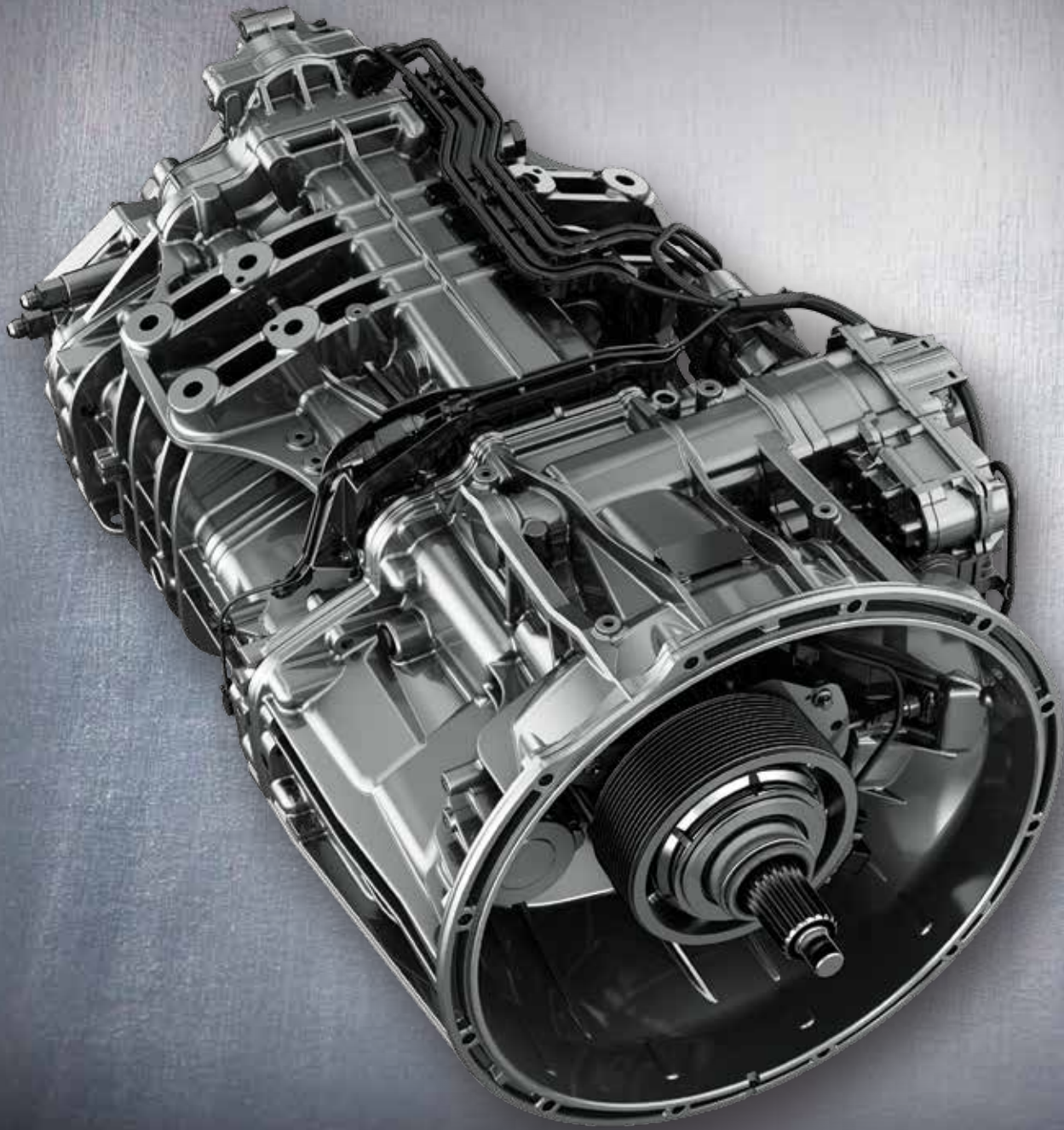


DETROIT™ DT12™ TRANSMISSION

12
Speeds

FROM
1250-2050
lb-ft Torque Input

DIRECT or OVER
Drive



DETROIT™
DEMAND PERFORMANCE

THE DETROIT™ AUTOMATED MANUAL TRANSMISSION

THE BEST OF

DETROIT IS PROUD TO OFFER THE DT12™ AUTOMATED MANUAL TRANSMISSION. ENGINEERED AND BUILT WITH PRECISION. OPTIMIZED FOR PERFORMANCE AND EFFICIENCY.

