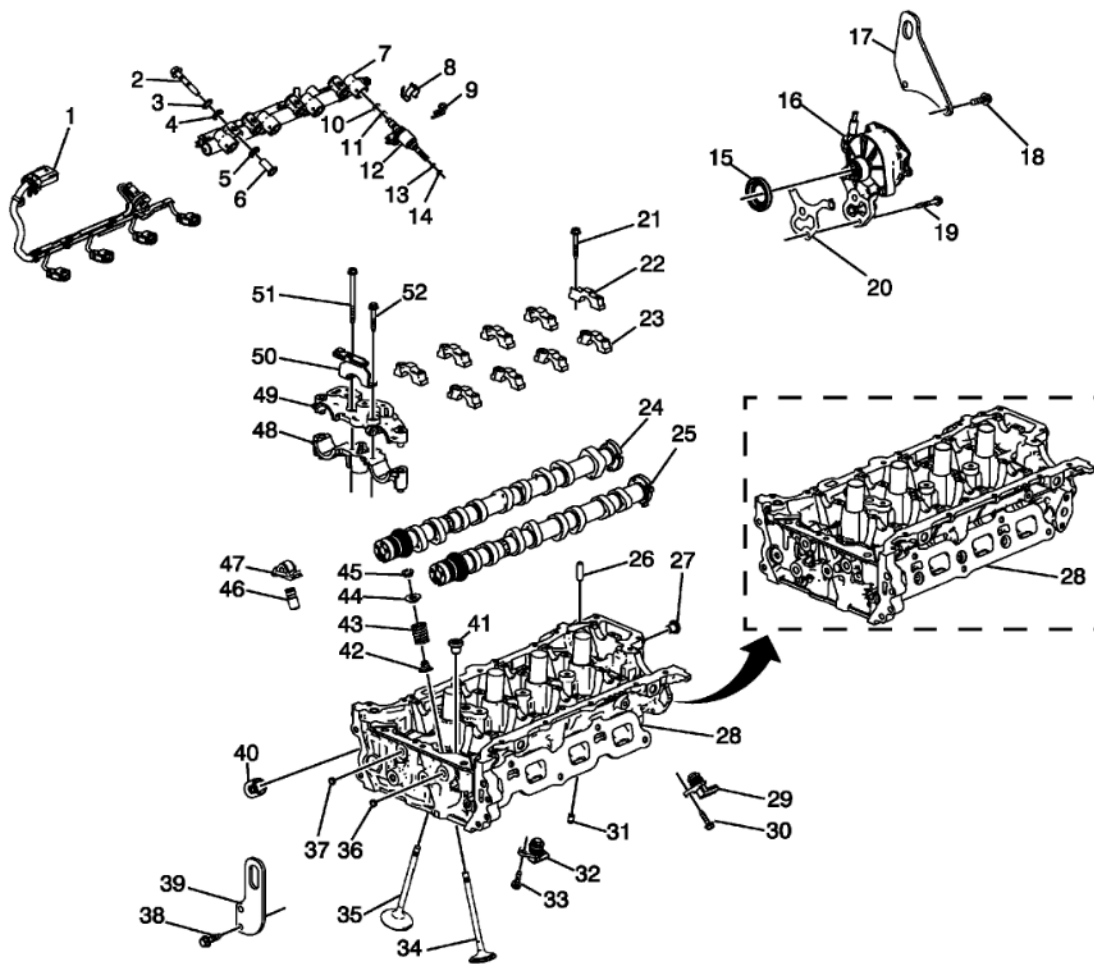


Fig. 9: Cylinder Head and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Fuel Injector Wiring Harness
2	Fuel Injection Fuel Rail Bolt
3	Fuel Rail Insulator Bushing
4	Fuel Rail Insulator Washer
5	Fuel Rail Insulator Washer
6	Fuel Rail Insulator Sleeve
7	Fuel Injection Fuel Rail
8	Fuel Injector Holding Clamp
9	Fuel Injector Retainer
10	Fuel Injection Fuel Rail O-Ring Seal
11	Fuel Injector Seal Spacer
12	Direct Fuel Injector Assembly
13	Fuel Injector Nozzle Housing Seal

