

Ford Automatic Transmission Fluid Specifications

MOTORCRAFT® AUTOMATIC TRANSMISSION FLUID USAGE

TRANSMISSIONS														
Model Year	4R100	5R110 TORQ SHIFT	4R70W/ 4R70E	4R75W/E	4R44E	5R55E	5R44E	5R55 N/W/S	6R126	6R60/ 6R75	6R80	6R140 TORQ SHIFT 6	6R100	10R90
1999	V		V		V	V								
2000	V		V		V	V								
2001	V		V		V	V	V							
2002	V		V		V	V	V	V						
2003	V	LV	V		V	V	V	V						
2004	V	LV	V	V	V	V	V	V						
2005	V	LV	V	V	V	V	V	V	SP					
2006		LV	V	V	V	V	V	V	SP	SP				
2007		LV	V	V	V	V	V	V	SP	SP				
2008		LV		V	V	V	V	V	SP	SP				
2009		LV		LV	V	V	V	V			LV			
2010		LV		LV	V	V	V	V			LV			
2011		LV		LV		V	V				LV	LV		
2012		LV		LV							LV	LV		
2013		LV		LV							LV	LV		
2014		LV		LV							LV	LV		
2015		LV									LV	LV		
2016		LV									LV	LV		
2017											LV	LV	LV	ULV
2018											LV	LV	LV	ULV

TRANSAXLES																
Model Year	F4E (4EAT)	4F20E	CD4E	4F27E	AX45 (AX40E)	4F50N (AX4N)	CVT	6 Speed Auto AWF- 21	AW ECVT	FNRS	6F50N/ 55N	6F35N	DPS6	HF35 HYBRID	6F15	75PO DCT
1999	V	V	V		V	V										
2000	V	V	V	LV	V	V										
2001	V	V	V	LV	V	V										
2002	V	V	V	LV	V	V										
2003	V		V	LV	V	V										
2004	V		V	LV		V										
2005			V	LV		V	CVT	P	V							
2006			V	LV		V	CVT	P	V	V						
2007			V	LV		V	CVT	P	V	V	V					
2008			V	LV				P	V	V	V					
2009				LV				P	LV	V	V	LV				
2010				LV				P	LV		LV	LV				
2011				LV				P	LV		LV	LV	DCT			
2012				LV				P	LV		LV	LV	DCT			
2013				LV							LV	LV	DCT	LV		
2014											LV	LV	DCT	LV		
2015											LV	LV	DCT	LV		
2016											LV	LV	DCT	LV	LV	GT
2017											LV	LV	DCT	LV	LV	GT
2018											LV	LV	DCT	LV	LV	GT

KEY			
V	MERCON V	P	Premium Automatic Transmission Fluid
LV	MERCON LV	DCT	Dual Clutch Transmission Fluid
ULV	MERCON ULV	GT	Motorcraft Ford GT Supercar Transaxle Lubricant Motorcraft Ford GT Supercar Clutch Fluid
SP	MERCON SP		
CVT	Continuously Variable Chain Type		

ford automatic transmission fluid specifications

ford automatic transmission fluid specifications are a critical aspect of maintaining the health and longevity of your Ford vehicle's automatic transmission. Understanding the correct fluid type, its properties, and the recommended change intervals is paramount for preventing costly repairs and ensuring smooth gear shifts. This comprehensive guide delves deep into the nuances of Ford automatic transmission fluid, covering everything from identification and types to crucial maintenance practices. We will explore the specific requirements for various Ford models, the impact of incorrect fluid, and best practices for fluid maintenance to keep your transmission performing optimally.

- Introduction to Ford Automatic Transmission Fluid
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 - Mercon ULV
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- Conclusion

Understanding Ford Automatic Transmission Fluid Specifications: A Deep Dive

The automatic transmission in your Ford vehicle is a complex and vital component that requires specific care to ensure its optimal performance and durability. At the heart of this care lies the automatic transmission fluid (ATF). The **ford automatic transmission fluid specifications** are not arbitrary; they are meticulously developed to meet the unique demands of each Ford transmission model, ensuring proper lubrication, cooling, hydraulic pressure, and friction modification. Using the wrong type or failing to maintain the correct level of ATF can lead to premature wear, overheating, inefficient operation, and ultimately, expensive transmission failures. This section will lay the groundwork for understanding why these specifications are so important and what goes into them.

