TH700 AUTOMATIC TRANSMISSION Printable PDF

Th700 Automatic Transmission

TH700 Automatic Transmission: Everything You Need to Know

th700 automatic transmission has earned a solid reputation among automotive

enthusiasts and mechanics alike for its durability and performance. Often praised for its reliability in classic cars and muscle vehicles, this transmission remains a popular choice for those seeking a robust automatic gearbox. Whether you?re considering a rebuild, replacement, or simply want to understand how this transmission operates, diving into the details of the TH700 automatic transmission will shed light on why it?s still relevant in today?s automotive world.

Understanding the TH700 Automatic Transmission

The TH700, also known as the Turbo Hydra-Matic 700-R4, was introduced by General Motors in the early 1980s as an evolution of the popular TH350 transmission. It was designed to handle higher torque applications, making it suitable for V8 engines and performance vehicles. This transmission became the go-to option for many GM trucks, SUVs, and muscle cars throughout the 1980s and early 1990s.

Key Features of the TH700

One of the standout features of the TH700 automatic transmission is its four-speed design, which was a signi?cant improvement over the three-speed automatics common

before its time. The overdrive gear allowed vehicles to achieve better fuel economy,

reduced engine wear at highway speeds, and improved overall driving comfort.

Other notable features include:

Electronically controlled shifting: Later models integrated electronic controls to

1.

enhance shifting smoothness and adaptability.

Strengthened internal components: Designed to handle higher torque and

2.

horsepower outputs.

Versatility: Used in a wide range of vehicles, from pickup trucks to muscle cars.

3.

Common Applications and Vehicle Compatibility

One reason the TH700 automatic transmission remains popular is its adaptability across

various GM platforms. It was commonly found in vehicles such as the Chevrolet Silverado,

GMC Sierra, and performance cars like the Chevrolet Camaro and Pontiac Firebird.

If you?re restoring a classic car or upgrading an older vehicle, the TH700?s widespread use

means parts are generally easier to ?nd, and plenty of aftermarket support exists. It?s also

a favorite among LS engine swap enthusiasts due to its ability to handle increased power

levels with some modi?cations.

Why Choose a TH700 for Your Vehicle?

Choosing the TH700 automatic transmission o?ers several bene?ts:

Improved fuel e?ciency: Thanks to the overdrive gear, highway cruising is more

1.

e?cient compared to earlier 3-speed automatics.

Strong performance: Built to withstand high torque, it?s suitable for performance

2.

upgrades and towing applications.

Aftermarket support: With extensive parts availability and rebuild kits,

3.

maintenance and customization are straightforward.

Maintaining and Rebuilding the TH700 Transmission

Proper maintenance is crucial to keep the TH700 automatic transmission running smoothly. Like all automatic transmissions, it relies heavily on clean transmission ?uid and timely servicing.

Essential Maintenance Tips

Regular ?uid changes are vital. Transmission ?uid degrades over time, losing its ability to lubricate and cool internal components. Using the correct type of ?uid and replacing the ?lter as recommended by experts can extend the lifespan of the transmission.

Monitoring for symptoms such as slipping gears, delayed shifting, or unusual noises can help identify issues before they become severe. Early intervention can save you from

costly repairs down the line.

When to Consider a Rebuild

Due to its age, many TH700 transmissions in classic vehicles may require rebuilding.

Signs that a rebuild is necessary include:

Harsh or erratic shifting

1.

Transmission slipping or failing to engage gears

2.

Overheating or ?uid leaks

3.

Rebuilding a TH700 automatic transmission involves replacing worn clutch packs, seals, and other internal components. Many rebuild kits are available, and professional rebuilding services can restore the transmission to like-new condition, often with upgrades to improve performance and durability.

Upgrading the TH700 for Modern Performance

For enthusiasts looking to push the limits of their vehicles, the TH700 automatic transmission can be upgraded with aftermarket components to handle increased horsepower and torque.

Popular Upgrades Include:

Heavy-duty clutch packs: To prevent slipping under high power conditions.

1.

Shift kits: Improve shift ?rmness and reduce slippage.

2.

Improved torque converters: To optimize power transfer and improve

3.

acceleration.

Electronic control modules: Modern controllers can enhance shift timing and fuel

4.

economy.

Such upgrades make the TH700 a competitive transmission even when paired with

modern LS engines or turbocharged setups.

Common Issues and Troubleshooting

While the TH700 is known for its durability, it?s not immune to problems, especially in

older or heavily used units.

Common Problems:

Fluid leaks: Seals and gaskets can wear out over time, causing leaks.

1.

