

mopar a body manual transmission conversion

mopar a body manual transmission conversion is a popular upgrade among Mopar enthusiasts looking to enhance driving engagement and vehicle performance in classic Chrysler A-body cars. This conversion involves replacing the original automatic transmission with a manual gearbox, providing improved control over gear selection and a more connected driving experience. Mopar A-body models, including Dodge Dart, Plymouth Valiant, and Plymouth Duster, are prime candidates for such conversions due to their solid drivetrain platforms and enthusiast support. This article covers the technical considerations, compatible components, installation steps, and common challenges when performing a mopar a body manual transmission conversion. Readers will gain comprehensive insights into selecting the right transmission, required modifications, and tips for ensuring a smooth and reliable manual swap.

- Understanding Mopar A-Body Manual Transmission Conversion
- Choosing the Right Manual Transmission
- Necessary Components and Modifications
- Step-by-Step Installation Process
- Common Challenges and Troubleshooting
- Performance and Driving Benefits

Understanding Mopar A-Body Manual Transmission Conversion

The mopar a body manual transmission conversion involves swapping out an automatic transmission in Mopar A-body vehicles for a manual transmission setup. Mopar A-body cars produced from the 1960s through the late 1970s were originally offered with various automatic and manual transmissions, but many models came predominantly equipped with automatic gearboxes. Enthusiasts often seek to convert these vehicles to manual transmissions to improve control, responsiveness, and overall driving dynamics. This process requires a good understanding of the vehicle's drivetrain architecture and compatibility between transmissions and engine components.

The Mopar A-body platform includes popular models such as the Dodge Dart, Plymouth Valiant, and Plymouth Duster. These cars share a common chassis and drivetrain design, making transmission swaps more streamlined. A successful manual transmission conversion requires careful planning to ensure the gearbox matches the engine, clutch, driveshaft, and shifter assembly. In addition, modifications to the vehicle's interior and transmission tunnel may be necessary to accommodate the manual shifter and clutch pedal assembly.

Historical Context of Mopar A-Body Vehicles

Mopar A-body cars were produced between 1960 and 1976 and were known for their lightweight construction and robust engines. These vehicles were available with a variety of transmissions from the factory, including the Torqueflite automatic and several manual transmissions like the A833 four-speed. Understanding the original transmission options helps guide the conversion process and informs which manual gearboxes are compatible.

Why Convert to Manual Transmission?

Manual transmissions offer several advantages over automatics, including increased driver control, improved fuel efficiency, and a more engaging driving experience. For classic Mopar cars, a manual transmission can also enhance the vehicle's value and performance potential, especially when paired with high-performance engine builds or upgraded drivetrains.

Choosing the Right Manual Transmission

Selecting the appropriate manual transmission is a critical decision in a mopar a body manual transmission conversion. The choice depends on factors such as engine compatibility, intended use, budget, and availability of parts. Common manual transmissions used in Mopar A-body conversions include the A833 4-speed, Tremec T5, and TKO series gearboxes.

A833 Four-Speed Manual Transmission

The A833 is a classic Mopar manual transmission originally offered in many A-body cars. It is a robust, close-ratio 4-speed gearbox known for its durability and authentic Mopar experience. The A833 fits well with small-block and big-block Mopar engines and maintains the original drivetrain geometry.

Tremec T5 and TKO Transmissions

Modern manual transmissions like the Tremec T5 and TKO provide improved gearing options, stronger internals, and better shift quality compared to older factory transmissions. These gearboxes are often adapted to Mopar A-body vehicles using bellhousing adapters and custom mounts, offering a balance between classic feel and contemporary performance.

Factors to Consider When Choosing a Transmission

- Compatibility with engine bellhousing bolt pattern
- Transmission length and fitment in the transmission tunnel
- Gear ratios suited for intended driving conditions

- Availability of replacement parts and rebuild kits
- Clutch engagement type and pedal effort

Necessary Components and Modifications

A successful mopar a body manual transmission conversion requires not only the transmission itself but also several supporting components and modifications. This section outlines the essential parts and changes needed to complete the swap.

Clutch Assembly and Pedal Setup

The clutch system is a fundamental part of any manual transmission conversion. A compatible clutch disc, pressure plate, throwout bearing, and pilot bearing must be selected to match the chosen transmission and engine. Additionally, installing a clutch pedal assembly in the vehicle's interior often requires modifications to the firewall and floorpan to accommodate the new pedal mechanism.