Why Ford Automatic Transmission Fluid Specifications Matter

The automatic transmission is a marvel of engineering, relying on a complex interplay of hydraulic pressure, friction materials, and precisely formulated fluids to shift gears smoothly and efficiently. The **ford automatic transmission fluid specifications** dictate the precise properties of the fluid that allow this complex system to function as intended. These properties include viscosity, thermal stability, oxidative resistance, and friction modifiers. Each of these elements plays a crucial role:

Viscosity Control

Viscosity refers to a fluid's resistance to flow. The specified viscosity of Ford ATF ensures that the fluid can effectively transmit hydraulic pressure to engage clutches and bands for gear changes, while also providing adequate lubrication to moving parts. Too thin a fluid may not generate sufficient pressure, leading to slipping, while too thick a fluid can impede flow and cause sluggish shifting, especially in colder temperatures.

Thermal Stability and Cooling

Automatic transmissions generate significant heat through friction during operation. The ATF acts as a coolant, absorbing this heat and dissipating it through the transmission cooler. Ford ATF specifications include requirements for thermal stability, meaning the fluid must resist breaking down and oxidizing at high temperatures. Fluid degradation can lead to sludge formation, which can clog vital passages and impair cooling, leading to overheating and severe damage.

Friction Modification

A key function of ATF is to provide the correct friction characteristics for the clutch packs and bands within the transmission. Ford ATF is formulated with specific friction modifiers that allow for smooth engagement of these components during gear changes. The precise balance of these modifiers ensures a seamless transition between gears without excessive slippage or harsh engagement, contributing to both driver comfort and transmission longevity.

Lubrication and Wear Prevention

The intricate moving parts within an automatic transmission require constant lubrication to prevent metal-on-metal contact and subsequent wear. The **ford automatic transmission fluid specifications** ensure that the fluid provides a protective film between these surfaces, reducing friction and wear on gears, bearings, and seals. This protective barrier is essential for the long-term durability of the transmission.

Hydraulic Pressure Transmission

The hydraulic system is the backbone of an automatic transmission. The ATF is pressurized by the transmission pump and directed through various valves and passages to actuate clutches and bands, thereby selecting gears. The fluid's compressibility and ability to maintain its properties under pressure are critical. Ford ATF specifications ensure the fluid can reliably transmit this hydraulic pressure for consistent and accurate gear selection.

Understanding Ford Transmission Fluid Types

Ford has evolved its transmission fluid requirements over the years, introducing new formulations to meet the demands of modern, more complex transmissions. It is imperative to use the fluid specifically recommended for your Ford model and year. The most common Ford ATF specifications you will encounter are outlined below:

Mercon V

Mercon V is a widely used synthetic-blend automatic transmission fluid that replaced Mercon in many Ford vehicles. It offers improved thermal stability, oxidation resistance, and shear stability compared to its predecessor. Mercon V is suitable for most Ford vehicles manufactured after 1999 that originally specified Mercon or Mercon V. It is known for its excellent performance in providing smooth shifts and protecting against wear.

Mercon LV

Mercon LV (Low Viscosity) is a specialized, full synthetic automatic transmission fluid designed for newer Ford transmissions, particularly those with more gears and electronically controlled hydraulic

systems. Its lower viscosity provides better fuel economy and improved performance in colder climates. Mercon LV is often specified for transmissions like the 6R60, 6R75, and 6R80. Always confirm if your vehicle specifically requires Mercon LV, as using it in a transmission designed for Mercon V could lead to performance issues.

Mercon ULV

Mercon ULV (Ultra Low Viscosity) is an even lower viscosity fluid than Mercon LV, designed for the latest generation of Ford transmissions, including 8-speed and 10-speed automatics. This fluid is engineered to maximize fuel efficiency and provide exceptional performance in a wide range of operating temperatures. Its ultra-low viscosity is critical for the precise hydraulic control required by these advanced transmissions. Using any other fluid in a transmission requiring Mercon ULV can cause significant damage.

WSS-M2C195-A and WSS-M2C200-D2

Ford uses a Vehicle Specification (WSS) system for many of its fluids, including automatic transmission fluids. WSS-M2C195-A is a specification for a specific type of ATF often used in certain Ford and Lincoln transmissions. Similarly, WSS-M2C200-D2 is a more recent specification for a highly specialized fluid, often a low-viscosity synthetic, designed for specific newer transmissions. These specifications often denote proprietary formulations developed by Ford or its fluid suppliers.

Other Specialized Ford Fluids

In addition to the commonly cited Mercon specifications, Ford may also specify other specialized fluids for particular transmission applications, such as those found in performance vehicles or heavy-duty applications. These might include fluids with enhanced cooling properties, higher shear strength, or unique friction characteristics. It is absolutely essential to refer to your vehicle's documentation to identify the precise specification required.

