



[Table Of Contents](#)

Acknowledgments

Preface

Introduction What is a Workbench Book?

Chapter 1 Preparations and Engine Removal

Manuals and Information

Workspace

Tools

Performance

Pulling the Engine

Unbolting the Bolt-ons

Chapter 2 Disassembly

Drain Fluids

Remaining Bolt-On Parts

Cylinder-Head Removal

The Bottom End

Disassemble Cylinder Heads

Chapter 3 Cleaning and Inspection

Media Blasting

Cleaning

Inspecting Each Part

Chapter 4 Machining and Choosing Parts

Decisions

Choosing a Machine Shop

Block Machining

Crankshaft

Connecting Rods

Balancing

Cylinder-Head Machining

The Right Parts

Chapter 5 Assembly

Cam Bearings

Pistons and Pins

Pistons, Rods, and Rings

Freeze Plugs

Screw-In Plugs

Oil-Shaft Bushing

Camshaft

Timing Gear

Oil Pump

Assemble Cylinder Heads

Mounting Cylinder Heads

Head Pins

The Valvetrain

Flat-Tappet Lifters

Lifter Retainers and Guideplates

Pushrods

Rocker Arms

Front Engine Cover

Harmonic Balancer

Oil Pan

Oil-Filter Fitting

Oil-Pump Shaft

Valvecovers

Exhaust Manifolds

Chapter 6 Start-up and Break-in

Adding Fluids

Fuel System

First Crank

Flat-Tappet Lifter Engines

Roller-Lifter Engines

Ignition Timing

Problems

Appendix A Source Guide

Appendix B Tolerances

Appendix C Workbench Worksheets