

**Haynes**  
*shows you how*

---

**BMW 3-Series (92-98) & Z3 (96-98) Haynes Online Manual**

---

## Specifications

### General

---

**Engine code**

1992 through 1995	M42
1996 on	M44

**Displacement**

M42	109.6 cubic inches (1.8 liters)
M44	115.6 cubic inches (1.9 liters)

**Direction of engine rotation**

Clockwise (viewed from front of vehicle)

**No. 1 cylinder location**

Timing chain end of engine

**Firing order**

1-3-4-2

**Compression ratio**

10.0 : 1

**Minimum compression pressure**

142 to 156 psi

### Camshafts

---

**Endplay**

0.0025 to 0.0059 inch

**Oil clearance**

M42 engine	0.0008 to 0.0024 inch
M44 engine	0.0016 to 0.0032 inch

### Lubrication system

---

**Minimum oil pressure at idle speed**

18 psi

**Oil pressure relief valve spring free-length**

3.31 inches

**Oil pump rotor clearances:**

Outer rotor-to-pump body	0.005 to 0.008 inch
Outer rotor-to-inner rotor	0.005 to 0.008 inch
Rotor endplay	0.008 to 0.0035 inch

Ft-lbs (unless otherwise indicated)

Torque specifications

Main bearing cap bolts

- Step 1 15
- Step 2 Tighten an additional 50-degrees

Cylinder head bolts\*

- Step 1 22
- Step 2 Tighten an additional 90-degrees
- Step 3 Tighten an additional 90-degrees

Valve cover bolts 79 in-lbs

Upper and lower timing chain cover bolts 79 in-lbs

Crankshaft rear oil seal housing bolts 79 in-lbs

Flywheel bolts\* 89

Crankshaft vibration damper/pulley-to-hub bolts 16

Crankshaft pulley hub/sprocket bolt\* 244

Connecting rod bearing cap bolts\*

- Step 1 15
- Step 2 Tighten an additional 70-degrees

Camshaft bearing cap nuts 11

Camshaft sprocket bolts 11

Timing chain tensioner cover plug 18

Oil pump cover 79 in-lbs

Front subframe bolts\* 77

\*Use new bolts