Transmission Crossmember and Mounts

Manual transmissions typically require a different crossmember and mounting points compared to automatics. Custom or aftermarket transmission mounts and crossmembers are often necessary to secure the transmission properly and maintain correct alignment with the driveshaft.

Shifter and Linkage Installation

Replacing the automatic shifter with a manual shifter involves installation of the appropriate shifter assembly and linkage. Depending on the transmission selected, a floor-mounted or column-mounted shifter may be used. Proper adjustment of the linkage ensures smooth and precise gear changes.

Drivetrain and Driveshaft Adjustments

The driveshaft length and yoke may need modification or replacement to match the manual transmission's output shaft. It is important to verify the driveshaft compatibility to avoid vibrations or misalignment issues.

Hydraulic or Cable Clutch Systems

Manual transmissions use either hydraulic or cable-operated clutches. Hydraulic setups offer smoother pedal feel and easier adjustment, while cable systems are simpler and more cost-effective. The choice depends on vehicle configuration and personal preference.

Step-by-Step Installation Process

Performing a mopar a body manual transmission conversion requires a systematic approach to ensure proper installation and vehicle functionality. The following steps outline the general process used by professionals and experienced enthusiasts.

1. Remove the existing automatic transmission, torque converter, and associated components.
2. Inspect and prepare the engine bellhousing mating surface for the manual transmission.
3. Install the pilot bearing and align the clutch assembly on the flywheel.
4. Mount the chosen manual transmission to the engine, ensuring proper torque on bellhousing bolts.
5. Install the custom transmission crossmember and secure the transmission mounts.
6. Modify or install the clutch pedal assembly inside the vehicle, including linkage or hydraulic lines.
7. Fit the manual shifter and linkages, adjusting for smooth gear engagement.
8. Adjust or replace the driveshaft to match the manual transmission output shaft.
9. Bleed the clutch hydraulic system or adjust the cable clutch as needed.
10. Test the entire drivetrain for proper operation and make necessary adjustments.

Tools and Equipment Required

The conversion process demands various tools and equipment, including but not limited to transmission jacks, engine hoists, torque wrenches, clutch alignment tools, and specialty hand tools for linkage and pedal installation.

Common Challenges and Troubleshooting

Several challenges can arise during a mopar a body manual transmission conversion. Addressing these issues proactively helps ensure a successful project and long-term reliability.

Fitment Issues and Clearance Problems

Manual transmissions may require modification of the transmission tunnel or crossmember to fit correctly. Clearance issues with the shifter or clutch pedal assembly can also occur, necessitating custom fabrication or part selection.

Clutch Engagement Problems

Improper clutch adjustment can lead to slipping, dragging, or difficulty shifting. Ensuring proper pedal height, free play, and hydraulic system integrity is essential to avoid these problems.

Driveshaft Vibration and Alignment

Incorrect driveshaft length or misaligned yokes may cause vibration at certain speeds. Precise measurement and balancing during installation reduce the risk of driveline issues.

Shifter Linkage Adjustment

Improperly adjusted linkage can lead to missed shifts or gear popping. Fine-tuning the shifter mechanism and verifying smooth operation are critical steps.

Performance and Driving Benefits

Completing a mopar a body manual transmission conversion significantly enhances the driving characteristics and performance potential of Mopar A-body vehicles. Manual gearboxes provide direct driver control over gear selection, enabling quicker acceleration and better engine braking. Enthusiasts often report a more engaging and rewarding driving experience after conversion.

Improved Control and Responsiveness

Manual transmissions allow drivers to precisely control engine RPM and torque delivery, which is especially beneficial for spirited driving or track use. This control translates into improved cornering, acceleration, and overall vehicle dynamics.

Increased Vehicle Value

Classic Mopar cars equipped with manual transmissions are often more desirable in the collector market. A well-executed manual transmission conversion can increase the vehicle's resale value and appeal to performance-minded buyers.

Enhanced Fuel Efficiency

Manual transmissions generally achieve better fuel economy compared to automatics due to reduced parasitic losses and more direct power transfer. This efficiency is an added benefit for daily driving or long-distance cruising.

Frequently Asked Questions

What is a Mopar A Body manual transmission conversion?

A Mopar A Body manual transmission conversion involves replacing the factory automatic transmission in a Mopar A Body vehicle (such as Dodge Dart, Plymouth Valiant, or Plymouth Duster) with a manual transmission to enhance driving engagement and performance.