Identifying the Correct Ford Automatic Transmission Fluid

Choosing the correct automatic transmission fluid for your Ford is non-negotiable. Using an incorrect fluid can lead to immediate or gradual damage to the transmission. Fortunately, there are several reliable methods to ensure you select the right product:

Consulting Your Owner's Manual

The most authoritative source for **ford automatic transmission fluid specifications** is your vehicle's owner's manual. This document will clearly state the exact type of ATF required, often listing the specific Ford specification number (e.g., Mercon V, Mercon LV) and sometimes even recommending specific brand names or product lines. It's a good practice to keep your owner's

manual in a safe place and refer to it for all your vehicle's fluid maintenance needs.

Decoding the Transmission Dipstick

While not all Ford vehicles have a traditional transmission dipstick (many newer models have sealed transmissions where fluid level checks require specialized tools), those that do can often provide clues. Some dipsticks might have markings or color codes, but relying solely on this can be misleading. The owner's manual remains the definitive guide.

Vehicle Identification Number (VIN) Lookups

Automotive parts stores and dealerships can use your vehicle's VIN to look up the exact specifications for all fluids, including automatic transmission fluid. This is a highly accurate method, especially if your owner's manual is lost or if you are unsure about the information it contains. Many online resources also offer VIN lookup services for fluid specifications.

The Importance of Fluid Quality and Additives

When purchasing Ford ATF, it's crucial to select a reputable brand and ensure the product meets the specified Ford standard. Not all fluids labeled "universal" or "multi-vehicle" are suitable for every Ford transmission. Using a low-quality fluid or one with incompatible additives can lead to a host of problems:

- **Compromised Friction Properties:** Incorrect friction modifiers can cause erratic shifting, slippage, or harsh engagements.
- **Reduced Thermal Stability:** Cheaper fluids may break down faster at high temperatures, leading to sludge and varnish formation.
- **Seal Swelling or Shrinkage:** Certain additives can cause seals to swell or shrink, leading to leaks or seal failure.
- **Corrosion:** Inadequate corrosion inhibitors can allow internal transmission components to rust or corrode.

Always opt for fluids that are explicitly certified to meet the required Ford specification. This guarantees that the fluid has undergone rigorous testing and possesses the precise properties needed for your Ford's transmission.

Signs of Low or Degraded Ford Automatic Transmission Fluid

Regularly monitoring your transmission fluid level and condition can help identify potential issues before they become severe. Here are common signs that your Ford automatic transmission fluid may be low or degraded:

Slipping Gears

One of the most telling signs is when the transmission seems to slip out of gear or hesitates to engage a gear. This often occurs when the fluid level is too low or the fluid has lost its viscosity and friction-modifying properties, preventing the clutches from engaging properly.

Hesitation or Jerking

If your Ford transmission exhibits delayed engagement when shifting from Park to Drive or Reverse, or if it jerks or shudders during shifts, it can indicate a fluid issue. Degraded fluid might not be able to transmit hydraulic pressure effectively, leading to these symptoms.

Unusual Noises

Whining, clunking, or grinding noises coming from the transmission, especially during shifts or when the vehicle is in gear, can be a warning sign. These noises may be caused by worn internal components due to insufficient lubrication or by air being drawn into the system due to low fluid levels.

Discoloration and Odor

Fresh automatic transmission fluid is typically bright red and has a slightly sweet smell. If the fluid appears dark brown or black, or if it emits a burnt odor, it indicates that the fluid has overheated and degraded. This is a critical warning sign that requires immediate attention, as the transmission has likely experienced significant heat damage.

Ford Automatic Transmission Fluid Change Intervals

Ford recommends specific intervals for changing the automatic transmission fluid. These intervals are based on mileage and driving conditions. Adhering to these recommendations is crucial for maintaining the transmission's health. Typical service intervals might range from 30,000 to 100,000 miles, depending on the vehicle model, the type of transmission, and the driving environment. Severe driving conditions, such as frequent towing, stop-and-go city driving, or operating in extreme temperatures, can necessitate more frequent fluid changes.

It's important to note that some newer Ford vehicles with "lifetime" fluids or sealed transmissions still require periodic fluid checks and, in some cases, fluid changes. The definition of "lifetime" in this context typically refers to the manufacturer's warranty period or a specific mileage, not the indefinite life of the vehicle. Always consult your owner's manual for the precise recommended service intervals for your specific Ford model.

