

[Table Of Contents](#)

**Acknowledgments**

**Introduction**

**What Is a Workbench® Book?**

**Chapter 1:**

History and Identification

10-Bolt Identification

12-Bolt Identification

**Chapter 2:**

Suspension Types and Differential Housings

Leaf Spring Rear Suspension

Watt's Linkage Rear Suspension

Coil Spring Rear Suspension

Triangulated Four-Link Rear Suspension

Independent Rear Suspension

Project: Building a Universal Axle

Front Suspension

Advanced Suspension Components

Project: Installing an A-Body Axle with Tubular Arms

Project: Updating Inside the Housing

Bearings and Races

**Chapter 3:**

Disassembly

Main Housing

Limited-Slip or Open Differential?

External Inspection

Axle Removal

Pinion Yoke Removal

Axle Shaft Removal

Carrier Removal

Pinion Removal

Cleaning the Housing

Project: Converting a 12-Bolt for a 1967 Chevy Truck

#### **Chapter 4:**

Assembly

Open Differentials

Limited-Slip Differentials

Project: Installing Plug and Separator Block

Project: Installing Ladder Bars

Clutch-Type Differentials

Project: Rebuilding a Clutch-Type Differential

Axle Assembly Continues

#### **Chapter 5:**

Gears

Determine Gear Ratio

Gear Selection

Ring Gears and Carrier

Ring Gear Bolts

Bearing Installation

Ring and Pinion Machining

Speedometers

#### **Chapter 6:**

Axles

Torque Load

Spline Design

Stock versus Aftermarket Axles

Aftermarket Upgrades

Project: Replacing Wheel Studs

## **Chapter 7:**

Setup and Installation

Project: Installing an Axle Assembly and Differential

Pinion Depth

Pinion Gear Patterns

Project: Pattern Checking

Project: Setting the Base Pinion Depth

Ring Gear Backlash

Project: Setting the Ring Gear Backlash

Project: Setting Up a Dial Indicator

Preload Adjustments

Complete the Rebuild

Gear Break-In Procedure

## **Chapter 8:**

Driveshafts

Choosing a Builder

Power Output Considerations

Carrier Bearings

U-Joint

Mounting Options

Removal Methods

Project: Installing a Driveshaft U-Joint

Snap Rings

Project: Modifying a Stock Driveshaft

## **Chapter 9:**

Lockers and Spools

Auto Lockers

Mechanical Locking Differentials

Electronic Locking Differentials

Drop-in Lockers

Spools

## **Chapter 10:**

Wheels and Tires

Wheel Fitment

Project: Creating a Wheel Fitment Jig

Project: Measuring for Tire Clearance

Tire Codes

Tire Grading

Tire Use

Tire Construction

Tire Sizing

Tire Storage

Tire Selection

## **Source Guide**