14	Fuel Injector Nozzle Housing Seal
15	Vacuum Pump Seal
16	Vacuum Pump Assembly
17	Engine Rear Lift Bracket
18	Engine Rear Lift Bracket Bolt
19	Vacuum Pump Bolt
20	Vacuum Pump Gasket
21	Camshaft Bearing Cap Bolt
22	Camshaft Bearing Cap
23	Camshaft Bearing Cap
24	Intake Camshaft
25	Exhaust Camshaft
26	Cylinder Head Locating Pin
27	Cylinder Head Oil Gallery Plug
28	Cylinder Head
29	Camshaft Position Sensor
30	Camshaft Position Sensor Bolt
31	Cylinder Head Oil Gallery Restrictor
32	Camshaft Position Sensor
33	Camshaft Position Sensor Bolt
34	Intake Valve
35	Exhaust Valve
36	Cylinder Head Oil Gallery Plug
37	Cylinder Head Oil Gallery Plug
38	Engine Front Lift Bracket Bolt
39	Engine Front Lift Bracket
40	Valve Lifter Follower
41	Cylinder Head Core Hole Plug
42	Valve Stem Oil Seal
43	Valve Spring
44	Valve Spring Retainer
45	Valve Stem Key
46	Hydraulic Valve Lash Adjuster
47	Valve Rocker Arm
48	Camshaft Bearing Front Lower Cap
49	Camshaft Bearing Front Cap
50	Timing Chain Cam to Cam Guide
51	Camshaft Bearing Cap Bolt
52	Timing Chain Guide Bolt

Intake Manifold and Components

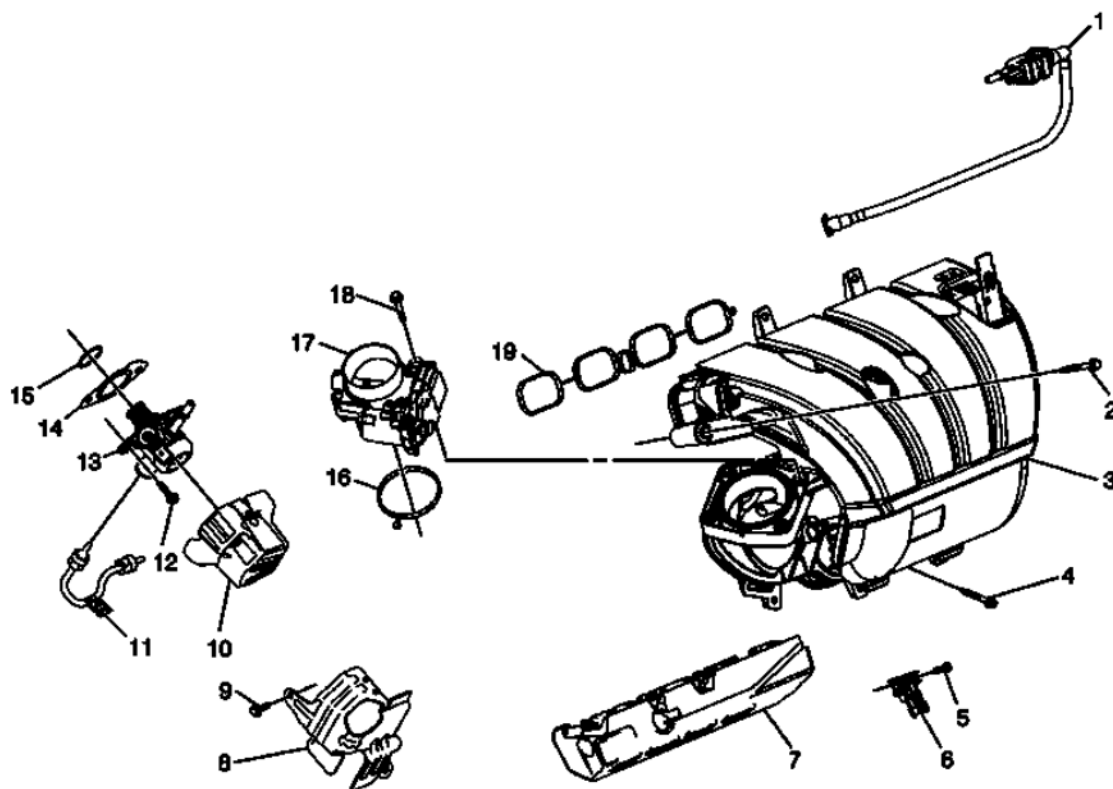


Fig. 10: Intake Manifold and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Evaporative Emission Canister Purge Valve Assembly
2	Intake Manifold Bolt
3	Intake Manifold
4	Intake Manifold Bolt
5	Manifold Absolute Pressure (MAP) Sensor Bolt
6	Manifold Absolute Pressure (MAP) Sensor
7	Fuel Rail Noise Shield
8	Fuel Pump Cover
9	Fuel Pump Cover Bolt
10	Fuel Pump Insulator
11	Fuel Feed Intermediate Pipe Assembly
12	Fuel Pump Bolt
13	Fuel Pump

14	Fuel Pump Housing Gasket
15	Fuel Pump Housing O-Ring Seal
16	Throttle Body Assembly Gasket
17	Throttle Body Assembly
18	Throttle Body Assembly Bolt
19	Intake Manifold Gasket