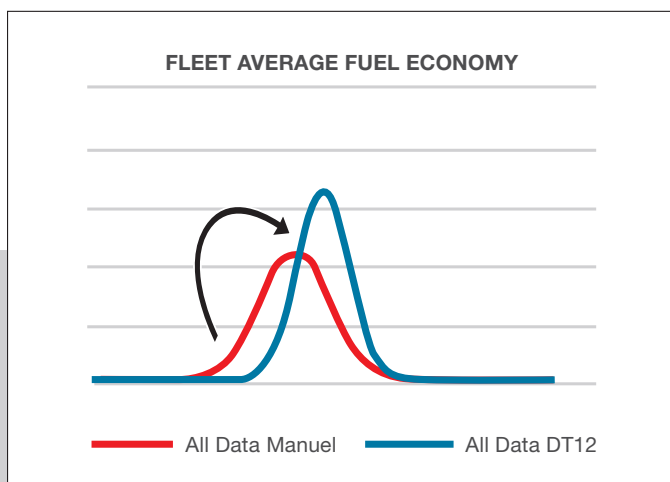
WHAT'S AN AUTOMATED MANUAL TRANSMISSION?

An automated manual transmission (AMT) combines a traditional clutch-actuated manual gearbox with a computer-controlled shift actuator and clutch. The best shift patterns are selected electronically to provide optimal power and fuel efficiency. An AMT is a proven technology used around the world. At Detroit, we believe it represents the next generation. With computer-controlled shifting and clutch engagement, only two pedals are needed to operate the truck: brake and accelerator.

WHY CONSIDER AN AMT?

An automated manual transmission is more fuel-efficient, especially when you average fuel consumption over an entire fleet traveling a variety of routes. Automated control of the clutch improves shift quality and leads to longer clutch life. And it's easier to operate, making it ideal for drivers of all experience levels.

