# Table Of Contents

Acknowledgments

### About the Author

#### **Chapter 1: Family Tree**

- 396 Engines
- 402 Engines
- 427 Engines
- 454 Engines
- General Motors Performance Parts Crate Engines

# **Chapter 2: Cylinder Blocks**

Block Selection Maximum Bore Sizes Stock Blocks Mark IV Blocks Gen V and Gen VI Blocks General Motors Performance Parts Blocks Bowtie Blocks GMPP Drag Race Competition Engine Blocks Aftermarket Blocks

## Chapter 3: Crankshafts, Connecting Rods and Pistons

Crankshafts Project: Balancing the Reciprocating Assembly Connecting Rods Bearings Pistons Harmonic Dampeners Flywheels and Flexplates Starters

#### **Chapter 4: Camshafts, Lifters and Valvetrain Components**

Types of Camshafts and Lifters Lift, Duration and Lobe Separation Angle Project: How to Degree-In a Camshaft General Camshaft Recommendations OEM Cam Fitment Lifters57Replacement Big-Block Camshafts Oversized Cam Journals Alternative Firing Orders: 4-7 Swap Cam Drives: Chains, Gears and Belts Pushrods Rocker Arms

#### **Chapter 5: Oil and Lubrication Systems**

Oil Pumps Oil Pans Oil Filters and Adapters Pan Evacuation Systems and Vacuum Pumps Accumulators, Coolers and Accessories Motor Oil

#### **Chapter 6: Cylinder Heads**

Oval or Rectangular Intake Ports Open or Closed Combustion Chambers Mark IV, Gen V and Gen VI Heads Aftermarket Cylinder Heads Spread Port Heads What's Your (Valve) Angle? Modifications Aftermarket Cylinder Head Manufacturers

#### **Chapter 7: Induction Systems**

Intake Manifolds

Carburetor Spacers and Adapters

Tunnel Ram Intake Manifolds

**Rochester Quadrajet Carburetors** 

Holley-Style Modular Carburetors

Carter/Weber/Edelbrock Square-Bore Carburetors

Air Cleaners

Fuel Pumps

**Fuel Injection** 

Nitrous Oxide Injection

Superchargers

Turbochargers

#### **Chapter 8: Exhaust Systems**

OEM Exhaust Manifolds Tubular Headers Mufflers and Exhaust Pipes An Exhausting Summary

#### **Chapter 9: Ignition Systems**

Distributors, Coils and Spark Plug Wires Ignition Controllers Spark Plugs Batteries and Cables

#### **Chapter 10: Cooling Systems**

Water Pumps

#### **Chapter 11: Gaskets and Fasteners**

Cylinder Head Gaskets Big-Block Engine Gaskets and Seals Fasteners

# Chapter 12: Engine Build-Up

Short-Block Assembly Long-Block Assembly Final Accessory Installation

#### **Source Guide**