Turbocharger and Components

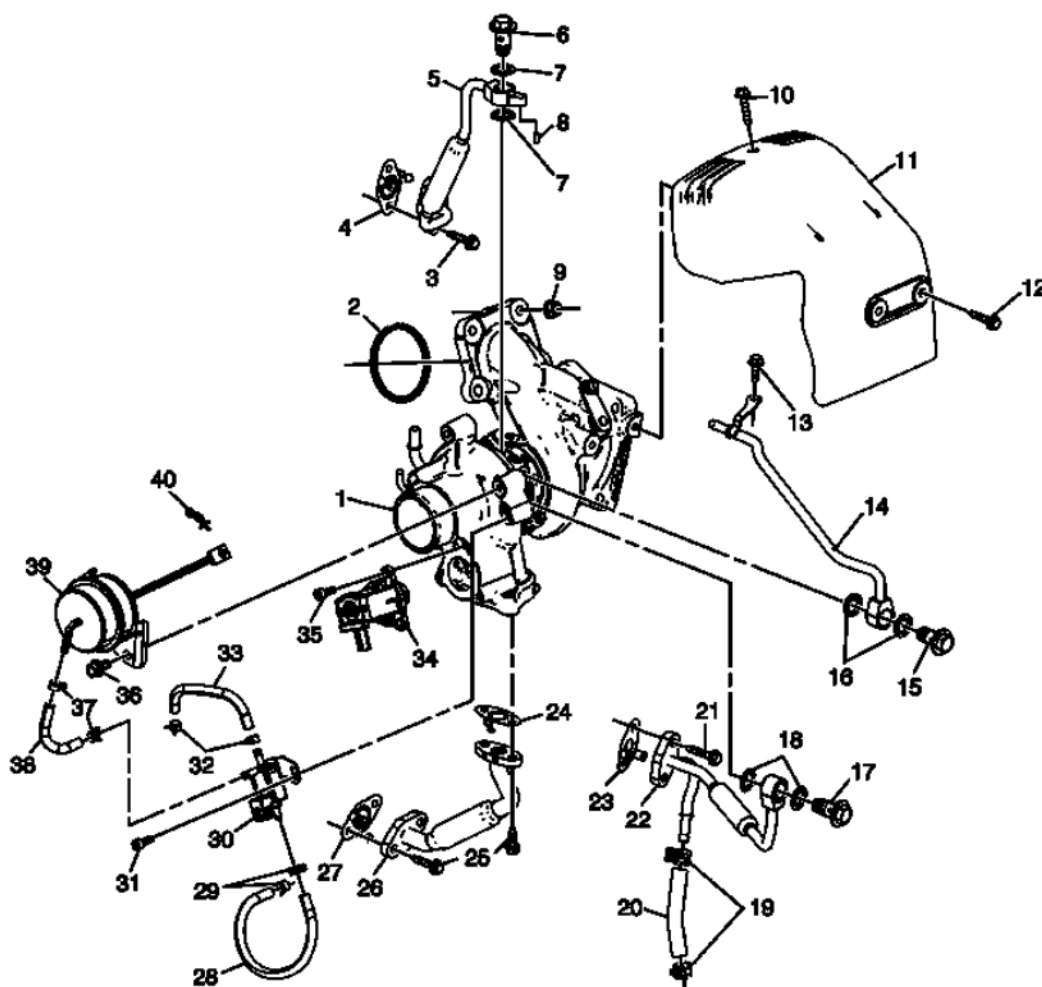


Fig. 11: Turbocharger and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Turbocharger Gasket
2	Turbocharger Oil Feed Pipe Bolt
3	Turbocharger Oil Feed Pipe Gasket
4	Turbocharger Oil Feed Pipe Assembly

5	Turbocharger Oil Feed Pipe Bolt
6	Turbocharger Oil Feed Pipe Washer
7	Turbocharger Oil Feed Pipe Anti-Rotate Roll Pin
8	Turbocharger Nut
9	Turbocharger
10	Turbocharger Heat Shield Bolt
11	Turbocharger Heat Shield
12	Turbocharger Heat Shield Bolt
13	Turbocharger Coolant Return Pipe Bolt
14	Turbocharger Coolant Return Pipe Assembly
15	Turbocharger Coolant Return Pipe Bolt
16	Turbocharger Coolant Return Pipe Washer
17	Turbocharger Coolant Feed Pipe Bolt
18	Turbocharger Coolant Feed Pipe Washer
19	Turbocharger Coolant Feed Hose Clamp
20	Turbocharger Coolant Feed Hose
21	Turbocharger Coolant Feed Pipe Bolt
22	Turbocharger Coolant Feed Pipe Assembly
23	Turbocharger Coolant Feed Pipe Gasket
24	Turbocharger Oil Return Pipe Gasket
25	Turbocharger Oil Return Pipe Bolt
26	Turbocharger Oil Return Pipe Assembly
27	Turbocharger Oil Return Pipe Gasket
28	Turbocharger Wastegate Regulator Solenoid Valve Hose
29	Turbocharger Wastegate Regulator Solenoid Valve Hose Clamp
30	Turbocharger Wastegate Regulator Solenoid Valve
31	Turbocharger Wastegate Regulator Solenoid Valve Bolt
32	Turbocharger Wastegate Regulator Solenoid Valve Hose Clamp
33	Turbocharger Wastegate Regulator Solenoid Valve Hose
34	Turbocharger Air Bypass Valve Solenoid
35	Turbocharger Air Bypass Valve Solenoid Bolt
36	Turbocharger Wastegate Actuator Bolt
37	Turbocharger Wastegate Actuator Hose Clamp
38	Turbocharger Wastegate Actuator Hose
39	Turbocharger Wastegate Actuator
40	Turbocharger Wastegate Actuator Arm Retaining Clip

