

# Your Competitive Edge Starts Here



*Powering Business Worldwide*





# Drive On.

With more than 100 years of proven success in on-highway and off-highway applications, Eaton® is a global leader in vehicle transmissions. Original equipment manufacturers around the globe count on Eaton's extensive experience in tailor-made solutions that enhance overall vehicle efficiency, reliability, safety and reliability.

Our new joint venture, Eaton Cummins Automated Transmission Technologies™ is designed to set the bar with best-in-class fuel efficiency, performance, and uptime for heavy-duty and medium-duty applications. Successfully combining technical strengths, experience and knowledge all while leveraging our global service and support networks to move our customers forward.



The guide details popular medium- and heavy-duty transmissions from Eaton and Eaton Cummins Automated Transmission Technologies.

The products are backed by the support, solutions and expertise of the Roadranger® Network — North America's most experienced powertrain support network, with dedicated professionals providing a complete spectrum of support, from spec'ing and service to aftermarket assistance.

Read on to learn why our family of world-class transmissions is the right choice for your fleet and the preferred choice of drivers.

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## Segment Definitions

Eaton transmissions have been engineered to give you the competitive edge you desire. Whether you're spec'ing a transmission for heavy-duty or medium-duty applications, Eaton's got you covered.

### Heavy-Duty



#### Linehaul

Over-the-road driving, with a focus on fuel economy, comfort and performance.

10 speeds

Integrated OEM options

Small-step overdrive, standard overdrive and direct drive

Up to 110,000 lbs. GCW



#### Performance

Specialty and Linehaul trucks needing superior performance on grades, higher resale value and the ability to haul higher weight to get the job done.

13 – 18 speeds

Unlimited GCW options



#### Vocational

Specializing in off-highway applications, with emphasis on low-speed maneuverability, control and safety.

10 – 15 speeds

Up to 110,000 lbs. GCW

### Medium-Duty



#### Truck

Pickup and delivery, towing and recovery, and beverage vehicles, with a focus on reliability, fuel efficiency, ease of operation and cost of ownership.

7 speeds

Up to 35,000 lbs. GCW



#### School Bus

Type C and Type D buses looking for safety, comfort, reliability and serviceability.

7 speeds

Up to 33,000 lbs. GVW

# Transmission General Information

## How to use the tables

Locate the appropriate model in the far left-hand column of the tables and follow that row horizontally across the page to find information pertaining to that model.

Specifications, features and benefits can also be found at [www.roadranger.com](http://www.roadranger.com).

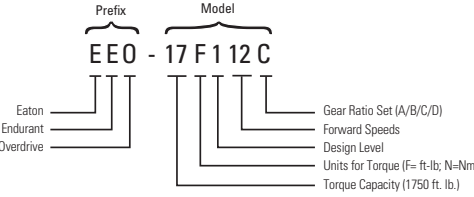
The models, options and specifications listed in this document were current at the time of publication. Model availability, options and specifications are subject to change without notice.

## General Transmission Notes

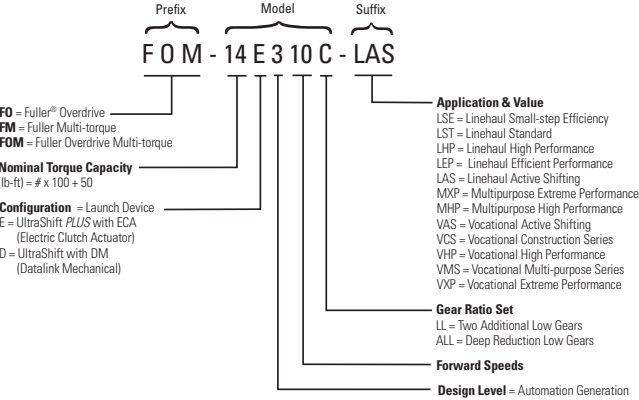
- Length** Listed lengths are installation dimensions from face of clutch housing to front bottoming surface of companion flange or yoke, except AT-1202 and 2-A-92, which are from bottoming surface of input yoke to bottoming surface of output yoke.
- Weight** Listed weights are without clutch housing, controls and lubricant unless otherwise specified. All weights are approximate. Add 7 lbs. [3.15 kg] to models with internal oil pump.
- Oil Capacity** Oil capacities are approximate, depending on inclination of transmission. Always fill transmission to level of filler opening or center of sight glass. Refer to Form TCMT0020 and TCMT0021 Lubrication Requirements for more information.
- Oil Cooler** Recommended – With engines 350 HP and above.  
Required – With engines 400 HP and above and GCWs over 90,000 lbs. [40,823 kg].  
With engines 400 HP and above and 1400 lbs.-ft. [1898 Nm] or greater torque.  
With engines 450 HP and above.  
With engines 1500 lbs.-ft. [2034 Nm] and above.  
Excluded – With Fuller Advantage® Series transmissions.
- Shift Control Systems** A variety of direct-mounted shift lever configurations and mechanical remote controls is readily available for all medium- and heavy-duty Transmissions. Shift bar housings for forward gear shift lever location are available for all heavy-duty models, with the exception of RT-6609A and automated products. A variety of automatic-style shift controls is available, both shift lever and push button, for automated transmissions. For specific applications, contact your OEM.

- Oil Filters** Recommended – With 13- and 18-speed transmissions.

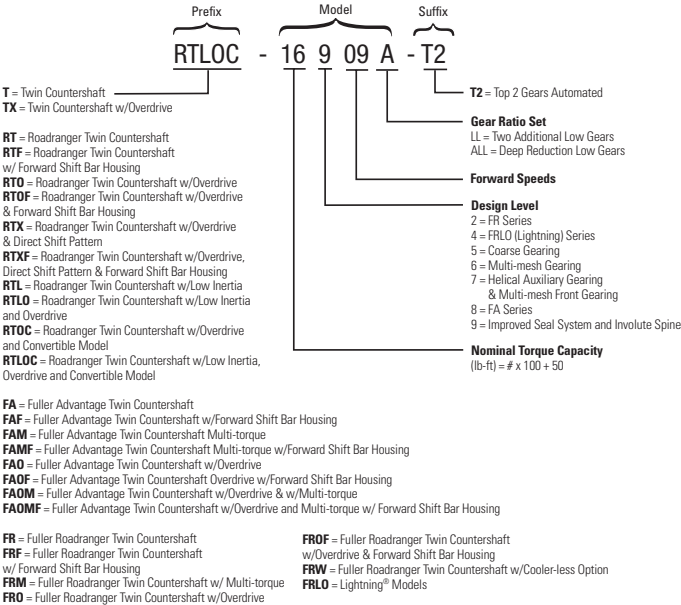
### Endurant™ Nomenclature



### Heavy-Duty UltraShift® PLUS Nomenclature (reference item RRSLO002 for further nomenclature explanations)



### Heavy-Duty Nomenclature



### Clutch Housing Weights & Availability

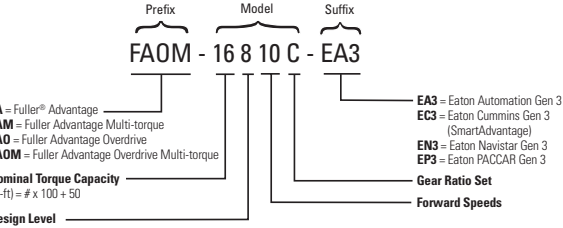
Model Series	SAE NO. 1			SAE NO. 2		
	Housing Type	Aluminum [kg]	Iron [kg]	Housing Type	Aluminum [kg]	Iron [kg]
FA-Series, RT- & FR-Series¹	Standard	23 lbs. [10]	76 lbs. [34]	Standard	21 lbs. [10]	68 lbs. [31]
	Nodal	36 lbs. [16]	92 lbs. [42]	Nodal	N/A	88 lbs. [40]

¹No SAE NO. 2 clutch housing on 13- and 18-speed models or automated 10-speed models rated 1450 lbs.-ft. or above. Note: No cast-iron clutch housings on UltraShift® PLUS models.

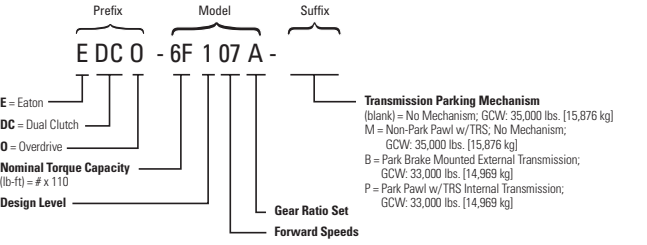
Model Series	SAE NO. 1			SAE NO. 2		
	Housing Type	Aluminum [kg]	Iron [kg]	Housing Type	Aluminum [kg]	Iron [kg]
All other FA-Series Manual, RT and FR-Series, except for FR with internal oil cooler	Standard	Integral²	--	--	--	Multi-Piece³
	Nodal	Multi-Piece³	--	--	--	--
	Nodal Forced Lube	Multi-Piece³	--	--	--	--
	Standard Forced Lube	Integral²	--	--	--	--

²Integral Hydraulic Clutch Release System:  
- Clutch housing weight is 27 lbs. [12.24 kg] (without Clutch Release Components)  
- Clutch housing weight is 34 lbs. [15.42 kg] (with Clutch Release Components)  
- UltraShift® PLUS clutch weight is 150 lbs. [68 kg]. Electronic Clutch Actuator (ECA) is 16 lbs. [7.3 kg]  
- AutoShift clutch weight is 150 lbs. [68 kg]  
³Multi-Piece Hydraulic Clutch Release Design:  
- Aluminum clutch housing weight is 21 lbs. [9.52 kg] (without Clutch Release Components)  
- Aluminum clutch housing weight is 38 lbs. [17.23 kg] (with Clutch Release Components)  
- Cast-iron clutch housing weight is 68 lbs. [30.8 kg] (without Clutch Release Components)

### Fuller Advantage® Series Automated Nomenclature



### Procision® Nomenclature







# GearLogic™ Technology

A suite of intelligent technology features for automated transmissions that improve performance, fuel efficiency and driver confidence. Learn about these impressive features and discover what they can do for you.

Feature	Definition
Hill Start Aid	Prevents unintended roll back or roll forward. When the grade exceeds the programmed threshold, foundation brakes hold the truck for a controlled launch. It works when pointing uphill in Drive or facing downhill in Reverse.
Auto Neutral	Automatically switches the transmission into Neutral once the parking brake is engaged to prevent potential movement. Safety features like these not only reduce accidents, they can also help meet the latest CSA regulations.
Engine Overspeed Protection	The transmission system upshifts if necessary to prevent engine overspeed in Drive, Manual and Low modes.
Enhanced Engine Braking	Downshifts the transmission to help slow the truck on long, steep descents and increases brake pad life.
Load-Based Shifting	Selects appropriate starting gear and makes shift decisions based on grade, vehicle weight, engine torque and throttle position.
Urge to Move	Drivers simply release the brake pedal to automatically inch forward, similar to the feel of a passenger car.
Blended Pedal	Drivers can use the throttle to feather the clutch for seamless low-speed control.
Creep Mode	Enables drivers to “creep” at low speeds and offers ultimate control for curbing, spreading and paving.
Neutral Coast	Fuel-saving feature that disengages the driveline on slight downhill grades.
Smart Gear Selection	The appropriate starting gear is selected and makes shift decisions based on grade, vehicle weight, engine torque and throttle position — skip shifting when appropriate, making the most efficient shift changes based on those conditions.
Predictive Shifting	Uses look-ahead technology to execute shift decisions that improve fuel economy and driver comfort.