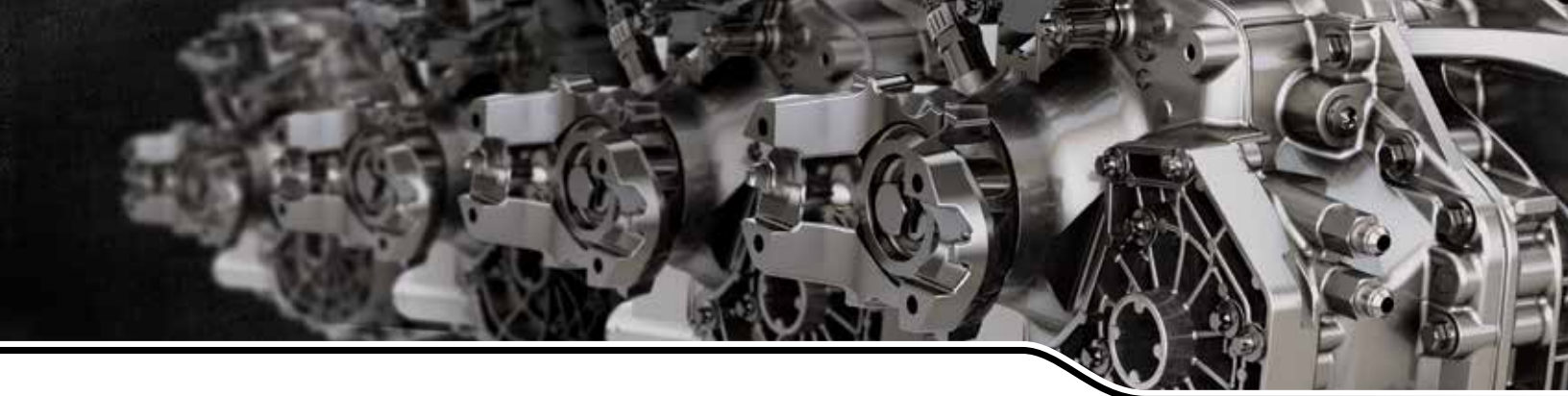
DT12 FUEL ECONOMY IMPROVEMENT



The DT12 will narrow the bell curve of your drivers' fuel economy. Fleets should see fuel economy improvements for new and lead-footed drivers.

Note: Numbers are for demonstration purposes only. Not based on actual testing.





BOTH WORLDS

EASE AND ECONOMY GO INTO HIGH GEAR.

At Detroit, we are focused on providing our customers with the most efficient powertrain components possible. The Detroit DT12 provides efficiency in three ways: fuel economy, durability and ease of operation.



We understand how fleets work and how they succeed. Any incremental increase in fuel economy can make a huge impact on profitability. Our engineers have made significant strides to reduce fuel consumption with this new transmission.

A fleet's bottom line also is affected by the durability and longevity of its vehicles. The operation of our DT12 was designed to limit unnecessary wear and tear. The smoother the action, the more efficient the results.

Driver recruitment, training and performance play crucial roles in fleet efficiency. That's why we chose to offer an AMT. It's easy to master, so drivers can reach their optimal performance sooner.

The Detroit DT12 is part of our complete line of powertrain components that also includes our famous engines and our full line of axles. When you spec your truck with the entire package, you can expect an even greater level of efficiency, from operational performance to maintenance and warranty service.

Ultimate efficiency goes beyond managing fuel consumption. It's the result of knowledge and ingenuity. That's what makes this transmission different.

**ULTIMATE EFFICIENCY:
IT'S THE RESULT OF
KNOWLEDGE AND INGENUITY.**

ENGINEERED FOR ECONOMY

THE DETROIT DT12 IS A 12-SPEED, AUTOMATED MANUAL TRANSMISSION WITH SHORTER GEAR STEPS. THE DETROIT DT12 WAS DESIGNED WITH A NUMBER OF INNOVATIVE EFFICIENCY FEATURES TO ACHIEVE OPTIMAL FUEL ECONOMY.

Optional Direct Drive. In top gear, the transmission operates as a direct drive, sending engine input directly through the main shaft. This feature, along with the "superfinished" gears in the new DT12, creates an even greater mesh between gears, which reduces parasitic losses and increases fuel efficiency.

Powertrain Communication. The transmission communicates in real time with the proprietary powertrain network and motor-control module to optimize efficiency throughout the entire powertrain.

eCoast. Helps maximize fuel efficiency by allowing the vehicle to coast down grades. The engine operates at idle speeds while maintaining momentum. Sophisticated transmission electronics ensure safe operation in all driving conditions.

Total Weight. The Detroit DT12 provides a weight advantage over traditional designs. The aluminum housing and single countershaft help save weight, allowing for even more payload efficiency.

Skip Shift. To increase shifting efficiency, the electronic powertrain controls automatically skip unnecessary gears. This helps increase acceleration to achieve cruising speed quickly and smoothly. This also lets the driver begin the acceleration in the appropriate start gear based on load and grade.

Active Driveline Protection. The Transmission Control Module (TCM) calculates the torque wind-up in the driveline and regulates with engine torque control for enhanced driving comfort and less driveline wear. The TCM even limits torque in severe surface conditions, protecting the driveline.

Transmission Oil. The factory oil fill required for the new DT12 in the new Cascadia and Western Star 5700 can be reduced by a total of 1.6 to 3.2 qts depending on DT12 version. This reduces oil churning and oil bathing friction within the transmission case. The new DT12 transmission also now comes standard from the factory with 75W85 instead of 75W90.*

Oil Pump. An oil pump, powered by the countershaft, delivers oil directly to the gears. This is more precise and efficient than bathing all of the gears in oil.