Exhaust Manifold and Components

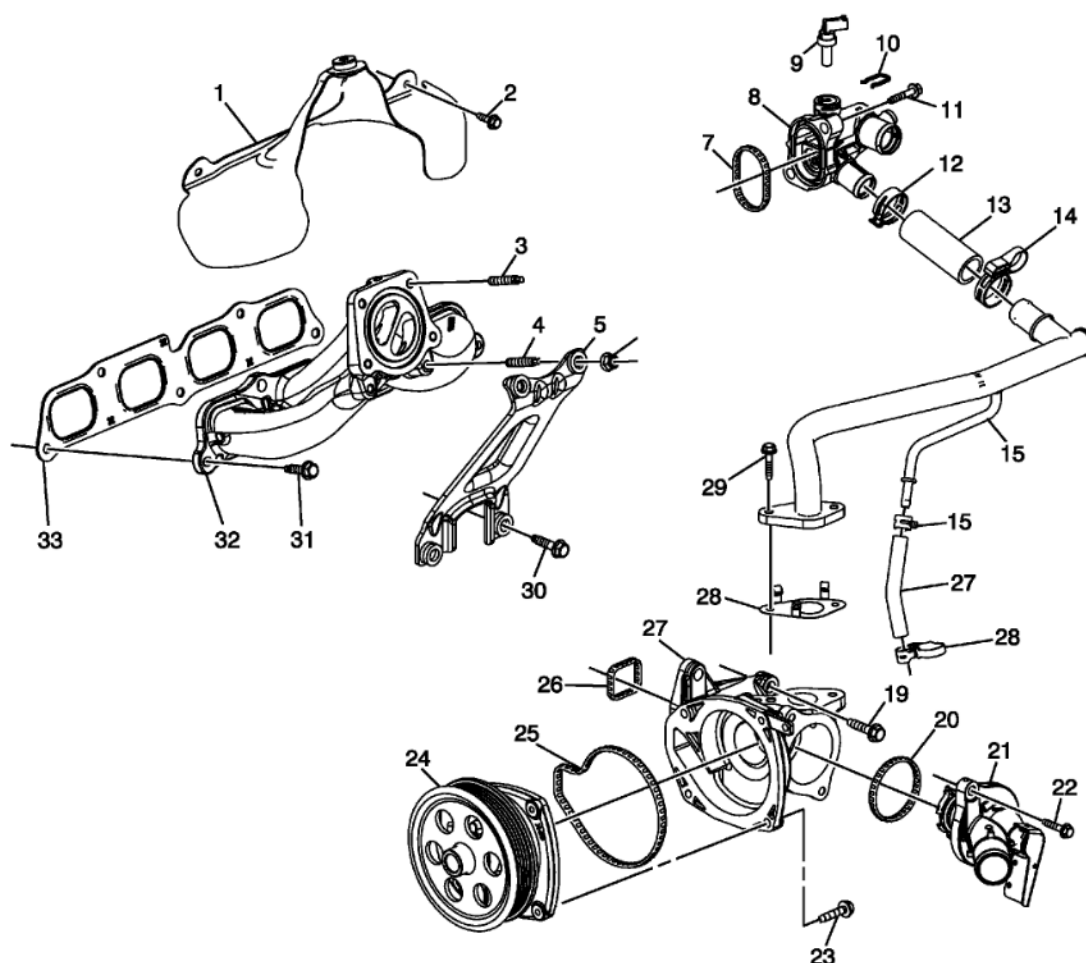


Fig. 12: Exhaust Manifold and Components
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Exhaust Manifold Heat Shield
2	Exhaust Manifold Heat Shield Bolt
3	Exhaust Manifold Stud
4	Exhaust Manifold Stud
5	Exhaust Manifold Brace
6	Exhaust Manifold Brace Nut
7	Water Outlet Gasket
8	Water Outlet
9	Engine Coolant Temperature Sensor
10	Engine Coolant Temperature Sensor Retainer
11	Water Outlet Bolt
12	Thermal Bypass Hose Clamp
13	Thermal Bypass Hose