# IntelliConnect™ Remote Diagnostics

Stay connected to your fleet like never before with IntelliConnect by Eaton, a suite of connected solutions designed to increase vehicle uptime by reducing unplanned downtime through faster repair diagnosis.

- Near real-time monitoring of vehicle fault codes
- Customized delivery of information through email alerts, the Navistar OnCommand™ Connection portal, an existing telematics portal or through our IntelliConnect portal
- Included with Eaton Cummins automated and automatic transmissions

## No unnecessary downtime



It’s just one more way Eaton is working to lower your operating costs and make your business run more smoothly. Visit [www.eaton.com/intelliconnect](http://www.eaton.com/intelliconnect) to learn more.





# More choices to give you more time on the road.

Priorities. When you're on the road, there are a lot of them. Fuel economy, comfort, performance. It's hard to decide what should come first. Luckily, you don't have to decide. Our portfolio is as diverse as your fleet, with choices that give you the power to equip your trucks with transmissions and clutches that sacrifice nothing. Whether you want the best in manual transmissions for your most experienced drivers or the newest automated options to standardize fuel economy across the board and reduce driver stress, we've got you covered like no one else.

## Linehaul Transmission Product Comparison

Use this table to quickly identify which product best suits your needs.

Transmission	Endurant	Fuller Advantage	Fuller Advantage	FR-10C	FR-10B
Type	Automated	Automated	Manual	Manual	Manual
# of speeds	12 (11 for B Ratio)	10	10	10	10
Small-Step (S-Ratio)	--	✓	--	--	--
Direct Drive (B-Ratio)	✓	✓	✓	--	✓
Overdrive (C-Ratio)	✓	✓	✓	✓	--
Max. Torque (lbs.-Ft. [Nm])	1850 [2508]	1850 [2508]	1850 [2508]	1850 [2508]	1550 [2101]
Max. GCW (lbs. [kg])	110,000 [49,895]	110,000 [49,895]	110,000 [49,895]	110,000 [49,895]	110,000 [49,895]
Oil Capacity (pints [liters])	16 [7.57]	16 [7.57]	16 [7.57]	23.5 [11.12]	23.5 [11.12]
Lubrication Interval (miles [km])	750,000 [1,207,008]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]
Precision Lubrication	✓	✓	✓	--	--
Oil-Level Sight Glass	✓	✓	✓	--	--
Skip Shift	✓	✓	--	--	--
GearLogic™ technology	✓	✓	--	--	--





# Endurant™ Automated Transmission

The all-new Endurant automated transmission has been intelligently engineered from the ground up with features that protect your investment and make it easy to maintain. Endurant is the lightest heavy-duty transmission and includes breakthrough innovations such as a transmission fluid pressure sensor and clutch life prognostics. Designed specifically for today’s linehaul trucks, it delivers industry-leading downspeeding and maintenance intervals, all while hauling up to 110,000 pounds Gross Vehicle Weight.

Even the product name speaks to this transmission’s ability to endure the rigors of day-to-day, heavy-duty linehaul driving. And to ensure we met the reliability requirements, we put Endurant through an extensive, component and complete vehicle testing program in a variety of conditions across the country, including the high-heat conditions of Death Valley and minus 40-degree temperatures in northern Minnesota. This grueling testing regimen resulted in more than 2 million equivalent field test miles.

Extensive benchmarking helped our engineers define what was needed to make the best automated transmission. To confirm we hit the mark, we asked fleets what key characteristics and features that they demand from their heavy-duty driving experience.

The result? A game-changing transmission.



## Endurant Applications

Model Family	Max GCW (lbs)	Linehaul	Heavy Haul	Severe Duty						Construction	Bus & Coach		
				Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway		School Bus	Transit Coach	Recreational
Endurant Automated (Overdrive) C-Ratio	110,000 [49,895]	✓	--	--	--	--	--	--	--	--	--	--	✓
Endurant Automated (Direct Drive) B-Ratio	80,000 [36,287]	✓	--	--	--	--	--	--	--	--	--	--	--

## Endurant Models

Endurant Models	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Oil Cap. Pints [liters]	Length Inches [mm] <sup>2</sup>	Weight Lbs. (kg) <sup>3</sup>	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
EEO–14F112C	1450 [1966]	2560	N/A	16 [7.57]	37.9 [963.7]	657 [298]	137%	385
EEO–15F112C	1550 [2101]							
EEO–16F112C	1650 [2237]							
EEO–17F112C	1750 [2373]							
EEO–18F112C	1850 [2508]							
EE–17F111B	1750 [2373]							

<sup>1</sup>Standard install length. <sup>2</sup>Dry weight including clutch.

## Endurant Gear Ratios

Model	Reverse		Overall Ratio	Forward Gears											
	R2	R1		1	2	3	4	5	6	7	8	9	10	11	12
EEO–14F112C	12.95	16.92	18.85	14.43	11.05	8.44	6.46	4.95	3.79	2.91	2.23	1.7	1.3	1	0.77
EEO–15F112C															
EEO–16F112C															
EEO–17F112C															
EEO–18F112C															
EE–17F111B	12.95	16.92	14.43	14.43	11.05	8.44	6.46	4.95	3.79	2.91	2.23	1.7	1.3	1	--
			% Step	31	31	31	31	31	30	31	31	31	30	31	--
EE–17F111B	12.95	16.92	14.43	14.43	11.05	8.44	6.46	4.95	3.79	2.91	2.23	1.7	1.3	1	--
			% Step	31	31	31	31	31	30	31	31	31	30	--	--



# Get to Know Endurant

Linehaul fleets have many priorities, but fuel efficiency, reliability, cost of ownership and safety are near the top of everyone's list. Let's take a look at how Endurant addresses these needs.



## Intelligently Engineered

Endurant was designed, engineered and created from a clean sheet to be an automated transmission...not simply an update to an AMT. This allowed us to optimize the transmission's weight, dimensions and features. It's the lightest heavy-duty automated transmission, yet capable of handling 1,850 lb.-ft. of torque. Drivers will appreciate the smooth and intuitive shift strategies and low-speed maneuverability. Integrated communication between the engine and transmission allows predictive shifting and Eaton GearLogic™ features to improve efficiency and performance.



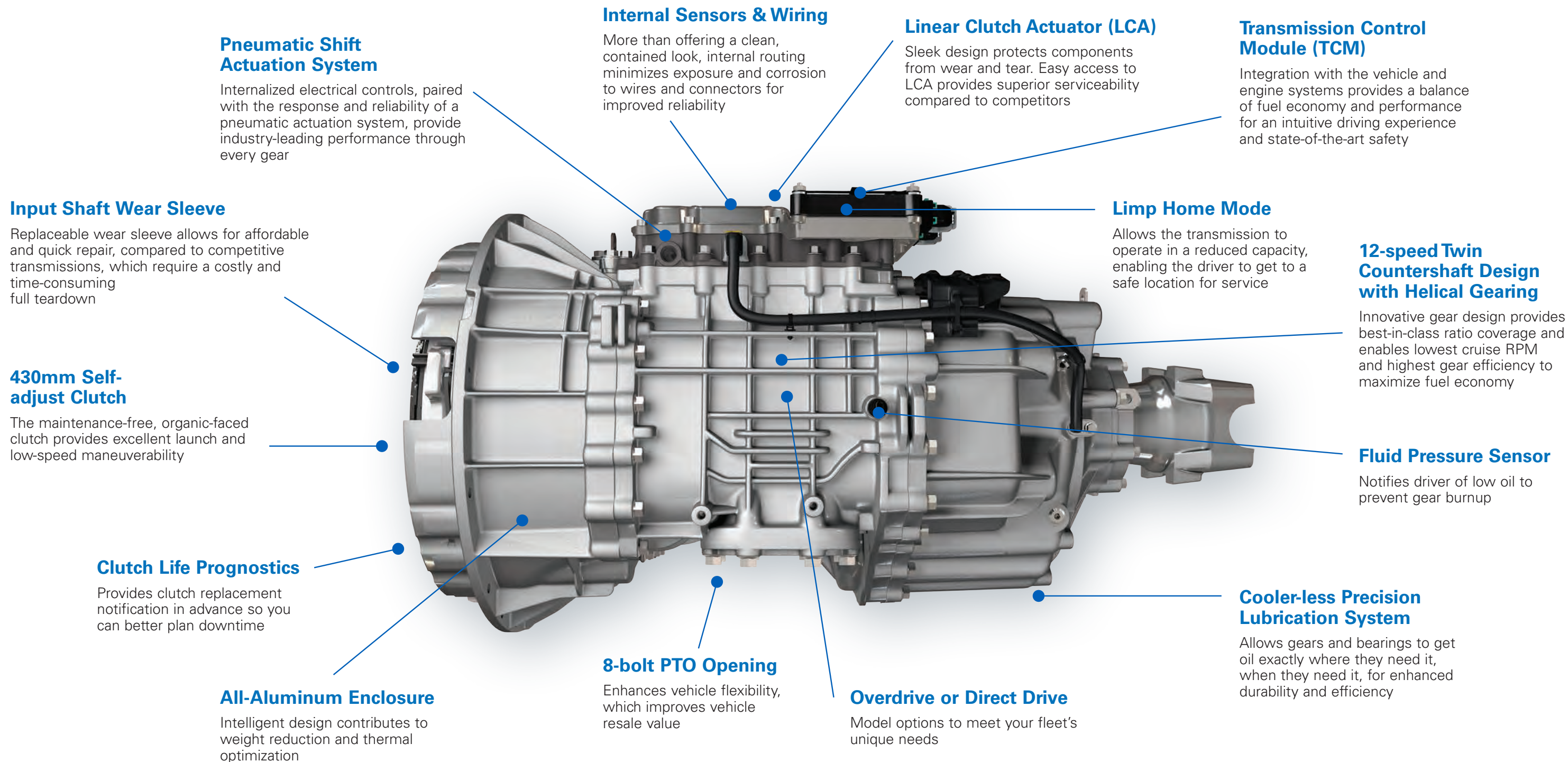
## Protects Your Investment

With Endurant, you know it's going to last. But to make it last longer, we've developed several smart features like a transmission fluid pressure sensor. It notifies you of a developing problem and safeguards your truck—before it's too late. Our 430mm, self-adjust clutch is maintenance-free, which means it requires no adjustments or grease. And when it's time to replace it, we give you a heads-up by using prognostics so you can better plan your downtime.



