

# FREE SAMPLE

The opening pages of

## **1970 Chevrolet Chevelle SS 454 Restoration Guide**

Read these pages exactly as they appear in the full guide.  
Nothing here is rewritten or summarised — it is the product itself,  
so you can judge the depth before you spend a dollar.

**Full guide: <https://restoreessentials.com/product/RE-GD-CHEVROLET-CHEVELLE-SS-454>**

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## RESTORATION ESSENTIALS

Factory-correct restoration reference

# 1970

## Chevrolet Chevelle SS 454

### Restoration Guide

| Key specifications at a glance |                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Engines                        | LS5 454: 360 hp @ 5,400 rpm, 500 lb-ft @ 3,200 rpm. LS6 454: 450 hp @ 5,600 rpm, 500 lb-ft @ 3,600 rpm.         |
| Displacement                   | 454 cu in (7.4 L). Bore x stroke 4.25 in x 4.00 in.                                                             |
| Compression                    | LS5 10.25:1. LS6 11.25:1 (premium fuel required).                                                               |
| Carburetion                    | LS5: 750-cfm Rochester Quadrajet on cast-iron intake. LS6: 780-cfm Holley 4-barrel on aluminum low-rise intake. |
| Transmissions                  | Muncie M22 heavy-duty 4-speed or M40 Turbo Hydra-Matic 400; either mandatory (\$221.80).                        |
| Rear axle                      | 12-bolt standard, 3.31:1 gears; Positraction optional.                                                          |
| Production                     | 8,773 SS 454 Chevelles: 4,298 with LS5, 4,475 with LS6.                                                         |
| RPO codes                      | Z15 SS 454 Equipment (\$503.45); LS6 upgrade (\$263.30); ZL2 cowl-induction hood (\$147.45).                    |
| VIN                            | 13-character format, e.g. 136370B123456. No engine code in the VIN.                                             |

Every specification in this guide was checked against factory literature, marque references, and documented survivor cars before publication. Where a number could not be verified, it was left out rather than guessed.

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How to use this guide: work the authentication chapter before you buy or restore. Decode the VIN, the Fisher cowl tag, and the engine stamp first; they decide what the car is allowed to be. The technical chapters that follow give you the factory-correct targets to restore toward.

## 1. Chevrolet: the company behind the car

Chevrolet was founded in 1911 by race driver Louis Chevrolet and General Motors founder William C. Durant, and Durant folded the brand back into General Motors in 1918. By the late 1960s Chevrolet was the volume heart of GM, selling more cars than any other American division and living on a reputation built in the 1950s: the small-block V8, introduced for 1955 at 265 cubic inches, which grew through 283, 327, and 350 cubic inches and became the most copied engine architecture in the world. Chevrolet's performance image, however, was built on its big-blocks.

The Mark IV big-block arrived for 1965 as the 396, famous in the Z16 Chevelle with a 375-horsepower rating. The family grew to 427 cubic inches in 1966 and powered Corvettes, full-size Chevrolets, and the COPO Camaros that dominated Super Stock racing. Through the late 1960s, a General Motors internal policy capped engines in intermediate-size cars at 400 cubic inches, which is why the Chevelle SS carried a 396 (later a 402 still badged 396) while the 427 stayed in the Corvette and the full-size line.

For 1970 that internal ban was lifted. Chevrolet enlarged the Mark IV to 454 cubic inches, a 4.25-inch bore with a 4.00-inch stroke, the largest displacement ever installed in a regular-production Chevrolet passenger car. In the Chevelle it appeared in two states of tune: the hydraulic-lifter LS5 at 360 horsepower and the solid-lifter, 11.25:1-compression LS6 at 450 horsepower, the highest factory horsepower rating of any American muscle car of the era. This guide covers both, because both were sold under the same SS 454 option in the same model year, and a restorer needs to know exactly which one a car was born with.

## 2. The Chevelle SS story

The Chevelle debuted for the 1964 model year as Chevrolet's new intermediate, slotted between the compact Chevy II and the full-size line. A Super Sport option was available from the start, but it was mostly appearance and bucket seats. The muscle era began in 1965 with the Z16: a one-year, limited-production Chevelle SS 396 with the 375-horsepower Mark IV big-block, of which only about 200 were built. The Z16 is the spiritual ancestor of this guide's subject.

For 1966 through 1968 the SS 396 was its own model series, with the 396 offered in 325, 350, and 375-horsepower versions. In 1969 Chevrolet demoted the SS 396 from a series to an option package on the Malibu, a change that matters enormously for authentication: from 1969 on, the VIN alone cannot prove a car is a real SS, because SS cars carry the same Malibu series numbers as ordinary Malibus. The 454-cubic-inch era then made the problem harder, because in 1970 the SS 454 shared its VIN series with every other V8 Malibu built.

The 1970 model year is the peak of the Chevelle SS story. The restyled body was squarer and more aggressive, the SS 396 continued in 350 and 375-horsepower versions (the 396 was actually 402 cubic inches by then, still badged 396), and the new RPO Z15 SS 454 option put the 454 Turbo-Jet V8 under the domed hood of the Malibu sport coupe, convertible, and El Camino. Early in the model year the only

454 was the 360-horsepower LS5; mid-year Chevrolet added the LS6 Special High Performance option at 450 horsepower, and it instantly became the most powerful regular-production engine