14	Thermal Bypass Hose Clamp
15	Thermal Bypass Pipe
16	Engine Oil Cooler Coolant Outlet Hose Clamp
17	Engine Oil Cooler Coolant Outlet Hose
18	Engine Oil Cooler Coolant Outlet Hose Clamp
19	Water Pump Bolt
20	Engine Coolant Thermostat Housing Gasket
21	Engine Coolant Thermostat Housing
22	Engine Coolant Thermostat Housing Bolt
23	Water Pump Housing Bolt
24	Water Pump Front Housing
25	Water Pump Inlet Gasket
26	Water Pump Gasket
27	Water Pump Rear Housing
28	Thermal Bypass Pipe Gasket
29	Thermal Bypass Pipe Bolt
30	Exhaust Manifold Brace Bolt
31	Exhaust Manifold Bolt
32	Exhaust Manifold
33	Exhaust Manifold Gasket

Engine Block and Components

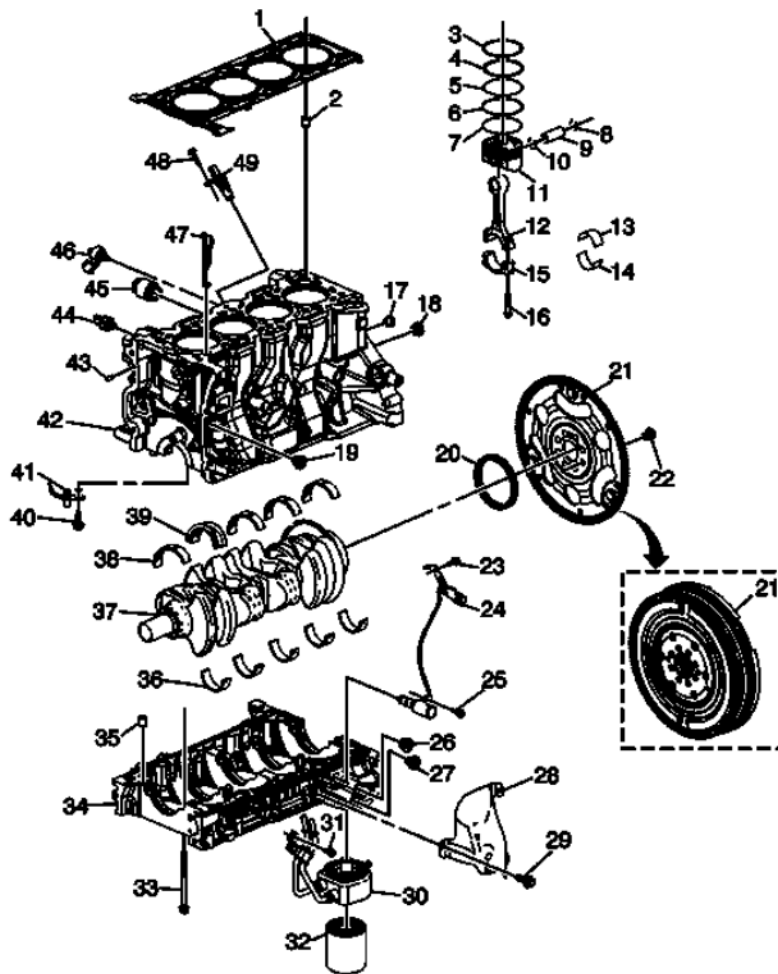


Fig. 13: Engine Block and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Cylinder Head Gasket
2	Cylinder Head Locating Pin
3	Piston Upper Compression Ring
4	Piston Lower Compression Ring
5	Piston Oil Ring Rail
6	Piston Oil Ring Rail Spacer
7	Piston Oil Ring Rail
8	Piston Pin Retainer
9	Piston Pin
10	Piston Pin Retainer
11	Piston
12	Connecting Rod
13	Connecting Rod Bearing