Overheating: Insu?cient ?uid levels or cooling can lead to internal damage.

2.

Shift problems: Worn bands or faulty solenoids can cause harsh or delayed shifts.

3.

Diagnosing these issues often requires a combination of ?uid analysis, pressure testing, and electronic diagnostics. Addressing problems early can prevent catastrophic transmission failure.

Finding Replacement Parts and Expert Help

Due to the popularity of the TH700 automatic transmission, many suppliers specialize in replacement parts, rebuild kits, and upgrades. Whether you prefer OEM components or aftermarket alternatives, there?s a broad market to explore.

Additionally, many transmission specialists and automotive shops have experience working with the TH700, ensuring you can ?nd expert assistance for installation, repair, or upgrades.

Exploring forums and online communities dedicated to classic cars and GM vehicles can also provide valuable insights, tips, and recommendations for maintaining and improving your TH700 transmission.

The TH700 automatic transmission stands as a testament to GM?s engineering during a pivotal era in automotive history. Whether you?re passionate about restoring a classic or enhancing a modern build, understanding this transmission?s capabilities and maintenance needs will help you get the most out of your vehicle?s performance and reliability.

Question

Answer

What vehicles commonly use the TH700 automatic transmission?

The TH700 automatic transmission, also known as the 4L70E, is commonly used in General Motors vehicles such as the Chevrolet Silverado, GMC Sierra, and various full-size GM trucks and SUVs from the mid-1990s to the early 2000s.

What are the main di?erences between the TH700 and the TH400 transmissions?

The TH700 (4L70E) is an electronically controlled 4-speed automatic transmission with overdrive, while the TH400 is a hydraulically controlled 3-speed transmission without overdrive. The TH700 o?ers better fuel e?ciency and more advanced electronic controls compared to the TH400.

Can the TH700 transmission be rebuilt, and is it cost-

e?ective?

Yes, the TH700 transmission can be rebuilt. Rebuilding can be cost-e?ective compared to replacement, especially if the transmission has minor issues. However, costs vary depending on the extent of damage and parts required.

What are common problems associated with the TH700 automatic transmission?

Common problems include slipping gears, delayed shifting, harsh engagement, and issues with the electronic control system such as faulty solenoids or wiring problems.

Is the TH700 transmission compatible with manual transmission vehicles?

No, the TH700 is an automatic transmission and is not compatible with manual transmission vehicles. It is designed speci?cally for automatic operation with electronic controls.

How often should the

transmission ?uid be

changed in a TH700

transmission?

It is recommended to change the transmission ?uid and

?lter in a TH700 transmission every 30,000 to 60,000

miles, depending on driving conditions. Regular ?uid

changes help maintain transmission performance and

longevity.

What type of transmission

?uid is recommended for

the TH700?

The TH700 transmission typically requires Dexron III or

Dexron VI automatic transmission ?uid. Always consult

the vehicle's owner manual for the speci?c ?uid type

recommended.

Can the TH700 transmission

be upgraded for higher

performance applications?

Yes, the TH700 transmission can be upgraded with

performance parts such as heavy-duty clutches, valve

bodies, and aftermarket torque converters to handle

increased power and torque in high-performance or

towing applications.

TH700 Automatic Transmission: A Comprehensive Professional Review

th700 automatic transmission stands as a signi?cant milestone in the evolution of

General Motors' automatic transmission lineup. Known also as the Turbo-Hydramatic 700-R4, this transmission has garnered attention for its robust design, adaptability, and performance characteristics, particularly in the realm of rear-wheel-drive vehicles. Its reputation is built on a blend of engineering innovation and practical application, making it a topic of interest for automotive enthusiasts, mechanics, and industry analysts alike.

Understanding the TH700 Automatic Transmission

The TH700 automatic transmission was introduced in the early 1980s as a successor to the Turbo-Hydramatic 350 and 400 series. It was designed to provide improved fuel e?ciency and smoother shifting in comparison to its predecessors. Notably, the TH700 is a 4-speed automatic transmission, featuring an overdrive gear that was relatively advanced for its time. This inclusion allowed for better highway fuel economy, addressing the growing demand for transmissions that could handle both power delivery and e?ciency.

From a technical standpoint, the TH700 transmission employs a hydraulically controlled system with a lock-up torque converter, which reduces slippage and enhances fuel

economy. This mechanic was critical during an era when fuel prices and emissions

regulations heavily in?uenced automotive design.

Key Features of the TH700 Transmission

The TH700 transmission brought several key features to the table that di?erentiated it

from earlier models:

Four-speed gearing: The addition of an overdrive fourth gear improved highway

1.

cruising e?ciency.