*Check with your dealer on oil restrictions required for transmission servicing.

VARIABLE-SPEED CRUISE CONTROL

The DT12 incorporates variable-speed cruise control, which allows the engine brake to regulate speed to achieve optimal driving efficiency. With the engine brake set to off, drivers can choose from the three settings on the cruise control limit switch located on the dash:

LOW is ideal for steep grades. The engine brake slows the truck at a low threshold, e.g., +3 mph.

MEDIUM is ideal for rolling hills. The engine brake slows the truck at a higher threshold, e.g., +6 mph.

OFF is ideal for flat terrain or areas with noise restrictions. The engine brake is disabled while in cruise.

Variation level can be changed as a parameter in the TCM. Using these settings helps control downhill speed and takes advantage of uphill momentum. The TCM will determine the right amount of engine braking required, or may be overridden using the engine brake selection on the shift lever.

INTELLIGENT POWERTRAIN MANAGEMENT

Intelligent Powertrain Management (IPM) knows the route ahead and will accelerate, preselect gears, eCoast and brake the engine to maximize efficiency. Using preloaded terrain maps, IPM will adjust the following to ensure the truck is carrying the most efficient momentum into road conditions ahead.

- DT12 shift strategy
- eCoast
- Engine torque output
- Engine braking level

Since IPM is integrated with cruise control, there are ideal driving situations and terrains where the fuel efficiency benefit is greatest. Also, the more time spent in cruise control, the more effectively IPM will work.

- High top gear and top-1 gear times
- High cruise control times
- Rolling terrain
- Mountainous terrain
- Varying speed limits

Normal Driving Situation	Driver Decision	Intelligent Powertrain Management
Approaching a grade	Downshift and accelerate	Hold gear (DT12 can shift while climbing) and minimal acceleration (calculated within CPC)
Cresting a hill	Upshift and resume cruise control	eCoast over the summit and engine brake when speed approaches CC-band limit
Rolling hills	Accelerate uphill and decelerate downhill	Transition from deceleration to acceleration (and vice versa) while still on grade to carry momentum into the next hill

DRIVEN TO PERFORM

The DT12 is engineered for enhanced flexibility and drivability.

The term “automated” means a pneumatic clutch and shift actuator actually shift the transmission for you. This allows faster and smoother gear shifts than electronic actuation.

Drivers can choose between shift modes depending on the package spec'd with the DT12:

ECONOMY PACKAGE only includes automated economy mode. Shifts happen automatically and keep RPMs to an efficient level.

STANDARD PACKAGE includes automated economy and manual shift modes, for when terrain or conditions need manual control.

PERFORMANCE PACKAGE includes the standard package plus automated performance mode, with higher RPM shifts to take full advantage of available power and torque. A kickdown accelerator pedal is also included that downshifts or holds a lower gear at full throttle.

ADDITIONAL PERFORMANCE FEATURES:

CREEP MODE modulates the clutch to improve low-speed maneuverability, ideal for backing up to a loading dock or maneuvering through tight city traffic. All the driver has to do is let off the brake pedal.



Creep Mode makes backing up to a loading dock safe and easy.

POWER TAKE-OFF for the DT12 is designed for use in the Bulk Haul Tractor Trailer market, specifically targeting these applications: liquid trailers, dry goods (e.g., sugar or flour), wet goods (e.g., fish meal), and moving floors. The Detroit DT12 Direct Drive and Overdrive transmissions are available with a custom-designed rear-mount-only PTO.* This PTO option is available for order only on OBD2016/GHG2017 Freightliner Cascadia and Western Star 5700 models. The DT12 with PTO is available for stationary operation on fully paved surfaces only. The DT12 PTO comes with 30-month/300,000-mile standard warranty.