14	Connecting Rod Bearing
15	Connecting Rod Cap
16	Connecting Rod Bolt
17	Engine Block Oil Gallery Plug
18	Engine Block Oil Gallery Plug
19	Engine Block Oil Gallery Plug
20	Crankshaft Rear Oil Seal
21	Automatic Transmission Flex Plate
22	Automatic Transmission Flex Plate Bolt
23	Oil Pump Flow Control Valve Assembly Bolt
24	Oil Pump Flow Control Valve Assembly
25	Oil Pump Flow Control Valve Assembly Bolt
26	Engine Block Oil Gallery Plug
27	Engine Block Oil Gallery Plug
28	Oil Pump and Compressor Heat Shield
29	Oil Pump and Compressor Heat Shield Bolt
30	Engine Oil Cooler Assembly
31	Engine Oil Cooler Assembly Bolt
32	Oil Filter
33	Lower Crankcase Bolt
34	Lower Crankcase
35	Lower Crankcase Locating Pin
36	Crankshaft Lower Bearing
37	Crankshaft
38	Crankshaft Upper Bearing
39	Crankshaft Upper Thrust Bearing
40	Piston Oil Nozzle Bolt
41	Piston Oil Nozzle
42	Engine Block
43	Engine Front Cover Locating Pin
44	Engine Oil Pressure Sensor
45	Engine Coolant Heater
46	Knock Sensor
47	Engine Block Coolant Baffle
48	Crankshaft Position Sensor Bolt
49	Crankshaft Position Sensor

Upper and Lower Oil Pan and Components

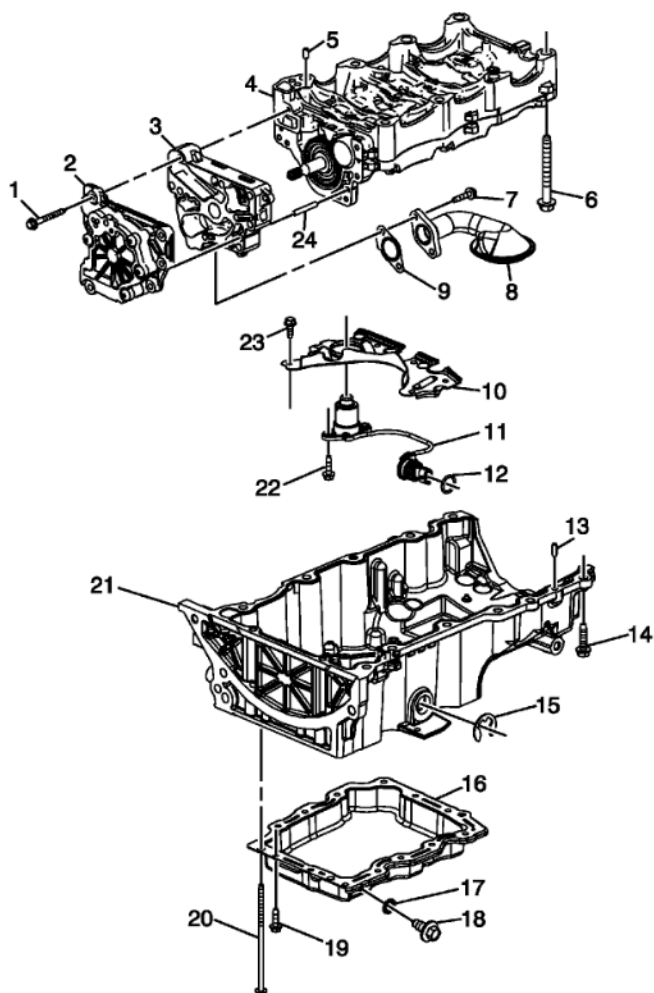


Fig. 14: Upper and Lower Oil Pan and Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Oil Pump Assembly Bolt
2	Oil Pump Assembly
3	Oil Pump Cover
4	Balancer Shaft Module
5	Balancer Shaft Housing Locating Pin
6	Balancer Shaft Housing Bolt
7	Oil Pump Suction Pipe Bolt
8	Oil Pump Screen Assembly with Suction Pipe
9	Oil Pump Screen Gasket
10	Oil Pan Baffle
11	Engine Oil Level Indicator Switch
12	Engine Oil Level Indicator Seal
13	Oil Pan Locating Pin

14	Oil Pan Bolt
15	Engine Oil Level Sensor Lead Clip
16	Lower Oil Pan
17	Oil Pan Drain Plug Seal
18	Oil Pan Drain Plug
19	Oil Pan Bolt
20	Oil Pan Bolt
21	Upper Oil Pan
22	Engine Oil Level Indicator Switch Bolt
23	Oil Pan Baffle Bolt
24	Oil Pump Locating Pin