## Easy to Maintain

Getting the most out of your transmission between maintenance intervals means Endurant needs to last longer. So, how about an oil life of 750,000 miles? That's 250,000 miles more than the competition. All while using half as much lubricant as competitive automated transmissions.

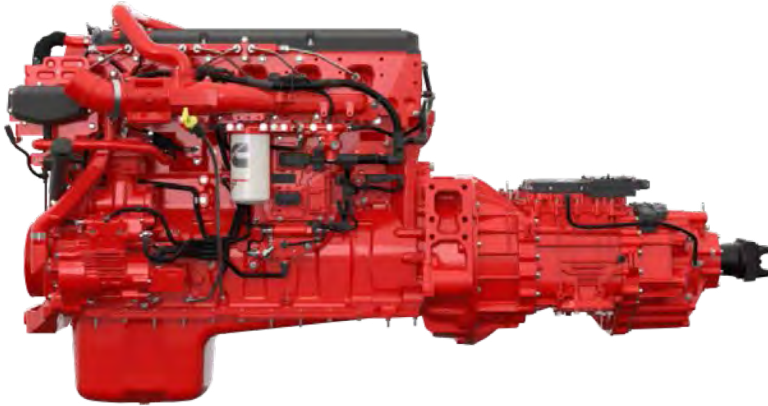




# Cummins Powertrain

The Cummins powertrain is the integrated solution that combines the efficiency of the Cummins X15 with the all-new Endurant 12-speed automated transmission.

The X15 delivers the lowest cost of ownership of any engine in its class, without compromising performance or reliability. The Endurant transmission is the lightest heavy-duty automated transmission and delivers industry-leading downspeeding and maintenance intervals. That’s a winning combination!



## Cummins Powertrain Models

Engine Transmission	Lbs.-Ft. Max. TQ¹ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Oil Cap. Pints [liter]	Length Inches [mm]	Weight² Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
Cummins X15 450 EEO–16F112C	1650 lbs.-ft.	N/A	N/A	16 [7.57]	37.9 [963.7]	657 [298]	137	385
Cummins X15 450 EEO–17F112C	1750 lbs.-ft.							
Cummins X15 500 EEO–18F112C	1850 lbs.-ft.							
Cummins X15 450 EE–17F111B	1750 lbs.-ft.							

Note: Listed above are typical X15 Endurant combinations - other pairings are available. ¹Standard install length. ²Dry weight including clutch.

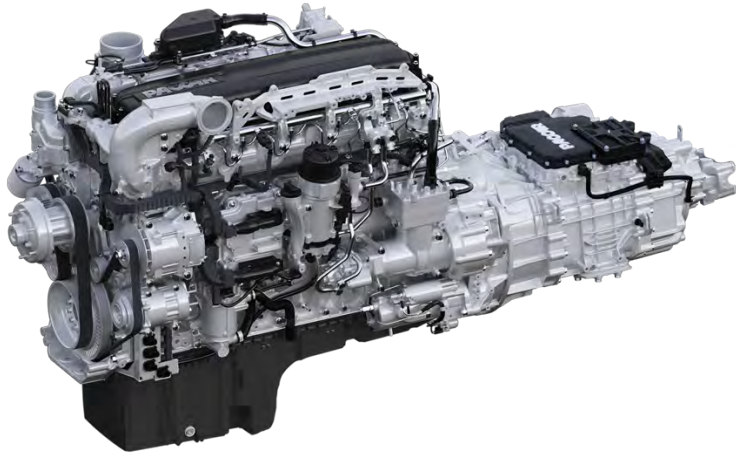
## Cummins Powertrain Gear Ratios

Model	Reverse		Overall Ratio	Forward Gears											
	R2	R1		1	2	3	4	5	6	7	8	9	10	11	12
EEO–14F112C	12.95	16.92	18.85	14.43	11.05	8.44	6.46	4.95	3.79	2.91	2.23	1.7	1.3	1	0.77
EEO–15F112C															
EEO–16F112C															
EEO–17F112C															
EEO–18F112C			% Step	31	31	31	31	31	30	31	31	31	30	31	--
EE–17F111B	12.95	16.92	14.43	14.43	11.05	8.44	6.46	4.95	3.79	2.91	2.23	1.7	1.3	1	--
			% Step	31	31	31	31	31	30	31	31	31	30	--	--

# PACCAR Powertrain

PACCAR and Eaton Cummins have collaborated to create a fully integrated powertrain that delivers superior performance and efficiency. The PACCAR MX-13 engine and PACCAR automated transmission share critical data, including engine torque and operating gear. Precise engine and transmission communications are combined with proprietary control logic to further enhance downspeeding which maximizes fuel economy. This powertrain simplifies operation for both new and experienced drivers with smooth, automated shifting that makes driving easier.

For more information, visit [www.paccarpowertrain.com](http://www.paccarpowertrain.com).



## PACCAR Powertrain Models

Engine Transmission	Lbs.-Ft. Max. TQ¹ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Oil Cap. Pints [liter]	Length Inches [mm]	Weight² Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
PACCAR MX-13 405 PO–14F112C	1450 lbs.-ft.	N/A	N/A	16 [7.57]	37.9 [963.7]	657 [298]	137	385
PACCAR MX-13 430 PO–15F112C	1550 lbs.-ft.							
PACCAR MX-13 455 PO–16F112C	1650 lbs.-ft.							
PACCAR MX-13 455 PO–17F112C	1750 lbs.-ft.							
PACCAR MX-13 500 PO–18F112C	1850 lbs.-ft.							

¹Standard install length. ²Dry weight including clutch.

## PACCAR Powertrain Gear Ratios

Model	Reverse		Overall Ratio	Forward Gears											
	R2	R1		1	2	3	4	5	6	7	8	9	10	11	12
PO–14F112C	12.95	16.92	18.85	14.43	11.05	8.44	6.46	4.95	3.79	2.91	2.23	1.7	1.3	1	0.77
PO–15F112C															
PO–16F112C															
PO–17F112C															
PO–18F112C				% Step	31	31	31	31	31	31	31	31	30	31	--



# Fuller Advantage® Automated

The Fuller Advantage series automated 10-speed transmission is the newest in automation and is built on the industry’s most iconic transmission. Fuller Advantage automated is available in direct-drive and overdrive ratios in some of the most fuel-efficient powertrains on the linehaul market. Here’s a closer look:

- Electronic Clutch Actuator provides faster shifting, smoother engagement and improved low-speed maneuverability
- GearLogic technology provides the ultimate in control and fuel economy
- Customizable software can tailor features and performance to your specific needs

Linehaul fleets search for ways to improve efficiency. Neutral Coast Mode helps to boost fuel economy by up to 1%. Here's how it works:



- Fuel-saving feature that disengages the drive line on slight downhill grades
- Drops engine speed to idle
- Improves fuel consumption by up to 1%
- Ensures safe operation regardless of driving conditions

## Fuller Advantage Series Automated Applications

Model Family	Forward Speed	Max. GCW Lbs. [kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
						Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway			School Bus	Transit Coach	Recreational
Fuller Advantage Series Automated (FASA) S-Ratio	10	80,000 [36,287]	A	✓	--	--	--	--	--	--	--	--	--	--	--	--
Fuller Advantage Series Automated (FASA) C-Ratio	10	110,000 [49,895]	A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	✓
Fuller Advantage Series Automated (FASA) B-Ratio	10	110,000 [49,895]	A	✓	--	--	--	--	--	--	--	--	✓	--	✓	✓



## Fuller Advantage Series Automated Models

Fuller Advantage Series Model	Transmission	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Oil Cap. Pints [liters]	Length <sup>1</sup> Inches [mm]	Weight <sup>2</sup> Lbs. (kg)	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
FASA 10B/C	FAO-14810C-EA3	1450 [1966]	2542	A	16 [7.57]	31.8 [807.7]	850 [385]	79%	500
	FAO-16810C-EA3	1650 [2237]							
	FAOM-15810C-EA3 <sup>3</sup>	1550 [2102]							
	FAOM-16810C-EA3 <sup>3</sup>	1650 [2237]						70%	
	FAM-14810B-EA3 <sup>3</sup>	1450 [1966]							
	FAM-15810B-EA3 <sup>3</sup>	1550 [2102]							

A = Available option. <sup>1</sup>Standard install length. <sup>2</sup>Dry weight including clutch. <sup>3</sup>+200 lbs.-ft. [271 Nm] in top two gears.

## Fuller Advantage Series Automated Gear Ratios

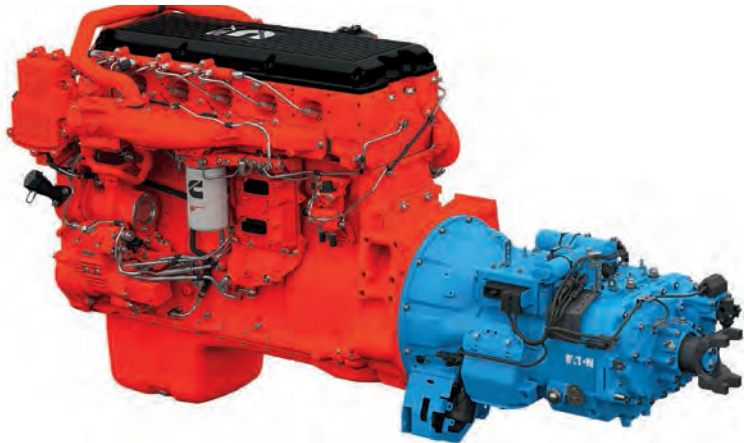
Fuller Advantage Series Models	Reverse		Overall Ratio	Forward Gears									
Model	R2	R1		1	2	3	4	5	6	7	8	9	10
FAO-14810C-EA3	2.78	13.63	17.53	12.80	9.25	6.76	4.90	3.58	2.61	1.89	1.38	1.00	0.73
FAO-16810C-EA3													
FAOM-15810C-EA3													
FAOM-16810C-EA3	3.89	18.18	% Step	38	37	38	37	37	38	37	38	37	--
FAM-14810B-EA3			15.42	15.42	11.52	8.55	6.28	4.67	3.30	2.46	1.83	1.34	1.00
FAM-15810B-EA3			% Step	34	35	36	34	42	34	34	37	34	--