DIY vs. Professional Ford Transmission Fluid Service

While changing transmission fluid can be a feasible DIY task for some experienced mechanics, it's important to weigh the benefits and challenges. For vehicles with traditional dipsticks, a simple drain and fill might be possible, but this typically only replaces a portion of the total fluid. A more thorough service, like a transmission flush, requires specialized equipment and expertise.

- **DIY Benefits:** Can be cost-effective, allows for personal control over fluid quality, and provides a sense of accomplishment.
- **DIY Challenges:** Requires the right tools and knowledge, risk of incorrect fluid type, potential for improper filling, and often only a partial fluid replacement if a flush is not performed.
- **Professional Service Benefits:** Access to specialized flushing equipment for a complete fluid exchange, expertise in identifying the correct fluid and potential issues, and often a warranty on the service performed.
- **Professional Service Challenges:** Higher cost compared to DIY, reliance on the technician's skill and honesty.

For most owners, especially those with newer Ford vehicles or those unfamiliar with transmission maintenance, a professional service is often the safer and more effective option to ensure the correct **ford automatic transmission fluid specifications** are met and the service is performed correctly.

Common Mistakes to Avoid with Ford Transmission Fluid

Incorrectly servicing your Ford's automatic transmission fluid can do more harm than good. Be aware of these common mistakes:

- **Using the Wrong Fluid Type:** As repeatedly emphasized, using a fluid that does not meet the specified Ford specification is the most detrimental mistake.
- **Overfilling or Underfilling:** Both overfilling and underfilling the transmission can lead to operational problems and damage. Overfilling can cause the fluid to foam, leading to poor

lubrication and over-pressurization, while underfilling results in inadequate lubrication and hydraulic pressure.

- **Mixing Different Fluid Types:** Never mix different brands or types of ATF unless specifically stated as compatible by the manufacturer. Even fluids with similar names can have different additive packages and performance characteristics.
- **Ignoring Fluid Condition:** Failing to check the fluid level and condition regularly can lead to issues going unnoticed until significant damage has occurred.
- **Performing a "Flush" with Generic Fluids:** If a transmission flush is performed, ensure the technician uses the exact Ford-specified fluid. Generic "universal" flushes can contain harsh detergents or incompatible additives that can damage the transmission.

The Future of Ford Automatic Transmission Fluid

As Ford continues to innovate with new transmission technologies, such as more gears and advanced electronic controls, the demands on automatic transmission fluids will continue to evolve. We can expect to see further development in ultra-low viscosity fluids, improved thermal stability, and even more specialized formulations designed to optimize fuel economy, reduce emissions, and enhance performance. The focus will remain on precision engineering of fluids that can handle increased operating pressures and temperatures while providing superior wear protection and extended service life. Staying informed about the latest **ford automatic transmission fluid specifications** through reliable sources like your owner's manual and authorized Ford service centers will be increasingly important.

Frequently Asked Questions

What is the latest Ford automatic transmission fluid specification to be aware of?

The latest widely adopted Ford automatic transmission fluid specification is MERCON® ULV (Ultra Low Viscosity), often designated as XT-11QGC or equivalent. This fluid is crucial for the newer 10-speed automatic transmissions.

My Ford F-150 has a 10-speed transmission. What fluid specification should I use?

For most Ford F-150 models equipped with the 10-speed automatic transmission, you will need to use a fluid that meets the MERCON® ULV specification. Always verify this in your owner's manual or on the transmission dipstick/fill cap.

Can I use MERCON® V in a transmission that requires MERCON® ULV?

No, it is not recommended to use MERCON® V in transmissions designed for MERCON® ULV. MERCON® ULV has a significantly lower viscosity, and using a thicker fluid like MERCON® V can negatively impact transmission performance, efficiency, and longevity.

How do I identify the correct Ford transmission fluid specification for my vehicle?

The most reliable way to identify the correct specification is to consult your vehicle's owner's manual. Many Ford vehicles also have the required fluid type printed on the transmission dipstick or fill plug.

What are the benefits of using MERCON® ULV fluid in newer Ford transmissions?

MERCON® ULV offers improved fuel efficiency due to its lower viscosity, better performance in cold temperatures, and enhanced wear protection, contributing to longer transmission life.

Are there aftermarket fluids that are compatible with Ford's MERCON® ULV specification?

Yes, many reputable aftermarket fluid manufacturers produce transmission fluids that are certified to meet or exceed the MERCON® ULV specification. Look for explicit labeling on the product packaging that states 'Meets MERCON® ULV' or lists the Ford part number (e.g., XT-11QGC).