Timing Chain and Components

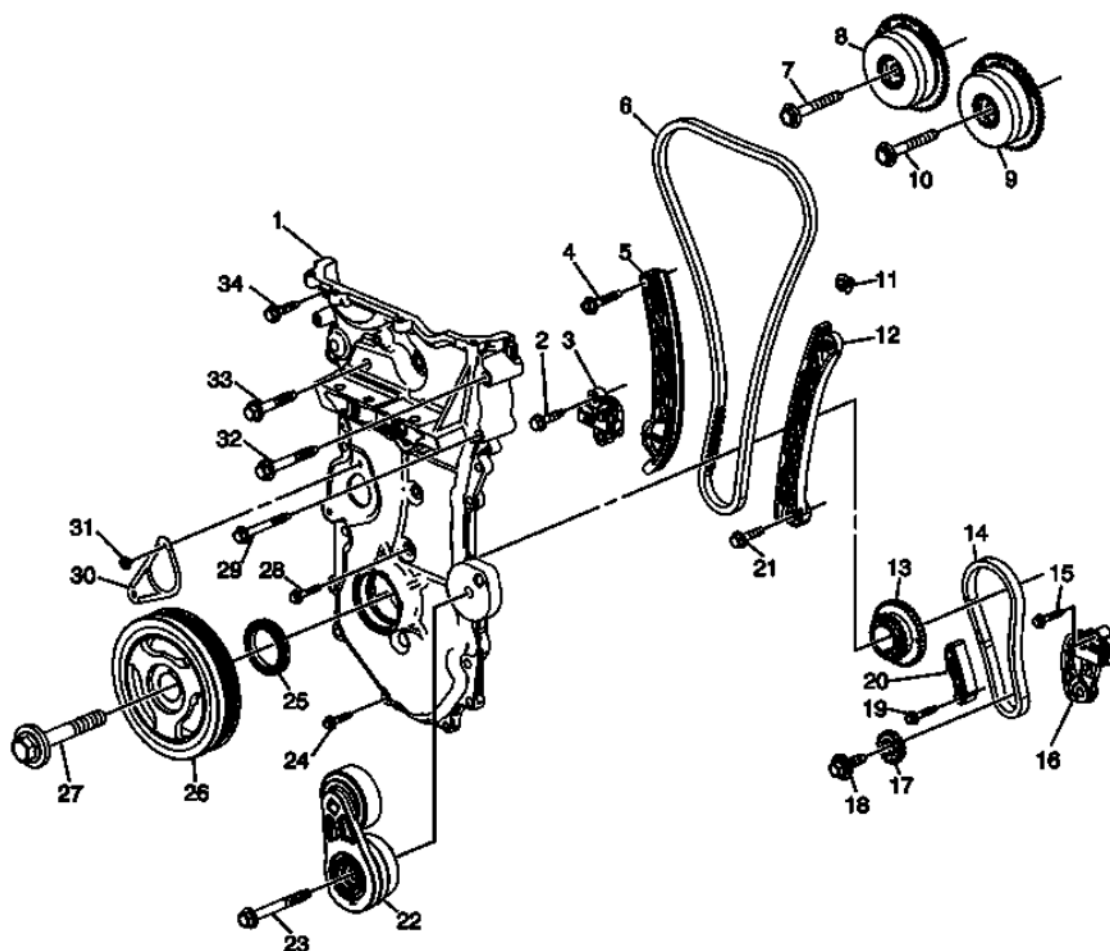


Fig. 15: Timing Chain and Components
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Engine Front Cover
2	Timing Chain Tensioner Bolt
3	Timing Chain Tensioner
4	Timing Chain Tensioner Pivot Arm Bolt
5	Timing Chain Tensioner Pivot Arm
6	Timing Chain
7	Camshaft Position Actuator Bolt
8	Intake Camshaft Position Actuator
9	Exhaust Camshaft Position Actuator
10	Camshaft Position Actuator Bolt
11	Timing Chain Oil Nozzle
12	Timing Chain Guide
13	Crankshaft Sprocket
14	Balancer Chain
15	Balancer Chain Tensioner Bolt
16	Balancer Chain Tensioner
17	Balancer Shaft Driven Sprocket
18	Balancer Shaft Sprocket Bolt
19	Balancer Chain Guide Bolt
20	Balancer Chain Guide
21	Timing Chain Guide Bolt
22	Drive Belt Tensioner
23	Drive Belt Tensioner Bolt
24	Engine Front Cover Bolt
25	Crankshaft Front Oil Seal
26	Crankshaft Balancer
27	Crankshaft Balancer Bolt
28	Engine Front Cover Bolt
29	Engine Front Cover Bolt
30	Timing Chain Tensioner Cover
31	Timing Chain Tensioner Cover Bolt
32	Engine Front Cover Bolt
33	Engine Front Cover Bolt
34	Engine Front Cover Bolt

ENGINE IDENTIFICATION (LCV)