Lock-up torque converter: This feature reduced heat and increased fuel economy

2.

by locking the converter at higher speeds.

Wide application range: The transmission was compatible with a variety of V8

3.

engines, making it suitable for trucks, SUVs, and performance cars.

Durability and modular design: Designed to withstand higher torque outputs, it

4.

was built to be serviceable and adaptable.

These elements combined to make the TH700 a versatile choice for manufacturers and

aftermarket modi?ers, particularly those working with LS engine swaps or custom builds.

Performance and Reliability in Practical Use

One of the most discussed aspects of the TH700 automatic transmission is its performance under di?erent driving conditions. In professional reviews and user experiences, the transmission is often praised for its smooth shifting and ability to handle signi?cant horsepower levels without compromising reliability.

However, some critiques have emerged regarding the TH700?s complexity compared to simpler 3-speed transmissions. The hydraulic control system, while advanced, can be more challenging to diagnose and repair without specialized knowledge. Additionally, the transmission?s internal components, such as the valve body and planetary gear sets, require regular maintenance to sustain optimal functionality.

Comparative Insights: TH700 vs. Other GM Transmissions

When compared to other GM automatic transmissions like the TH350 or the later 4L60E, the TH700 occupies a middle ground in terms of technology and application:

TH350: A simpler 3-speed automatic with a reputation for ruggedness but lacking

1.

overdrive and fuel economy advantages.

TH700: Introduced the overdrive gear and lock-up converter, o?ering better

2.

highway e?ciency and smoother operation.

4L60E: An electronically controlled evolution of the TH700 with improved shift

3.

control and adaptability to modern engine management systems.

The TH700?s mechanical controls make it more accessible for enthusiasts who prefer a purely hydraulic system, while the 4L60E?s electronic controls cater to modern vehicle requirements.

Applications and Adaptations

The TH700 automatic transmission found its way into a variety of GM trucks, SUVs, and performance vehicles during its production run. Its adaptability has led to widespread use in custom builds, particularly in LS engine swaps where reliability and compatibility are paramount.

Common Vehicles Equipped with the TH700

Chevrolet C/K Series Trucks (1982?1990)

1.

GMC Sierra and Suburban models

2.

Chevy Camaro and Corvette (limited applications)

3.

Custom hot rods and muscle cars with V8 engine upgrades

4.

The transmission?s ability to integrate with various drivetrains has made it a favored option in both restoration projects and performance enhancements.

Aftermarket Support and Upgrades

The TH700?s popularity has spurred a robust aftermarket ecosystem. Performance shops and parts suppliers o?er a range of upgrades including:

High-performance clutch packs and bands for increased torque capacity

1.

Reprogrammed or modi?ed valve bodies for ?rmer and quicker shifts

2.

Improved torque converters with higher stall speeds

3.

Complete rebuild kits with enhanced components for durability

4.

These upgrades allow users to tailor the transmission?s behavior to speci?c driving styles, from daily commuting to competitive racing.

Maintenance and Longevity Considerations

Maintaining a TH700 automatic transmission involves regular ?uid changes, inspection of seals, and monitoring of shifting behavior. Due to its hydraulic nature, the transmission ?uid condition directly impacts performance and longevity. Experts recommend using high-quality transmission ?uids compatible with GM speci?cations to prevent wear and overheating.

Moreover, the TH700?s design allows for easier rebuilds compared to some more modern electronically controlled transmissions, making it a practical choice for those willing to

perform hands-on maintenance.

Pros and Cons of the TH700 Transmission

Pros:

1.

Improved fuel e?ciency with overdrive gear

1.

Reliable and durable when properly maintained

2.

Widely available and supported in the aftermarket

3.

Compatible with various V8 engines and custom setups

4.

Cons:

2.

More complex hydraulic controls than earlier models

1.

Requires knowledge for troubleshooting and repairs

2.

Less electronically integrated than newer transmissions

3.

Potential parts scarcity as production ages

4.

Such factors are essential for potential users to consider when choosing the TH700 for their vehicles.

Throughout its lifecycle, the TH700 automatic transmission has demonstrated a balance between advanced engineering and practical application. Its role in shaping the trajectory of automatic transmissions in GM vehicles continues to in?uence current designs and aftermarket modi?cations. For those seeking a blend of classic hydraulic control with enhanced e?ciency, the TH700 remains a compelling subject of study and use.

TH700 transmission, Turbo 700, General Motors automatic transmission, TH700 rebuild kit, TH700 torque converter, TH700 transmission ?uid, TH700 shift solenoid, TH700 transmission parts, TH700 transmission problems, TH700 transmission swap