# SmartAdvantage™ Powertrain

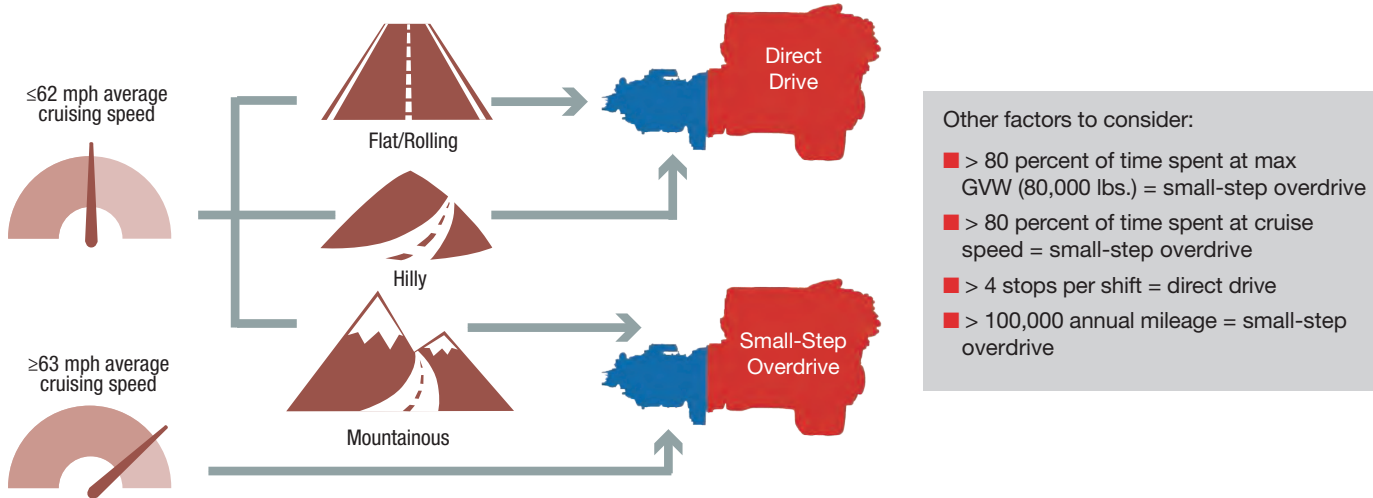
The SmartAdvantage Powertrain uses the proven Cummins X15™ engine and the Fuller Advantage® 10-speed transmission from Eaton Cummins Automated Transmission Technologies. The fully integrated electronic control of the engine and transmission allow the pair to share critical data, determining the torque required to deliver the power level that drivers demand. The SmartAdvantage Powertrain also optimizes shifting based on grade, vehicle weight, engine torque and throttle position. The result is error-free, guess-proof shifting, making every driver in your fleet as efficient as your best driver.

For more information, visit [www.smartadvantagepowertrain.com](http://www.smartadvantagepowertrain.com).



Transmission Top Gear	Cummins Engine	Power HP [kw]	Peak Torque Lbs.-Ft. [Nm] @ RPM	Transmission
Small-Step Overdrive	X15 400 SA	400 [298]	1450/1650 [1966/2237] @ 1000	FAOM-14810S-EC3
	X15 400 SA	400 [298]	1550/1750 [2103/2373] @ 1000	FAOM-15810S-EC3
	X15 420 SA	420 [313]		
	X15 450 SA	450 [336]		
	X15 400 SA	400 [298]	1550/1850 [2101/2508] @ 1000	FAOM-18910S-EC3
	X15 450 SA	450 [336]		
Direct Drive	X15 400 SA	400 [298]	1550/1750 [2101/2373] @ 1000	FAM-15810B-EA3
	X15 450 SA	450 [336]		

Use this quick reference guide to determine which SmartAdvantage Powertrain is right for you.



## Cummins and Eaton SmartAdvantage Powertrain Models

Fuller Advantage Series Model	Engine Transmission	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	Oil Capacity Pints [liters]	Length <sup>1</sup> Inches [mm]	Weight <sup>2</sup> Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
FASA 10S	Cummins ISX12/FAOM-13810S-EC3 <sup>3</sup>	1350 [1830] -- 1650 [2237]	2526	A	N/A	16 [7.57]	31.8 [807.7]	850 [385]	79%	500
	Cummins X15/FAOM-14810S-EC3 <sup>4</sup>	1450 [1966] -- 1650 [2237]								
	Cummins X15/FAOM-15810S-EC3 <sup>4</sup>	1550 [2102] -- 1750 [2373]								
	Cummins X15/FAOM-18910S-EC3 <sup>5</sup>	1550 [2101] -- 1850 [2508]								

<sup>1</sup>Standard install length. <sup>2</sup>Dry weight including clutch. <sup>3</sup>300 lbs.-ft. [407 Nm] in top two gears. <sup>4</sup>+200 lbs.-ft. [271 Nm] in top two gears. <sup>5</sup>+200 lbs.-ft. [271 Nm] in top three gears.

## Cummins and Eaton SmartAdvantage Powertrain Gear Ratios

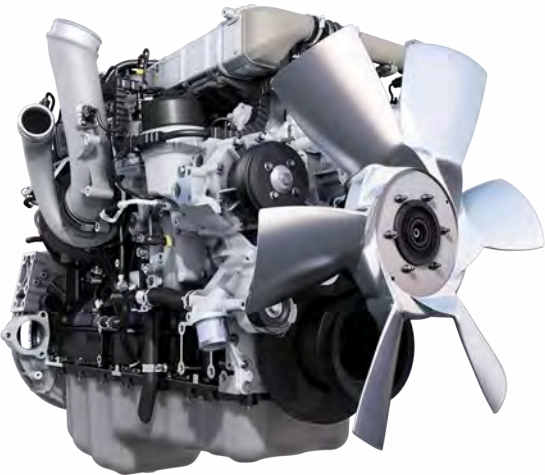
	Reverse		Overall Ratio	Forward Gears									
	R2	R1		1	2	3	4	5	6	7	8	9	10
Small-Step Overdrive	3.43	17.12	17.70	14.11	10.12	7.06	4.98	3.97	2.83	2.03	1.42	1.00	.796
			% Step	39	43	42	26	40	39	43	42	26	--
Direct Drive	3.89	18.18	15.42	15.42	11.52	8.55	6.28	4.67	3.30	2.46	1.83	1.34	1.00
			% Step	34	35	36	34	42	34	34	37	34	--





# International Integrated Powertrain

The International A26 engine and Fuller Advantage series automated powertrain, available in LT linehaul and regional haul tractors, is built for your individual needs. Optimized engine and transmission communications, intelligent shifting and downspeeding allow the engine to operate at lower revolutions per minute (RPM) and use less fuel without sacrificing performance.



Navistar and Eaton Integrated Powertrain Models

Fuller Advantage Series Model	Engine Transmission	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	Oil Cap. Pints [liters]	Length <sup>1</sup> Inches [mm]	Weight <sup>2</sup> Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
FASA 10S	International A26 400 FAOM-15810S-EN3 <sup>3</sup>	1550 [2102] – 1700 [2305]	2536	A	N/A	16 [7.57]	31.8 [807.7]	850 [385]	79%	500
	International A26 450 FAOM-18910S-EN34	1550 [2101] – 1850 [2508]								

A = Available option. <sup>1</sup>Standard install length. <sup>2</sup>Dry weight including clutch. <sup>3</sup>+200 lbs.-ft. [271 Nm] in top two gears. <sup>4</sup>+200 lbs.-ft. [271 Nm] in top three gears.

Navistar and Eaton Integrated Powertrain Gear Ratios

Fuller Advantage Series Models	Engine	Reverse	Overall Ratio	Forward Gears										
FAOM-15810S-EN3	International A26 450	R2	R1		1	2	3	4	5	6	7	8	9	10
		3.43	17.12	17.70	14.11	10.12	7.06	4.98	3.97	2.83	2.03	1.42	1.00	0.796
				% Step	39	43	42	26	40	39	43	42	26	--





# Fuller Advantage® Manual

Eaton’s Fuller Advantage series 10-speed transmission is the most efficient heavy-duty manual transmission available. Available in direct-drive and overdrive models, it’s lighter, more efficient and has better ratio coverage than FR Series manuals. That’s why you’ll find it as standard position at several truck OEMs.

- Precision Lubrication technology reduces oil-churning losses
- Oil-level sight glass decreases preventative maintenance time
- Aluminum components include range cylinder, rear plate, shift tower and shift bar housing
- Low-, mid- and high-shift towers available
- Standard 8- and 6-bolt PTO openings
- Two-bolt output yoke/flange retainer improves seal life
- Improved shift feel



Fuller Advantage Series Manual Applications

Model Family	Forward Speed	Max. GCW Lbs.[kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
						Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway			School Bus	Transit Coach	Recreational
Fuller Advantage Series Manual (FASM)	10	110,000 [49,895]	M	✓	--	--	--	--	--	--	--	--	✓	--	--	--

Fuller Advantage Series Manual Models

Fuller Advantage Series Models	Lbs.-Ft. Max. TQ¹ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	Oil Cap. Pints [liter]	Length Inches [mm]	Weight² Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
FA(F) -14810B	1450 [1966]	0303	R	A	16 [7.57]	29.9 [760.22]	541 [245]	70%	500
FA(F) -15810B	1550 [2102]								
FAM(F) -15810B³	1550 [2102]								
FAO(F) -14810C	1450 [1966]							79%	
FAO(F) -15810C	1550 [2102]								
FAO(F) -16810C	1650 [2237]								
FAOM(F) -15810C³	1550 [2102]								
FAOM(F) -16810C³	1650 [2237]								

R = Required option. ¹Max power rating is 505 HP. ²Less clutch housing, lubricant and end yoke. ³This transmission can be rated at an additional 200 lbs.-ft. [271 Nm] above the stated limit in the top two gears only. A = Available option.

Fuller Advantage Series Manual Gear Ratios

Fuller Advantage Series Models	Reverse		Overall Ratio	Forward Gears									
	R2	R1		1	2	3	4	5	6	7	8	9	10
FA(F) -14810B	3.89	18.18	15.42	15.42	11.52	8.55	6.28	4.67	3.30	2.46	1.83	1.34	1.00
FA(F) -15810B			% Step	34	35	36	34	42	34	34	37	34	--
FAM(F) -15810B													
FAO(F) -14810C	2.78	13.63	17.53	12.8	9.25	6.76	4.9	3.58	2.61	1.89	1.38	1.00	0.73
FAO(F) -15810C													
FAO(F) -16810C			% Step	38	37	38	34	37	38	37	38	37	--
FAOM(F) -15810C													
FAOM(F) -16810C													





# FR-10

Known for its reliability, the Eaton FR series is one of the most popular transmissions on the road. Available in direct-drive and overdrive models, this 10-speed manual transmission can handle both on-highway and vocational applications.