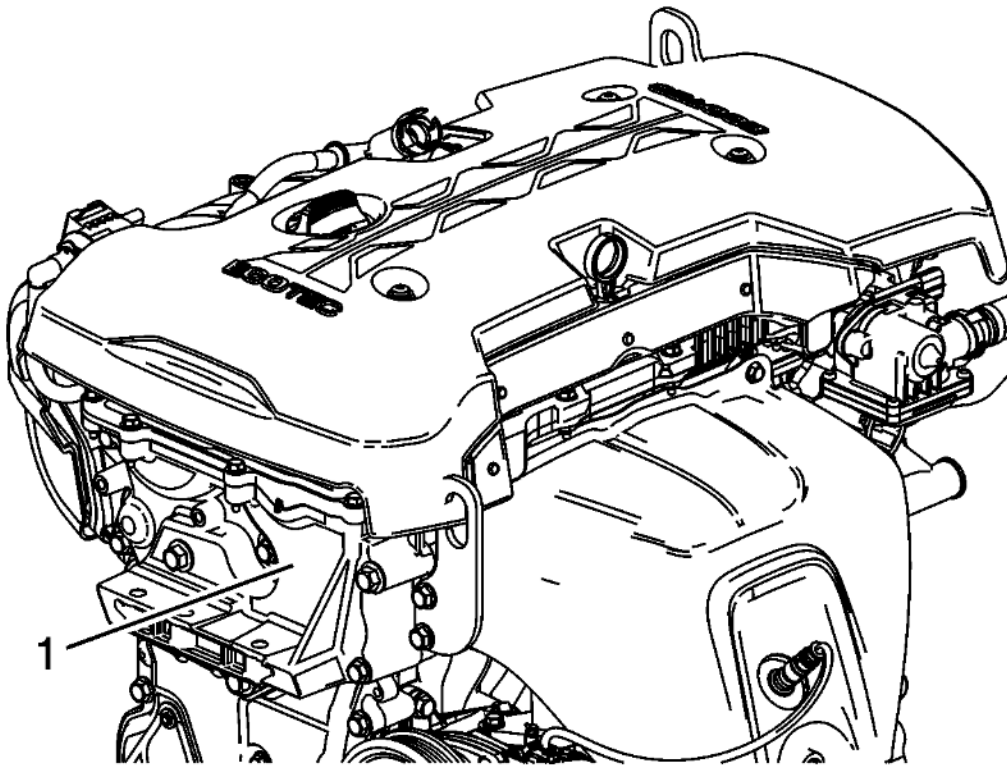


Fig. 16: Engine Identification (LCV)
 Courtesy of GENERAL MOTORS COMPANY

Identification can be made through the use of the Engine Traceability label (1) on the engine.

ENGINE IDENTIFICATION (LTG)

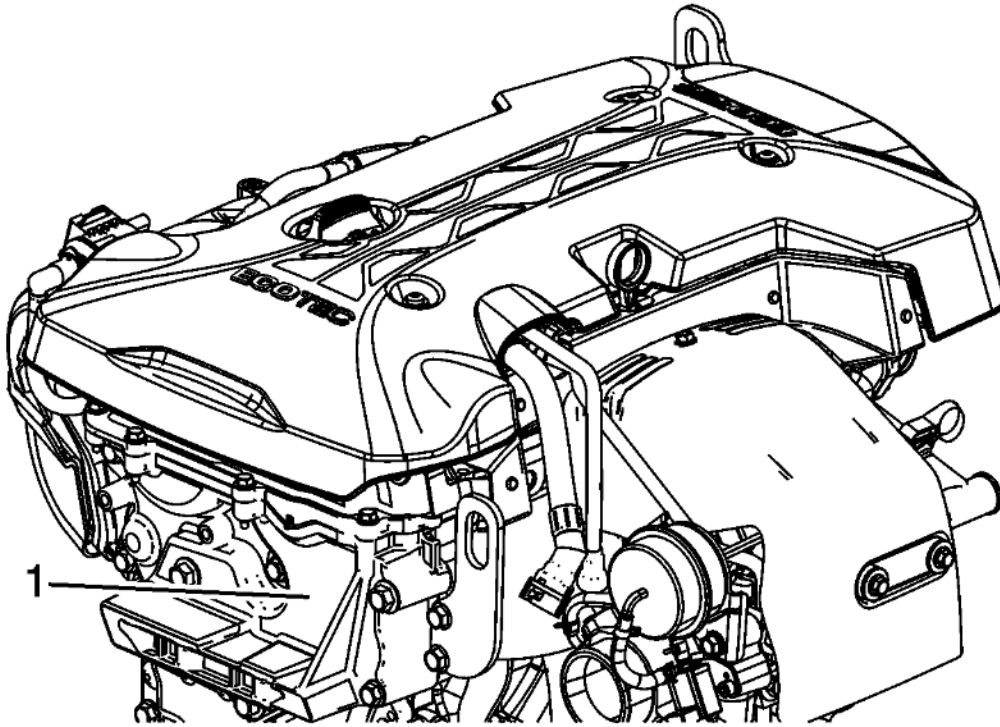


Fig. 17: Engine Identification (LTG)
 Courtesy of GENERAL MOTORS COMPANY

Identification can be made through the use of the Engine Traceability label (1) on the engine.