



[Table Of Contents](#)

Acknowledgments

What is a *Workbench Book*?

Chapter 1 Historical Review of the Big-Block Chevrolet

Parts Identification

What's a 402 and What's a 400 Big-Block?

Blocks

Cylinder Heads

Spark Plugs

Crankshaft

Chapter 2 Tools

Engine Stand

Engine Lifting

Basic Hand Tools

Best Tools for the Job

Required Miscellaneous Tools

Specialty Tools

Air Tools

Supplies

Lubricants

Engine Lubricant Options

Bolt Thread Lubricants and Sealers

Sealants

Cleaning Equipment

Chapter 3 Removal and Tear Down

Documentation

Safety Warnings

Drain Fluids

Air Conditioning

Fuel System
Wiring and Hoses
Distributor
Belts
Spark Plugs
Exhaust
Carburetor
Transmissions
Pulling Engine
Tear Down Long Block

Chapter 4 Inspection

Visual Inspection
Block
Heads
Crankshaft
Rods
Harmonic Damper

Chapter 5 Selecting Parts

Got Performance?
Aftermarket Blocks
Main Cap Conversion
Bearings
Rotating Assembly
Induction
Heads
Valvetrain
Oiling System
Oil Pans
Windage Tray
Gaskets

Fasteners

Cooling System

Fuel System

Chapter 6 Machine Shops

Pre-Machine-Shop Planning

Machine to Application Requirements

Pre-Machine-Shop Tasks

Professional Inspection

Machine Shop Services

Block

Heads

Rotating Assembly

Intake Manifold and Head Fitment

General Machine Shop Services

Chapter 7 Cleaning

Safety First!

Tools and Cleaning Items

Engine Cleaning Brushes

Chemical Dip Cleaner

Compressed Air

Pressure Washer

Cleaning Area

Critical Cleaning Details

Step-by-Step Engine Cleaning Process

Chapter 8 Pre-Assembly

Inventory

Inspection

Hydraulic Problems

Clean up Your Act

Head Games

Step-by-Step Pre-Assembly

Chapter 9 Step-by-Step Final Assembly

Chapter 10 Start-Up

Lubrication

Coolant

Throttle

Wires and Hoses

Grounds

Accessories and Belts

Fuel

Battery

Pre-Oil Engine

Distributor Reset

Transmission

Initial Timing

Pick Up Your Mess

Flat Tappet Cam Break-In Process

Fire It Up!

Roller Cam Break-In

Camshaft Break-In

Break In the Rest

Tuning

Appendix A: Torque Reference

Appendix B: Work-Along Sheets

Source Guide