- Large-diameter mainshaft and washer design protect against driver abuse
- Patented SynchroSaver™ feature protects against range synchronizer damage caused by improper operation
- Integrated air module improves reliability by eliminating separate components and external air hoses
- Exclusive output seal design improves seal life and eliminates potential for seal damage during yoke removal
- Enhanced PTO options, with relocated side opening and option for two thru-shaft PTOs



## FR Series Applications

Model Family	Forward Speed	Max. GCW Lbs. [kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
						Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway			School Bus	Transit Coach	Recreational
FR-10	10	110,000 [49,895]	M	✓	--	--	--	--	✓	✓	✓	✓	✓	--	--	✓

## FR Series Models

10-Speed Models	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	Internal Oil Cooler	External Oil-to-Water Cooler <sup>1</sup>	External Oil Filter <sup>1</sup>	Oil Capacity Pints [liters]	Length Inches [mm]	Weight <sup>2</sup> Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)															
FR-9210B <sup>3</sup>	950 [1288]	0261	A	A <sup>4</sup>	A	A	A	23.5 [11]	29.93 [760.2]	592 [269]	65%	500															
FR-14210B <sup>3</sup>	1450 [1966]		R																								
FR-15210B <sup>3</sup>	1550 [2102]																										
FRM-15210B <sup>5</sup>	1550 [2102]																										
FRW-15210B <sup>6</sup>	1550 [2102]		--		--	--	--				84%																
FRO-14210C <sup>3</sup>	1450 [1966]		A		A	A	A																				
FRO-15210C <sup>3</sup>	1550 [2102]		R																								
FRO-16210C <sup>3</sup>	1650 [2237]																										
FRO-17210C <sup>3</sup>	1750 [2373]																										
FRO-18210C	1850 [2508]																										

A = Available Option R = Required Option <sup>1</sup>Oil pump required. <sup>2</sup> Less clutch housing, lubricant and end yoke. <sup>3</sup>This transmission can be rated at an additional 100 lbs.-ft. [136 Nm] torque above the stated limit in the top two gears only. <sup>4</sup>Two Thru-shaft PTO provisions available. <sup>5</sup>This transmission can be rated at an additional 200 lbs.-ft. [271 Nm] torque above the stated limit in the top two gears only. <sup>6</sup>FRW-Fuller Roadranger Twin-Countershaft without Cooler.

## FR Series Gear Ratios

10-Speed Models	Reverse		Overall Ratio	Forward Gears										
	L	H		1	2	3	4	5	6	7	8	9	10	
FR-9210B	16.21	3.63	14.80	14.80	10.95	8.09	5.97	4.46	3.32	2.45	1.81	1.34	1.00	
FR-14210B														
FR-15210B			% Step	35	35	35	34	35	35	35	35	34	--	
FRM-15210B														
FRW-15210B														
FRO-14210C	13.75	2.80	17.15	12.69	9.29	6.75	4.90	3.62	2.59	1.90	1.38	1.00	0.74	
FRO-15210C			% Step	37	38	38	35	40	37	38	38	35		
FRO-16210C													0.74	
FRO-17210C														17.49
FRO-18210C			% Step	39	38	38	35	37	39	38	38	35		



# Heavy-duty capability for heavy-duty loads.

Our rugged manual transmissions have been the industry standard for decades. Our UltraShift® PLUS automated transmissions have Automatic, Manual and Low modes to provide drivers with complete vehicle control, no matter the weight or road surface. So if you're looking for superior ratio coverage, higher torque capability and superior fuel economy, look no further.



## Performance Transmission Product Comparison

Use this table to quickly identify which product best suits your needs.

	UltraShift PLUS MHP	UltraShift PLUS LSE	UltraShift PLUS MXP	UltraShift PLUS VXP	RT-13	RT-18
Type	Automated	Automated	Automated	Automated	Manual	Manual
# of Speeds	13	16	18	18	13	18
Max. Torque (Lbs.-Ft. [Nm])	2050 [2779]	1750 [2373]	2250 [3051]	2250 [3051]	2250 [3051]	2250 [3051]
Max. GCW (Lbs. [kg])	140,000 [63,503]	110,000 [49,895]	Unlimited	Unlimited	Unlimited	Unlimited
Oil Capacity (Pints [Liters])	28 [13.2]	28 [13.2]	28 [13.2]	28 [13.2]	28 [13.2]	28 [13.2]
Lubrication Interval (miles [km])	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]
Precision Lubrication	--	--	--	--	--	--
Oil-Level Sight Glass	✓	✓	✓	✓	--	--
Skip Shift	✓	✓	✓	✓	--	--
GearLogic™ Technology	✓	✓	✓	✓	--	--

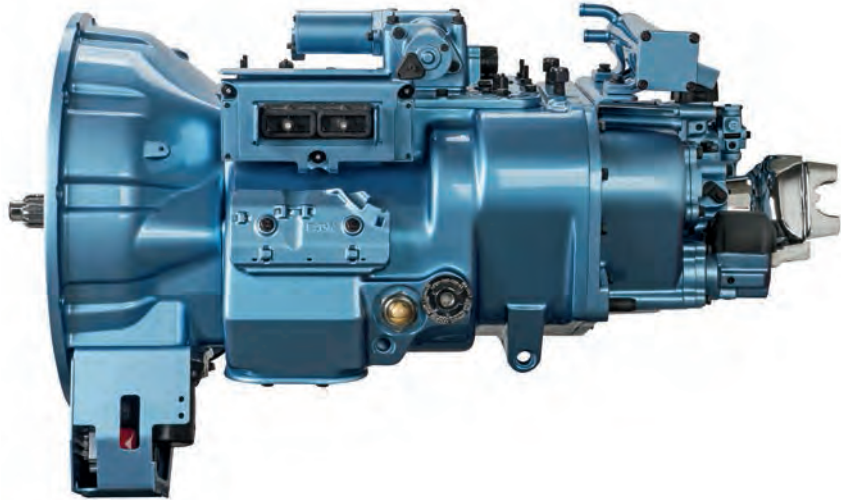




# UltraShift® PLUS MHP/MXP/VXP

The UltraShift *PLUS* MHP, MXP and VXP are the workhorses of our automated transmission lineup. Need a transmission capable of hauling 168,000 pounds on steep grades? Look no further than here. With world-class startability and ratio coverage, and built upon the robust Fuller 13- and 18-speed manuals, these transmissions are capable of handling high torque and high GVWs, making them popular in some of the most rigorous vocations you'll find — logging, oil field and other heavy-haul applications. In fact, the 18-speed UltraShift *PLUS* MXP and VXP have no gross vehicle weight limitations. Fleet managers and drivers alike will appreciate the improved safety and greater fleet-wide fuel efficiency these automated transmissions deliver compared to their manual counterparts.

- GearLogic™ technology for improved performance, fuel efficiency and driver confidence
- Compatible with two-speed axles for enhanced gear reduction to maximize on-/off-road capabilities
- Compatible with split-shaft power take-off (PTO)
  - Allows for transmission gear selection and clutch control from a panel outside of the vehicle's cab along with the remote throttle
  - Eliminates the need for operators to enter and exit the cab to change transmission gears



## UltraShift PLUS Applications

Model Family	Forward Speed	Max. GCW Lbs. [kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty	Construction					Pickup & Delivery	Bus & Coach			
							Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway	School Bus	Transit Coach	Recreational	
UltraShift PLUS MHP	13	140,000 [63,503]	A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UltraShift PLUS MXP	18	Unlimited	A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UltraShift PLUS VXP	18	Unlimited	A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## UltraShift PLUS Models

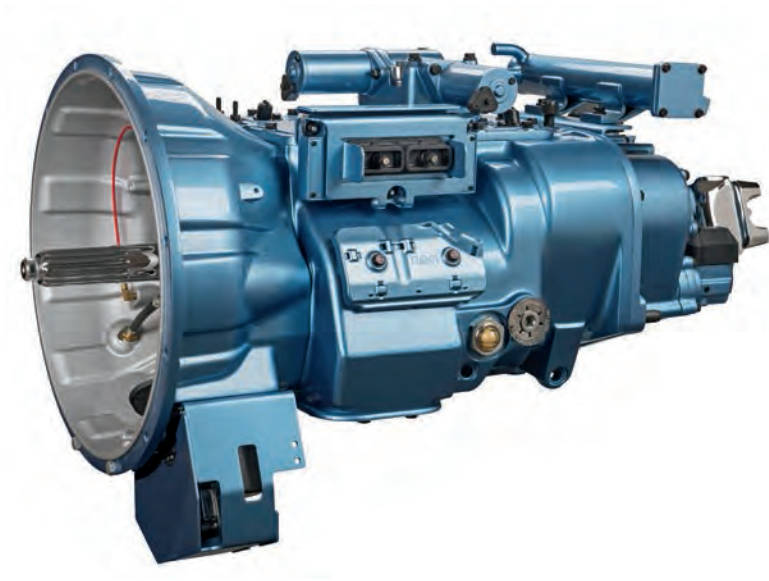
	UltraShift PLUS Models	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	External Oil-to-Water Cooler¹	External Oil Filter¹	Oil Cap. Pints [liters]	Length² Inches [mm]	Weight³ Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
MHP	FO-16E313A-MHP	1650 [2237]										
	FO-18E313A-MHP	1850 [2509]										
	FO-20E313A-MHP	2050 [2779]										
MXP	FO-18E318A-MXP	1850 [2509]	2501	R	--	A	A	28 [13]	34.98 [888.4]	978 [444]	79	500
	FO-20E318A-MXP	2050 [2779]										
	FO-16E318B-MXP	1650 [2237]										
	FO-18E318B-MXP	1850 [2509]										
	FO-20E318B-MXP	2050 [2779]										
VXP	FO-22E318B-MXP	2250 [3051]	2500									
	FO-18E318B-VXP	1850 [2509]										
	FO-20E318B-VXP	2050 [2779]										
	FO-22E318B-VXP	2250 [3051]										

R = Required option. A = Available option. ¹Oil pump required. ²Standard install length or measured from yoke end-to-end of rear bearing cover. ³Dry weight including clutch.

## UltraShift PLUS Gear Ratios

UltraShift PLUS Models	Reverse				Overall Ratio	Forward Gears																	
	R4	R3	R2	R1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MHP		4.03	12.85	15.06	16.84	12.29	8.51	6.05	4.38	3.20	2.29	1.95	1.62	1.38	1.17	1.00	0.86	0.73	--	--	--	--	--
					% Step	44	41	38	37	40	17	20	17	18	17	16	17	--	--	--	--	--	--
MXP 18A	2.99	3.50	11.17	13.09	16.70	12.19	10.40	8.51	7.26	6.05	5.16	4.38	3.74	3.20	2.73	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73
					% Step	17	22	17	20	17	18	17	17	17	20	18	20	17	18	17	16	18	--
MXP 18B	3.43	4.03	12.85	15.06	19.73	14.40	12.29	8.51	7.26	6.05	5.16	4.38	3.74	3.20	2.73	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73
					% Step	17	44	17	20	17	18	17	17	17	20	18	20	17	18	17	16	18	--
VXP	3.43	4.03	12.85	15.06	19.73	14.40	12.29	8.51	7.26	6.05	5.16	4.38	3.74	3.20	2.73	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73
					% Step	17	44	17	20	17	18	17	17	17	20	18	20	17	18	17	16	17	--





# UltraShift PLUS LSE

It knows the roads your trucks drive as well as you do. Built for Canadian applications (including LCV) with up to 110,000-pound GCW loads, the UltraShift® *PLUS* LSE has small ratio steps between all 16 gears to spend more time in the most fuel-efficient RPM band, resulting in 2%–4% better fuel economy. Gear changes are short and smooth for increased driver comfort, and are based on Eaton’s proven 13- and 18-speed platform for enhanced resale value. The 16-speed direct-drive UltraShift *PLUS* LSE is available in International, Peterbilt and Kenworth trucks behind the Cummins ISX15 and PACCAR MX-13 engines.

