

[Table Of Contents](#)

**Acknowledgments**

**Introduction**

**What is a Workbench® Book?**

**Chapter 1:**

Engine Evaluation  
High Mileage  
Excessive Oil Consumption  
Low Oil Pressure  
Decrease in Performance  
Noises  
Diagnostic Tools and Techniques  
Spark Plug Inspection  
Ignition Timing Check  
Vacuum Test  
Compression Check  
Leak-Down test  
Cooling System Pressure Test

**Chapter 2:**

Pulling the Engine  
Hood  
Battery  
Fluids  
Wiring  
Distributor and Ignition  
Belts  
Lines and Hoses  
Hoist and Lift Brackets  
Driveshaft  
Transmission  
Engine Stand

**Chapter 3:**

Preparing to Rebuild an Engine  
Facilities  
Safety is Crucial  
Organization and Planning  
Rationale for Rebuilding

Tools and Equipment  
Machine Shop Services

#### **Chapter 4:**

Engine Disassembly  
Valvetrain Disassembly  
Camshaft Removal  
Cylinder Head Disassembly  
Block Disassembly

#### **Chapter 5:**

Inspection and Cleaning  
Professional Inspection  
Rocker Arm Assemblies  
Camshaft and Lifters  
Cylinder Heads  
Cylinder Block  
Pistons and Connecting Rods  
Crankshaft and Vibration Dampener

#### **Chapter 6:**

Machining and Parts Selection  
Parts Sources  
Connecting Rods  
Rotating Assembly  
Cylinder Block  
Cylinder Heads  
Cylinder Head Resurfacing  
Valve Job  
Cylinder Head Assembly  
Piston and Connecting Rod Installation

#### **Chapter 7:**

Assembly  
Safety and Cleanliness  
Specialized Tools and Products  
Bottom End Assembly  
Top End Installation

#### **Chapter 8:**

High-Performance Y-Block Engine Build  
Racing Engines

## **Chapter 9:**

Engine Installation, Start-Up and Break-In  
Installation  
Priming the Engine  
Distributor Installation  
Priming the Fuel System  
Break-In

## **Epilogue**

## **Appendix**

Cylinder Numbering and Firing Order  
General Engine Specifications  
Torque Specifications  
Preliminary Valve Lash Adjustment  
Firing Order  
Cylinder Order  
Cylinder Head Bolt-Tightening Sequence  
Cam Timing  
Dampener Timing Settings

## **Source Guide**