*If an aftersales PTO installation is desired, a factory-installed PTO Prep Kit is also available for OBD2016/GHG2017 Freightliner Cascadia and Western Star 5700 models only.



SERVICE TAKEN TO A HIGHER LEVEL

Detroit transmissions are sold and serviced by an unmatched network of knowledgeable sales people and expert factory-trained technicians at hundreds of locations throughout the United States and Canada. We also offer a live Customer Support Call Center.

Detroit offers outstanding parts availability, and transmission owners enjoy comprehensive warranty coverage—including fast, hassle-free processes—and expedited parts and service for critical downtime situations.

WARRANTY COVERAGE

Detroit is known for designing and manufacturing products that set industry standards. We are proud of that, and believe that quality is the surest way to maintain long-lasting relationships with our customers. Our transmissions come with a five-year/750,000-mile standard warranty. The clutch comes with a three-year/350,000-mile warranty.

INNOVATIONS IN SAFETY

Detroit DT12 Specifications	
Speeds	12 forward / 4 reverse
Torque Ratings	1250–2050 lb-ft
Gear Ratios / Overall Ratio	Direct Drive: 14.93 - 1 / 14.93 Overdrive: 11.67 - 0.78 / 14.96
GCW Limits	Direct Drive: 80,000 lbs. Overdrive: 130,000 lbs.*
Dry Weight	518–639 lbs.

*With a dual-plate clutch. Application approval required.

KEEP DRIVERS SAFE AND FLEETS MOVING.

The DT12 includes a variety of innovative safety features that help protect the driver and entire vehicle, as well as enhance the driving experience. Because the transmission is automated, new drivers experience a shorter learning curve. Various driver interfaces have been designed to reduce driver fatigue, including a true two-pedal system along with convenience features like the shift lever and cruise control. Other advanced features include:

HILL START AID When stopped on grades of 6% or more, the vehicle is prevented from rolling backward on uphill grades or forward on a downhill grade.

AUTO NEUTRAL When the parking brake is engaged or the vehicle is shut down, the transmission electronically commands neutral gear. The shifter must be moved to N (neutral) before the truck is started again.

DETROIT™ CONNECT VIRTUAL TECHNICIANSM DIAGNOSTIC SERVICES Prevents unsafe driving situations from occurring by alerting the driver to engine or transmission faults that could cause damage.



The shift lever includes gear, auto/manual mode and engine brake selection for excellent ergonomics.



If the vehicle is stopped on an incline, the Hill Start Aid prevents rollback.

VIRTUAL TECHNICIAN

Our factory-installed Virtual Technician onboard diagnostic system takes the guesswork out of transmission repair. When a truck's transmission check light illuminates, information is sent to you and the Detroit Customer Support Center (CSC), where a trained representative can diagnose the issue, recommend service and even contact the nearest authorized locations with parts in stock. The CSC can tell you if you need to pull over, so you don't cause further damage, or if you can stay on the road. Put simply, it's like having a technician in every truck.

Virtual Technician's optional Visibility Package is a fleet management system that offers access to the Ground Traffic Control website. This groundbreaking system captures latitude, longitude, time and odometer readings for your trucks. With pinpoint accuracy, the system records vehicle stops, speeds, routes traveled, mileage by state, excessive idling, fuel consumption and other onboard events. The Visibility Package helps you manage your business more efficiently.



EMPOWERED BY DETROIT

Here at Detroit, we've built our reputation by building high-quality products that perform beyond expectations. Today, you'll find our components in Freightliner and Western Star trucks on roads and at job sites around the globe.

Our people and our continuous pursuit of innovation are powerful driving forces. Our engineering and manufacturing expertise are world-class. Our service network is expansive and responsive. That's why we continue to grow and evolve. It's also why we now offer a full line of products: engines, axles, transmissions and advanced technologies. That's right. The company that makes the heart of the truck now gives you the arms, legs and backbone to go with it. So, if you demand it all, demand Detroit.

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