- GearLogic™ technology for improved performance, fuel efficiency and driver confidence

## UltraShift PLUS LSE Applications

Model Family	Forward Speed	Max. GCW Lbs. [kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty	Construction	Pickup & Delivery	Bus & Coach
						LoggingMiningOil FieldRefuseAgriculturalOff-Highway			School BusTransit CoachRecreational
UltraShift PLUS LSE	16	110,000 [49,895]	A	✓	--	--	--	--	--

## UltraShift PLUS LSE Models

	UltraShift PLUS Model	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	External Oil-to-Water Cooler¹	External Oil Filter¹	Oil Cap. Pints [liters]	Length² Inches [mm]²	Weight³ Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
LSE	F-14E316B-LSE	1450 [1966]	2527	R	--	A	A	28 [13]	34.98 [888.4]	978 [444]	79%	500
	F-15E316B-LSE	1550 [2101]										
	F-17E316B-LSE	1750 [2373]										
	FM-15E316B-LSE	1550 [2101]⁴										

R = Required option. A = Available option. ¹Oil pump required. ²Standard install length or measured from yoke end-to-end of rear bearing cover. ³Dry weight including clutch. ⁴+200 lbs.-ft. in top two gears.

## UltraShift PLUS LSE Gear Ratios

UltraShift PLUS Model	Reverse				Overall Ratio	Forward Gears																	
LSE	R4	R3	R2	R1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	--	--	12.85	15.06	14.40	14.40	12.29	8.51	7.26	6.05	5.16	4.38	3.74	3.20	2.73	2.28	1.94	1.62	1.38	1.17	1.00	--	--
					% Step	17	44	17	20	17	18	17	17	17	20	17	20	17	18	17	--	--	--





# RT-13/RT-18

With the Eaton RT-13/RT-18, drivers will experience versatility and low shift effort in these premium 13- or 18-speed transmissions. The innovative, patented design features a simple mainshaft, which is not splined to the auxiliary gear. This unique design eliminates the added mass, drag and inertia of the entire auxiliary section.

During upshifts, where both the lever and splitter button are moved together, the low-inertia mainshaft is quickly brought to synchronous, resulting in fast, easy shifts.



## RT-13/RT-18 Applications

Model Family	Forward Speed	Automated or Manual	Linehaul	Heavy Haul	Severe Duty							Construction	Pickup & Delivery	Bus & Coach		
					Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway				School Bus	Transit Coach	Recreational
RT-13	13	M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--
RT-18	18	M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--

## RT-13/RT-18 Models

Models		Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru- Shaft PTO	Internal Oil Cooler	External Oil-to-Water Cooler¹	External Oil Filter¹	Oil Cap. Pints [liters]	Length Inches [mm]	Weight² Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)	
13-Speeds	RTLO-16913A	1650 [2237]	0249	R	--	--	A	A	28 [13]	33.1 [841]	714 [324]	79%	350³	
	RTLO-18913A	1850 [2508]												
	RTLO-20913A	2050 [2779]												
18-Speeds	RTLO-16918B	1650 [2237]	0250								716 [325]			500
	RTLO-18918B	1850 [2509]												
	RTLO-20918B	2050 [2780]												
	RTLO-22918B	2250 [3051]												

R = Required option. A = Available option. <sup>1</sup>Oil pump required. <sup>2</sup>Less clutch housing, lubricant and end yoke. <sup>3</sup>Transmission can be ordered with heavy-duty input bearing (4301417) to allow 500 lbs.-ft. of combined PTO output torque.

## RT-13 Gear Ratios

13-Speed Models	Reverse		Overall Ratio	Forward Gears												
	LL	H		L	1	2	3	4	5	6	7	8	9	10	11	12
RTLO-16913A	13.22	3.50	16.86	12.31	8.64	6.11	4.43	3.23	2.29	1.95	1.62	1.38	1.17	1.00	0.86	0.73
RTLO-18913A			% Step	42	42	38	37	41	17	21	17	18	17	17	17	
RTLO-20913A	13.22	3.50	16.86	12.31	8.59	6.11	4.43	3.23	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73
			% Step	43	41	38	37	42	17	20	17	18	17	17	17	

## RT-18 Gear Ratios

18-Speed Models	Reverse		Overall Ratio	Forward Gears															
	R4	R3		R1		LL	L	1	2	3	4	5	6	7	8	9	10	11	12
RTLO-16918B	3.43	4.03	12.85	15.06	19.72	14.4	12.29	8.56	7.3	6.05	5.16	4.38	3.74	3.2	2.73	2.29	1.95	1.62	1.38
					% Step	17	44	17	21	17	18	17	17	17	19	17	20	17	18
RTLO-18918B					19.72	14.4	12.29	8.51	7.26	6.05	5.16	4.38	3.74	3.2	2.73	2.28	1.94	1.62	1.38
RTLO-20918B					0.73	1.00	0.86	0.73	--	--	--	--	--	--	--	--	--	--	--
RTLO-22918B					% Step	17	44	17	20	17	18	17	17	17	20	17	20	17	18



# Transmissions that get the job done.

There are two things we know: The job site is tough and no two are alike. That's why we feature an entire portfolio of manual and automated transmissions and clutches that can be spec'd for your fleet's unique need. All backed by the solutions, support and expertise of the Roadranger® Network. That's something you can't find anywhere else.



## Vocational Transmission Product Comparison

Use this table to quickly identify which product best suits your needs.

	Fuller Advantage	UltraShift PLUS VCS	UltraShift PLUS VMS	RT-8LL	RT-9ALL	RT-15
Type	Automated	Automated	Automated	Manual	Manual	Manual
# of Speeds	10	10	11	10	11	15
Max. Torque (Lbs.-Ft. [Nm])	1750 [2373]	1750 [2373]	1750 [2373]	1650 [2237]	1650 [2237]	1850 [2508]
Max. GCW (Lbs. [kg])	110,000 [49,895]	110,000 [49,895]	110,000 [49,895]	110,000 [49,895]	110,000 [49,895]	110,000 [49,895]
Oil Capacity (pints [liters])	16 [7.57]	28 [13.2]	28 [13.2]	28 [13.2]	28 [13.2]	28 [13.2]
Lubrication Interval (miles [km])	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]	500,000 [804,672]
Precision Lubrication	✓	--	--	--	--	--
Oil-Level Sight Glass	✓	✓	✓	--	--	--
Active Shifting	✓	✓	✓	--	--	--
Skip Shift	✓	✓	✓	--	--	--
GearLogic™ Technology	✓	✓	✓	--	--	--



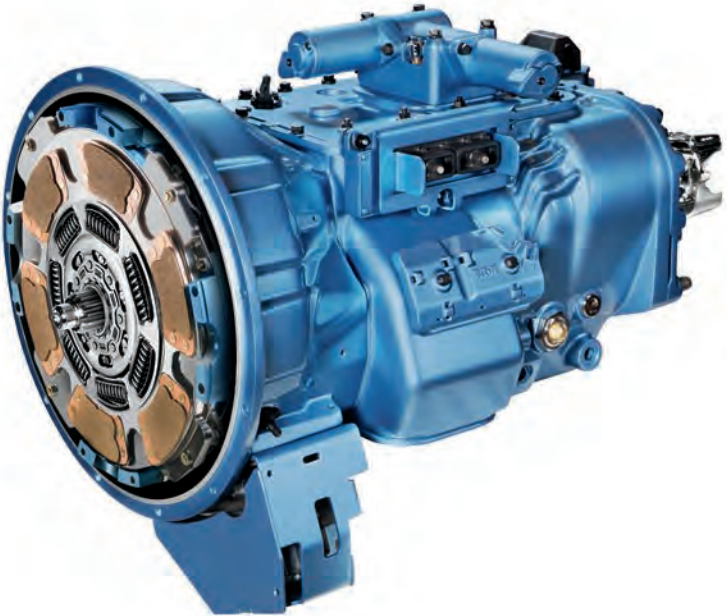


# Fuller Advantage® Series Automated

The Fuller Advantage series automated overdrive models are now approved for vocational applications. With a 110,000-pound GCW capability, 6- and 8-bolt PTO openings, and GearLogic™ technology for improved performance, fuel efficiency and driver confidence, it's perfect for dumps and municipal trucks.

Thanks to its Precision Lubrication System, it's the first cooler-less transmission in the vocational segment. Preventative maintenance is improved due to an oil-level sight glass that allows for quick routine oil checks. All totaled, the lube system uses only 16 pints of oil — nearly half the amount used in traditional transmissions.

This transmission is ideal for vocational fleets currently operating an Eaton FR series manual transmission and considering an automated transmission for their next truck.



### Fuller Advantage Series Applications

Model Family	Forward Speed	Max. GCW Lbs.[kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
						Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway			School Bus	Transit Coach	Recreational
Fuller Advantage Series Automated (FASA) C-Ratio	10	110,000 [49,895]	A	✓	--	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	✓

### Fuller Advantage Series Models

Fuller Advantage Series Model	Transmission	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	Oil Cap. Pints [liters]	Length¹ Inches [mm]	Weight² Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
FASA 10C	FAO-14810C-EA3	1450 [1966]	2542	--	Pending	16 [7.57]	31.8 [807.7]	850 [385]	79%	500
	FAO-16810C-EA3	1650 [2237]								
	FAOM-15810C-EA3³	1550 [2102]							70%	
	FAOM-16810C-EA3³	1650 [2237]								

A = Available option. ¹Standard install length. ²Dry weight including clutch. ³+200 lbs.-ft. [271 Nm] in top two gears.

### Fuller Advantage Gear Ratios

Fuller Advantage Series Model	Reverse		Overall Ratio	Forward Gears									
	R2	R1		1	2	3	4	5	6	7	8	9	10
FAO-14810C-EA3	2.78	13.63	17.53	12.80	9.25	6.76	4.90	3.58	2.61	1.89	1.38	1.00	0.73
FAO-16810C-EA3													
FAOM-15810C-EA3			% Step	38	37	38	37	36	40	37	38	37	--
FAOM-16810C-EA3													





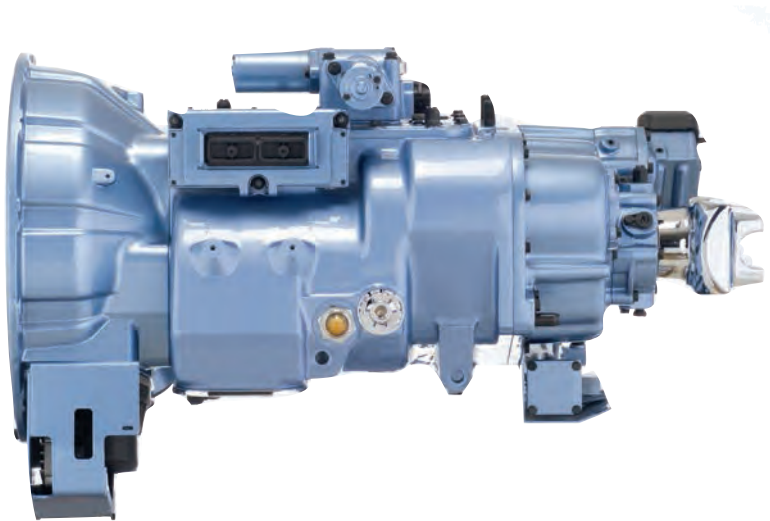
# UltraShift® PLUS VCS/VMS

Vehicle control is vital on the job site, and the UltraShift *PLUS* VCS/VMS is the ultimate choice, thanks to its low-speed maneuverability. Through extended low- and reverse-gear ratio coverage, these automated transmissions provide the lowest ground speed for curbing, creeping, spreading and paving. For highway construction and dump operations, deep reduction and fast, flexible reverse-gearing make getting in and out of tough places a breeze. And the patented shift logic and controls constantly adapt, based on changes in weight of load, grade and power, making adjustments to maximize efficiency.

