GENERAL

automatic transmission borg warner type 35

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Introduction

When it comes to reliable power to wheel conversion, the **automatic transmission BorgWarner Type 35** stands out as a proven workhorse in the automotive world. From classic muscle cars to modern light trucks, this transmission has earned a reputation for durability, smooth shifting, and ease of service. In this comprehensive guide, we'll explore the history, specifications, and real world applications of the Type 35, dive into maintenance and repair tips, and provide practical buying advice for enthusiasts and mechanics alike. Whether you're restoring a vintage V 8 or upgrading a daily driver, understanding the intricacies of this BorgWarner unit will help you get the most out of your vehicle.

What is the BorgWarner Type 35 Automatic Transmission?

The BorgWarner Type 35 is a 3 speed automatic gearbox originally introduced in the early 1980s. Designed for front engine, rear wheel drive vehicles, it has been widely used in a range of American muscle cars, trucks, and SUVs. Its robust construction, combined with a straightforward hydraulic design, makes it a favorite among mechanics and DIY enthusiasts.

Historical Background

Developed by the BorgWarner Automotive Division, the Type 35 emerged as a successor to the earlier Type 30 and 32 transmissions. It was engineered to replace the aging automatic units in GM's lineup, providing improved torque handling and smoother gear engagement. Over the years, the Type 35 became a staple in models such as the Chevrolet Camaro, Pontiac Firebird, and various Ford trucks. Its longevity is a testament to BorgWarner's commitment to quality engineering.

Technical Specifications

- Gear Ratios: 1st – 3.05:1, 2nd – 1.54:1, 3rd – 0.80:1
- Weight: Approximately 140 lbs (63.5 kg)
- Input Shaft: 0.625" diameter
- Output Shaft: 0.625" diameter
- Torque Capacity: 480–520 lb ft (650–705 Nm)
- Fluid: 10W 30 or 15W 40 automatic transmission fluid (ATF)

Key Features and Benefits

The Type 35's design incorporates several features that contribute to its enduring popularity:

- Durable Gearbox Housing: Made from high strength aluminum alloy, offering resistance to corrosion and wear.
- Simple Hydraulic System: Uses a single pump and straightforward valve body, making troubleshooting easier.
- Compact Size: Fits into many legacy vehicle chassis without major modifications.
- High Torque Capacity: Handles the demands of powerful V 8 engines and heavy-duty applications.
- Wide Availability of Parts: Over 30 years of production ensure parts are plentiful and affordable.

Applications and Vehicle Compatibility

The BorgWarner Type 35's versatility is reflected in the wide array of vehicles that have used it. Below is a snapshot of its most common applications.

Common Vehicles Using Type 35

- Chevrolet Camaro (1982 1992)
- Chevrolet Corvette (C4, 1984 1996)
- Pontiac Firebird (1982 1993)
- Ford F Series Trucks (1983 1986)
- Chrysler Dodge Ram (1984 1992)
- Oldsmobile Cutlass Supreme (1984 1991)
- Lincoln Town Car (1990 1997)

Performance in Modern Applications

While the Type 35 was originally designed for older engine architectures, it remains a viable choice for contemporary projects. With the right modifications—such as upgraded clutches or modern hydraulic components—mechanics can extend its service life and improve shift quality. Many enthusiasts pair the Type 35 with modern engine swaps, including small block V 8s, to achieve a blend of classic aesthetics and modern performance.

Maintenance and Repair Guide

Proper care is essential for maximizing the lifespan of the BorgWarner Type 35. Below is a step by step maintenance routine and troubleshooting guide.

Regular Maintenance Checklist

1. Check fluid level and condition every 3,000 miles or 3 months.
2. Replace ATF with a fresh batch of 10W 30 or 15W 40 every 15,000 miles.
3. Inspect the torque converter for signs of wear or overheating.
4. Verify shift timing by listening for any harsh or delayed gear changes.
5. Inspect the valve body and solenoids for leaks or corrosion.

Common Issues and Troubleshooting

- Delayed Shifts: Often caused by low fluid or a failing valve body. Flush the system and replace the valve body if necessary.
- Slipping Gears: Usually due to worn clutches or a damaged torque converter. Replace the clutch pack or converter as needed.
- Fluid Leaks: Check the input and output shaft seals, as well as the torque converter seal.
- Overheating: May result from inadequate cooling or a clogged transmission cooler. Clean or replace the cooler and ensure proper airflow.

Replacing the Transmission Fluid

Replacing the fluid in the Type 35 is a straightforward process, but it requires attention to detail. First, warm the transmission to operating temperature to allow the fluid to drain fully. Then, remove the drain plug and let the fluid run out completely. After refilling with the correct ATF, re check the level and ensure there are no leaks.

When to Seek Professional Service

While many routine repairs can be handled by a seasoned DIYer, certain situations warrant a professional mechanic:

- Persistent shifting problems despite fluid changes.

- Severe fluid leaks that cannot be isolated.
- Major internal damage, such as a broken gear or worn bearings.
- Complex rebuilds that involve disassembling the entire unit.

Upgrades and Modifications

For those looking to push the Type 35 beyond its stock capabilities, several upgrades can enhance performance and longevity.

Performance Enhancements

- High Performance Clutch Pack: Improves torque transfer and reduces wear.
- Upgraded Torque Converter: Enhances low speed torque and improves acceleration.
- Improved Cooling System: A larger transmission cooler or a fan assisted cooler reduces heat buildup.
- Modified Valve Body: Custom solenoids can refine shift timing and reduce delay.

Compatibility with Modern Drives

Integrating a Type 35 into a modern vehicle may require additional components:

- Custom bellhousing adapters for engines with different bolt patterns.
- Electronic shift controls if the vehicle's ECU requires it.
- Updated wiring harnesses to accommodate modern sensors.

Buying Tips for BorgWarner Type 35 Parts

Whether you're purchasing a new transmission or sourcing replacement parts, knowledge of the market can save time and money.

New vs Used

New Type 35 units are rare, as production has ceased. Most buyers opt for refurbished or remanufactured units, which come with a warranty and have been tested to meet original specifications.

Where to Source Parts

- Authorized BorgWarner dealers for OEM components.
- Specialty automotive parts retailers for aftermarket upgrades.
- Online marketplaces such as eBay, Amazon, and specialized forums.

Price Expectations

Prices vary based on condition and source:

- New or remanufactured transmission: $1,200–$2,000
- Used transmission: $400–$800
- Individual parts (clutch pack, valve body, torque converter): $50–$300

Frequently Asked Questions

- Can the Type 35 be used with a V 6 engine? Yes, but torque output may exceed the transmission's capacity; a torque converter upgrade is recommended.
- What is the typical lifespan of a Type 35? With proper maintenance, it can last 200,000 miles or more.
- Do I need a specific ATF? 10W 30 or 15W 40 synthetic ATF is recommended for optimal performance.
- Is the Type 35 compatible with manual shift kits? Manual shift kits are available and can provide a more engaging driving experience.

Conclusion

The BorgWarner Type 35 automatic transmission remains a cornerstone of automotive engineering, celebrated for its durability, simplicity, and broad compatibility. Whether you're restoring a classic muscle car or building a custom power plant, understanding its design, maintenance needs, and upgrade options will help you harness its full potential. By following the maintenance guidelines, staying informed about common issues, and selecting quality parts, you can enjoy the smooth, reliable performance that has earned the Type 35 its legendary status for decades.

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