My older Ford Explorer has a 6-speed transmission. What fluid spec does it likely use?

Older Ford models with 6-speed automatic transmissions typically require MERCON® LV (Low Viscosity) or MERCON® V, depending on the specific year and transmission model. It is essential to check your owner's manual for the exact specification.

What happens if I use the wrong type of transmission fluid in my Ford?

Using the wrong transmission fluid can lead to a range of problems, including slipping gears, rough shifting, overheating, increased wear on internal components, and ultimately, costly transmission failure. Always adhere to the manufacturer's specified fluid.

Additional Resources

Here are 9 book titles related to Ford Automatic Transmission Fluid specifications, each starting with "", along with their descriptions:

1. *The Fluid Foundation: Understanding Ford ATF Specifications*

This comprehensive guide delves into the foundational principles behind Ford's automatic transmission fluid (ATF) specifications. It explores the historical evolution of these fluids and the critical role they play in transmission longevity and performance. The book details key chemical properties, additive packages, and testing methodologies that define Ford's various ATF types. Readers will gain a deep understanding of why specific fluids are mandated for different Ford transmissions.

2. Mercon Mastery: A Deep Dive into Ford ATF Standards

This specialized volume focuses intently on Mercon ATF specifications, the prevalent fluid type for a vast number of Ford vehicles. It dissects the nuances of Mercon, Mercon V, and their successors, explaining the performance requirements and compatibility considerations. The book provides practical advice on selecting the correct Mercon fluid for various Ford models and explains the consequences of using incorrect fluids. It serves as an indispensable resource for technicians and enthusiasts alike.

3. Beyond Mercon: Navigating Modern Ford Transmission Fluids

This forward-looking book explores the landscape of Ford automatic transmission fluids beyond the traditional Mercon designations. It examines newer specifications and their impact on advanced transmission designs, including those found in performance and hybrid vehicles. The text highlights the increased complexity of modern ATFs, addressing synthetic formulations and their specific benefits. It aims to equip readers with the knowledge to confidently handle the latest Ford transmission fluid requirements.

4. Fluid Dynamics for Ford Transmissions: Principles and Practice

This text bridges the gap between fluid mechanics and Ford automatic transmission fluid specifications. It explains how fluid properties like viscosity, thermal stability, and lubricity directly influence transmission operation and durability. The book provides insights into the engineering rationale behind specific ATF requirements for various Ford transmissions. It is ideal for those who want to understand the "why" behind the specifications, not just the "what."

5. The Technician's Guide to Ford ATF Fluids

Designed specifically for automotive technicians, this practical guide offers clear and concise information on Ford ATF specifications. It provides easy-to-understand charts and cross-references for identifying the correct fluid for a wide range of Ford vehicles and transmission models. The book also covers common fluid-related issues and troubleshooting techniques, making it an essential tool for everyday workshop use. It emphasizes best practices for fluid changes and maintenance.

6. Ford's Fluid Frontier: Innovation in Transmission Lubrication

This book chronicles the ongoing innovation in Ford's approach to automatic transmission fluids. It delves into the research and development that drives new specifications, focusing on advancements in fuel efficiency, extended service intervals, and enhanced component protection. The text explores the role of emerging technologies and materials in shaping future Ford ATF standards. It offers a glimpse into the future of Ford transmission lubrication.

7. Specification Semantics: Deconstructing Ford Automatic Transmission Fluids

This analytical book provides a detailed breakdown of the terminology and meaning within Ford automatic transmission fluid specifications. It dissects the technical jargon, acronyms, and performance metrics that define these fluids. The book aims to demystify the often-complex language of fluid specifications, enabling readers to accurately interpret and apply them. It is a valuable resource for anyone needing a precise understanding of the technical details.

8. Ford ATF Specifications: A Comparative Analysis

This insightful volume offers a comparative analysis of various Ford automatic transmission fluid specifications, highlighting their differences and similarities. It explores the historical progression of these specifications and the reasons for their evolution. The book provides practical guidance on identifying compatible fluids for older and newer Ford transmissions, addressing potential cross-compatibility issues. It is designed to prevent costly mistakes related to fluid selection.

9. The Chemistry of Transmission Performance: Ford ATF Insights

This book delves into the chemical composition and properties of Ford automatic transmission fluids and how they directly impact transmission performance. It examines the role of specific additives, such as friction modifiers, viscosity index improvers, and anti-wear agents, in meeting Ford's stringent specifications. The text explains how these chemical components contribute to smooth shifting, heat dissipation, and overall transmission health. It's a must-read for those interested in the science behind the fluid.

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