Which manual transmissions are compatible with Mopar A Body vehicles?

Common manual transmissions compatible with Mopar A Body vehicles include the A833 4-speed, A904 3-speed, and T-5 5-speed transmissions. The choice depends on the model year, engine, and desired performance.

What are the main parts needed for a Mopar A Body manual transmission conversion?

Key parts typically include the manual transmission itself, clutch assembly (clutch disc, pressure plate, and release bearing), flywheel, clutch pedal assembly, manual transmission crossmember, shifter, driveshaft modifications, and appropriate linkage or cables.

Is it difficult to convert a Mopar A Body from automatic to manual transmission?

The conversion can be moderately challenging and requires mechanical knowledge and tools. It involves removing the automatic transmission, installing the clutch and manual transmission components, modifying or replacing the pedal assembly, and ensuring proper alignment and linkage.

Are there any wiring or electrical considerations when converting to manual transmission in a Mopar A Body?

Yes, some Mopar A Body vehicles have neutral safety switches and backup light wiring specific to automatic transmissions. These need to be rerouted or adapted for manual transmission use to ensure proper operation and safety.

Can I keep the original Mopar A Body driveshaft when converting to a manual transmission?

Often, the driveshaft length and yoke may need to be modified or replaced to fit the manual transmission output shaft, but in some cases, the original driveshaft can be reused with minor adjustments.

What are the benefits of converting a Mopar A Body to a

manual transmission?

Converting to a manual transmission offers better driver control, improved performance and acceleration, increased vehicle value for enthusiasts, and a more engaging driving experience compared to the original automatic transmission.

Additional Resources

1. *Mastering Mopar A-Body Manual Transmission Swaps*

This comprehensive guide covers everything you need to know about converting Mopar A-Body vehicles to manual transmissions. It includes detailed step-by-step instructions, wiring diagrams, and troubleshooting tips. Whether you're a beginner or experienced mechanic, this book helps you achieve a smooth and reliable conversion.

2. *The Mopar A-Body Transmission Conversion Handbook*

A practical manual that focuses specifically on transmission swaps for Mopar A-Body cars. It dives into the differences between automatic and manual setups and explains how to select the right components for your build. The book also offers advice on clutch installation, pedal assembly, and linkage adjustments.

3. *Mopar A-Body Manual Transmission Installation & Performance*

This book not only guides you through the manual transmission conversion process but also explores performance upgrades compatible with the Mopar A-Body platform. Readers will learn how to optimize gear ratios, improve shifting precision, and enhance overall driving dynamics after the swap.

4. *Classic Mopar A-Body Manual Transmission Conversion Techniques*

Focusing on vintage Mopar models, this book provides detailed restoration and conversion techniques for manual transmissions. Vintage enthusiasts will appreciate the authentic approaches to maintaining originality while upgrading to a manual gearbox.

5. *DIY Mopar A-Body Manual Transmission Swap*

An easy-to-follow guide for do-it-yourselfers interested in converting their Mopar A-Body from automatic to manual transmission. The book emphasizes affordable solutions, common pitfalls, and essential tools required for a successful swap.

6. *Mopar A-Body Drivetrain Upgrades and Manual Transmission Conversions*

This title covers the broader scope of drivetrain improvements alongside manual transmission conversions. It discusses compatible transmissions, clutch systems, driveshaft modifications, and differential upgrades tailored for Mopar A-Body cars.

7. *The Complete Guide to Mopar A-Body Manual Transmission Wiring*

A focused resource on the electrical aspects of manual transmission swaps in Mopar A-Body vehicles. It explains wiring harness modifications, neutral safety switch wiring, and integrating clutch safety switches to ensure safe and proper operation.

8. *Mopar A-Body Manual Transmission Clutch and Pedal Assembly Guide*

This book zeroes in on the clutch system and pedal assembly components required for manual transmission conversions. Detailed illustrations and part lists help readers understand installation, adjustment, and maintenance of the clutch mechanism.

9. *Performance Manual Transmission Conversions for Mopar A-Body Muscle Cars*

Designed for muscle car enthusiasts, this book explores high-performance manual transmission swaps for Mopar A-Body models. It includes expert tips on selecting racing clutches, short-throw shifters, and lightweight flywheels to maximize performance on the street or track.

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