With its 36:1 overall ratio, UltraShift *PLUS* VMS is a great transmission for mixer, spreader, pump and crane applications. Dumps, block trucks and other construction trucks will find UltraShift *PLUS* VCS a nice alternative to a torque converter automatic transmission.

Both have 6-, 8- and thru-shaft PTO openings.

- GearLogic™ technology for improved performance, fuel efficiency and driver confidence
- Compatible with two-speed axles for enhanced gear reduction to maximize on-/off-road capabilities
- Compatible with split-shaft power take-off (PTO)
  - Allows for transmission gear selection and clutch control from a panel outside the vehicle's cab, along with the remote throttle
  - Eliminates the need for operators to enter and exit the cab to change transmission gears



The new Aggressive Performance calibration allows for smarter shifts – boosting performance on grades and improving acceleration for superior control in tough terrain.

## UltraShift PLUS VCS/VMS Applications

Model Family	Forward Speed	Max. GCW Lbs.[kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
						Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway			School Bus	Transit Coach	Recreational
UltraShift PLUS VCS	10	110,000 [49,895]	A	✓	--	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	✓
UltraShift PLUS VMS	11	110,000 [49,895]	A	✓	--	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	✓



## UltraShift PLUS VCS/VMS Models

	UltraShift PLUS Models	Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru-Shaft PTO	External Oil-to-Water Cooler <sup>1</sup>	External Oil Filter <sup>1</sup>	Oil Cap. Pints [liters]	Length <sup>2</sup> Inches [mm]	Weight <sup>3</sup> Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
VCS	FO-10E308LL-VCS	1050 [1424]	2500	R	A	A	A	28 [13]	34.98 [888.4]	975 [442]	79%	500
	FO-11E308LL-VCS	1150 [1559]										
	FO-12E308LL-VCS	1250 [1695]										
	FO-14E308LL-VCS	1450 [1966]										
	FO-16E308LL-VCS	1650 [2237]										
	FO-17E308LL-VCS	1750 [2373]										
VMS	FO-10E309ALL-VMS	1050 [1424]	2500	R	A	A	A	28 [13]	34.98 [888.4]	975 [442]	79%	500
	FO-11E309ALL-VMS	1150 [1559]										
	FO-12E309ALL-VMS	1250 [1695]										
	FO-14E309ALL-VMS	1450 [1966]										
	FO-16E309ALL-VMS	1650 [2237]										
	FO-17E309ALL-VMS	1750 [2373]										

R = Required option. A = Available option. <sup>1</sup>Oil pump required. <sup>2</sup>Standard install length or measured from yoke end-to-end of rear bearing cover. <sup>3</sup>Dry weight including clutch.

## UltraShift PLUS VCS/VMS Gear Ratios

UltraShift PLUS Models	Reverse				Overall Ratio	Forward Gears											
	R4	R3	R2	R1		1	2	3	4	5	6	7	8	9	10	11	
VCS	--	2.89	9.85	15.22	19.68	14.56	9.42	6.24	4.63	3.40	2.53	1.83	1.36	1.00	0.74	--	
					% Step	55	51	35	36	34	38	35	36	34	--	--	
VMS	--	3.43	13.03	20.84	35.73	26.08	16.30	11.85	7.41	5.23	3.79	2.77	1.95	1.38	1.00	0.73	
					% Step	60	37	60	38	38	37	42	42	38	37	--	





## RT-8LL/RT-9ALL/RT-15

**RT-8LL** — The 8LL transmissions provide drivers with the versatility they need for a mix of on- and off-highway applications. These transmissions offer eight road speed gears and two additional deep-reduction ratios in low and reverse.

**RT-9ALL** — High-reduction transmissions for special-purpose, low-speed applications. Ideal for concrete or asphalt-spreading operations.

**RT-15** — For high-performance applications in on-highway and on/off-highway vocations. Ten road speeds plus five deep-reduction gears for versatility. Proven helical gearing in the auxiliary section for quieter operation and increased gear strength and life.



### RT Series Applications

Model Family	Forward Speed	Max. GCW Lbs.[kg]	Automated or Manual	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach												
														Logging	Mining	Oil Field	Refuse	Agricultural	Off-Highway					School Bus	Transit Coach	Recreational
RT-8LL	8+2 Low	110,000 [49,895]	M	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	--	--	--									
RT-9ALL	9+2 Low	110,000 [49,895]	M	--	--	--	--	--	✓	✓	✓	✓	✓	--	--	--	--									
RT-15	15	110,000 [49,895]	M	--	--	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--									

### RT Series Models

Models		Lbs.-Ft. Max. TQ [Nm]	Sales Sheet TRSLXXXX	Integral Oil Pump	Thru- Shaft PTO	Internal Oil Cooler	External Oil-to-Water Cooler¹	External Oil Filter¹	Oil Cap. Pints [liters]	Length Inches [mm]	Weight² Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (Lbs.-Ft.)
10-Speeds	RT-8908LL	860 [1166]	0116	--	--	--	--	--	28 [13]	33.1 [841]	690 [313]	70%	500
	RTO-14908LL	1450 [1966]		A	A³		A	A				94%	
	RTO-16908LL	1650 [2237]		R	A³		A	A					
11-Speeds	RTO-14909ALL	1450 [1966]	0253	--	--	--	--	--	28 [13]	33.15 [842]	671 [304]	79%	500
	RTO-16909ALL	1650 [2237]		R	A		A	A			698 [317]		
15-Speeds	RT-14915	1250 [1695]	0215	R	--	--	A	A		28 [13]	33.1 [841]	696 [316]	
	RTO-16915	1650 [2237]							89%				

R = Required option. A = Available option. <sup>1</sup>Oil pump required. <sup>2</sup>Less clutch housing, lubricant and end yoke. <sup>3</sup>Two Thru-shaft PTO provisions available.

### RT Series Gear Ratios

10-Speed Models	Reverse			Overall Ratio	Forward Gears									
	LL	L	H		LL	L	1	2	3	4	5	6	7	8
RT-8908LL	20.47	13.24	3.89	19.58	19.58	12.67	8.39	6.23	4.58	3.41	2.46	1.83	1.35	1.00
				% Step	55	51	35	36	34	38	35	36	34	
RTO-14908LL	15.22	9.85	2.89	19.68	14.56	9.42	6.24	4.63	3.40	2.53	1.83	1.36	1.00	0.74
RTO-16908LL				% Step	55	51	35	36	34	38	35	36	34	

11-Speed Models	Reverse			Overall Ratio	Forward Gears										
	LL	L	H		LL1	L	LL2	1	2	3	4	5	6	7	8
RTO-14909ALL	20.84	13.03	3.43	35.71	26.08	16.30	11.85	7.41	5.23	3.79	2.77	1.95	1.38	1.00	0.73
RTO-16909ALL				% Step	60	38	60	42	38	37	42	42	38	37	

15-Speed Models	Reverse			Overall Ratio	Forward Gears														
	DR	L	H		DR1	DR2	DR3	DR4	DR5	1	2	3	4	5	6	7	8	9	10
RT-14915	16.73	9.84	2.76	16.94	16.94	12.98	10.03	7.73	6.07	9.96	7.63	5.9	4.54	3.57	2.79	2.14	1.65	1.27	1.00
				% Step	31	29	30	27	39	31	29	30	27	28	30	30	30	27	--
RTO-16915	13.14	7.73	2.17	16.94	13.31	10.20	7.88	6.07	4.77	7.83	6.00	4.64	3.57	2.81	2.19	1.68	1.30	1.00	0.79
				% Step	31	29	30	27	39	31	29	30	27	28	30	30	30	27	--



## Precision. Challenge Status Quo.

In the medium duty segment, those spec'ing transmissions may think it's best to stay with the status quo. But those who choose conventional torque converter automatics may not realize how much they're giving up in total operating costs. Vehicle damage, wear and tear, and routine maintenance could be significantly reduced with the Eaton Cummins Precision. Whether it's a dent from docking too fast or problems from riding the brakes down steep hills, those hidden costs are better avoided. You haven't had a choice before but now you do.

Precision is changing the status quo for the better.





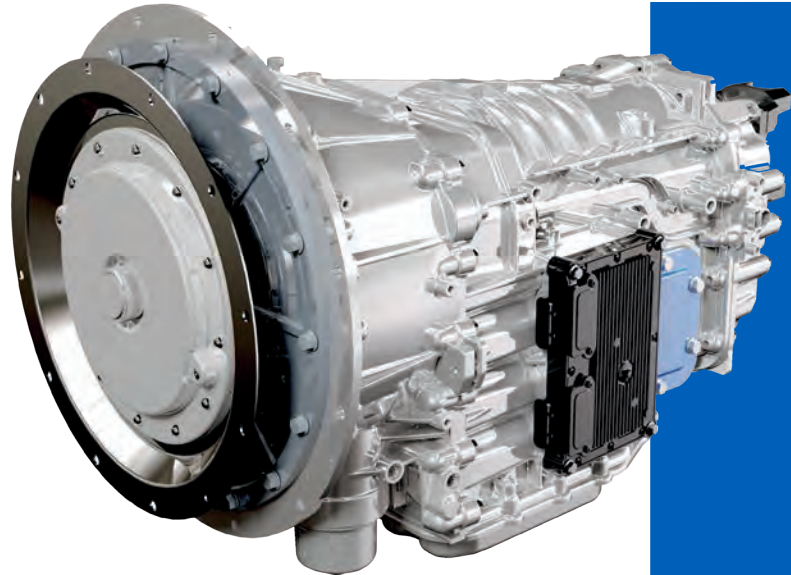


# Procision®

The Procision 7-speed dual-clutch automatic transmission boasts the latest in transmission technology.

Dual-clutch transmissions have a solid, proven history in the passenger vehicle market, which has established a precedent for evaluating and developing new technologies that are transferred into commercial vehicle markets.

The smart features in the Procision dual-clutch automatic transmission deliver more driver confidence and savings than the torque converter automatic used by many of today's medium-duty fleets. On top of that, Procision has the full support and expertise of the Roadranger® Network. That's a winning combination.



Medium-Duty Application	Procision Model EDCO-6F107A				Procision with Park Pawl Model EDCO-6F107A-P				Procision New NAME Model EDCO-6F107A-B	
	PTO not enabled		PTO enabled		PTO not enabled		PTO enabled		PTO not enabled	
	Max 260 HP and/or 33k lbs. GCW	Max 300 HP and/or 35k lbs. GCW	Max 260 HP and/or 33k lbs. GCW	Max 300 HP and/or 35k lbs. GCW	Max 260 HP and/or 29k lbs. GCW	Max 300 HP and/or 33k lbs. GCW	Max 260 HP and/or 29k lbs. GCW	Max 300 HP and/or 33k lbs. GCW	Max 260 HP and/or 33k lbs. GCW	Max 300 HP and/or 35k lbs. GCW
	Pick-up & Delivery	✓	✓	✓	✓	✓	✓	✓	--	--
	Towing	--	--	✓	✓	--	--	✓	✓	--
	School Bus	✓	✓	--	--	✓	✓	--	--	✓
City/Shuttle Bus	✓	✓	--	--	--	--	--	--	--	--

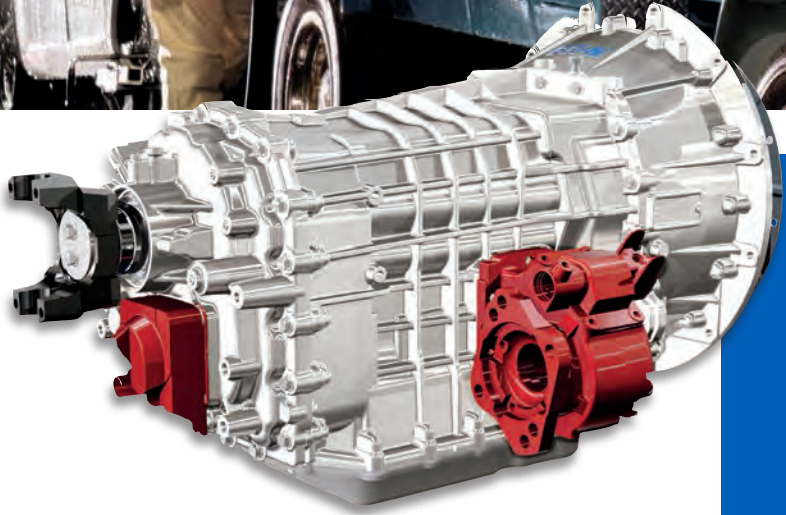
Model availability varies by OEM. Consult with your dealer or Eaton Roadranger on specifics.

## Procision 7-Speed Dual-Clutch Transmission Key Specifications and Capacities

Length	30.1 in.(765 mm)	
Weight	364 lbs.(165 kg)	
Oil Capacity	3.2 gal.(12 L)	
Operating Weights (GVW/GCW)	With Park Pawl 33,000 lbs. (14,969 kg)	Without Park Pawl 35,000 lbs. (15,875 kg)
Max.Torque	660 lbs.-ft. (895 Nm)	

## Gear Ratios

Ratio	1st	2nd	3rd	4th	5th	6th	7th	R Low	R High	Overall Ratio
	6.50	4.17	2.53	1.55	1.00	.77	.64	6.15	3.95	10.13



## Procision Proof Point

“Customers are a little reluctant to try new technology until they see it proven in other forms. We point out that dual-clutch transmissions have been in passenger cars for quite some time. It’s proven. We’re simply scaling it up and making it more durable for the commercial vehicle and bus market.”

– Jeff Carpenter, Procision Chief Engineer

### Smart

Innovative dual-clutch technology preselects the correct gear, resulting in a smooth delivery of torque.

Eaton Dynamic Shifting uses grade, load and driver demand to select optimum shift points to balance performance and fuel economy.

Three standard Power Take-Off openings can be enabled via software upgrades as a nominal purchase after initial buy, enhancing value to both first owners and the secondary market.

Easy to spec — choose from two standard models.



### Savings

8%–10% better fuel economy than a torque converter automatic.

Optimized 7-speed design, with a double-overdrive for additional fuel economy.

150,000-mile or 10-year lube and filter changes for reduced maintenance costs.



### Confidence

Urge to Move and Creep Mode control forward and reverse speeds better than a torque converter automatic and provide best-in-class low-speed maneuverability.

Hill Helper prevents rollback or roll-forward, depending on grade and weight, for a controlled launch.

Brake-pedal-actuated Tap Down Shifting gives the driver more control and increases brake pad life.

Lower engine noise creates a better operating environment.



### Peace of Mind

3-year, unlimited-mile warranty on commercial vehicles; 5-year, unlimited-mile warranty on school buses.

Extended protection plans are available: 2, 3 or 4 years for commercial vehicles; 2 years for school buses.

Service can be performed at dealership to get vehicles on the road more quickly.

Backed by the solutions, support and expertise of the Eaton Roadranger® Network.







**The Advantage Self-Adjust™ and Easy Pedal Advantage® clutches are built to last.**

Design enhancements include:

- Strap drive system provides longer life for the intermediate plate
- Elimination of open-clutch rattle
- Patent-pending spring separator for quick disengagement
- Two wear-tab indicators for improved visibility

# Eaton Clutches Offer Performance, Reliability and Protection

Eaton is a leading worldwide supplier of medium- and heavy-duty clutches to the commercial vehicle industry. Our clutches are unmatched in terms of reliability, durability and performance. We are preferred by most original equipment manufacturers and are unquestionably the best value on the market today. Our engineers employ rigorous component and vehicle testing to ensure absolute performance excellence. And our state-of-the-art precision manufacturing technology enables us to provide consistent high quality, clutch after clutch.

- 50,000-mile release bearing lube interval
- Long-life OEM-grade clutch-facing material
- New 1,850-lbs.-ft. clutch for over-the-road applications

**Advantage Self-Adjust™ Benefits**

- Self-adjusting clutch
- Eliminates 13 manual adjustments for every truck, on average
- For use on vehicles with hydraulic linkage
- 3-year/350,000-mile warranty

**Easy Pedal Advantage® Benefits**

- Manual-adjusting clutch
- Kwik-Adjust™ and proven Powerthread™ technology simplify clutch adjustment
- For use on vehicles with mechanical linkage
- 2-year/200,000-mile warranty

## Which clutch is right for my fleet?

		Clutch Linkage		
		Hydraulic	Mechanical	Unsure
Clutch Type	Self-Adjust	✓		✓
	Manual-Adjust		✓	





# Roadranger® Extended Protection Plans

Keeping your truck on the road is critical to your livelihood. Roadranger Extended Protection Plans give you **peace of mind** knowing that, despite increasing parts and labor costs or how severe the work conditions are, you can repair your truck to its original standard of quality.

Roadranger Extended Protection Plans cover the transmission, clutch and **100% of parts and labor** on all warrantable failures. For a relatively modest investment, you can rest easy knowing that Roadranger is there to support you throughout the life of your truck. You choose the protection that meets your needs.

With our Extended Protection Plans, you are never far from parts and service. For your convenience, there are more than 3,500 authorized dealers in the U.S. and Canada. Visit [www.roadranger.com/epp](http://www.roadranger.com/epp) to learn more.



## Heavy-Duty Linehaul Transmissions

Approved Models	Application	Transmission Torque	Component	Std Warranty Yr/Mi (000)	Total Coverage Years/Miles (000)					
					Option #1	Price	Option #2	Price	Option #3	Price
Endurant/Fuller Advantage Automated	On-Road Linehaul	1750 lbs.-ft and below	Transmission	5/750	6/750	\$450	7/750	\$600	7/850	\$750
		1850 lbs.-ft and above	Transmission	5/750	6/750	\$600	7/750	\$800	7/850	\$1,000
		ALL	Clutch	3/350	4/450	\$300	5/750	\$500	N/A	N/A
Fuller Advantage Manual	On-Road Linehaul	ALL	Transmission	5/750	6/750	\$200	7/750	\$350	7/850	\$450
FR-10	On-Road Linehaul	1750 lbs.-ft and below	Transmission	5/750	6/750	\$175	7/750	\$325	7/850	\$425
		1850 lbs.-ft and above	Transmission	5/750	6/750	\$200	7/750	\$350	7/850	\$450

## Heavy-Duty Performance Transmissions

Approved Models	Application	Transmission Torque	Component	Std Warranty Yr/Mi (000)	Total Coverage Years / Miles (000)					
					Option #1	Price	Option #2	Price	Option #3	Price
UltraShift® PLUS MHP/MXP	On-Road Linehaul	1750 Lbs.-Ft. and below	Transmission	5/500	6/750	\$450	7/750	\$600	7/850	\$750
		1850 Lbs.-Ft. and above	Transmission	5/500	6/750	\$600	7/750	\$800	7/850	\$1,000
		ALL	Clutch	5/350	4/450	\$300	5/550	\$500	N/A	N/A
	Standard Duty – Pickup & Delivery, Construction, Recreational Vehicle, Transit Coach	1750 Lbs.-Ft. and below	Transmission	3/U	4/U	\$700	5/U	\$1,000	N/A	N/A
		1850 Lbs.-Ft. and above	Transmission	3/U	4/U	\$950	5/U	\$1,200	N/A	N/A
		ALL	Clutch	3/U	4/U	\$350	5/U	\$625	N/A	N/A
	Severe Duty – Heavy Haul, Logging, Mining, Oil Field, Refuse, Agriculture, Off Highway	1750 Lbs.-Ft. and below	Transmission	2/U	3/U	\$950	4/U	\$1,300	5/U	\$1,800
		1850 Lbs.-Ft. and above	Transmission	2/U	3/U	\$1,250	4/U	\$1,650	5/U	\$2,200
		ALL	Clutch	2/U	3/U	\$425	4/U	\$750	5/U	\$1,050
UltraShift PLUS VXP	On-Road Linehaul	1750 Lbs.-Ft. and below	Transmission	3/300	5/500	\$750	7/750	\$900	7/850	\$1,050
		1850 Lbs.-Ft. and above	Transmission	3/300	5/500	\$1,000	7/750	\$1,200	7/850	\$1,400
		ALL	Clutch	3/350	4/450	\$300	5/550	\$500	N/A	N/A
	Standard Duty – Pickup & Delivery, Construction, Recreational Vehicle, Transit Coach	1750 Lbs.-Ft. and below	Transmission	3/U	4/U	\$700	5/U	\$1,000	N/A	N/A
		1850 Lbs.-Ft. and above	Transmission	3/U	4/U	\$950	5/U	\$1,200	N/A	N/A
		ALL	Clutch	3/U	4/U	\$350	5/U	\$625	N/A	N/A
	Severe Duty – Heavy Haul, Logging, Mining, Oil Field, Refuse, Agriculture, Off Highway	1750 Lbs.-Ft. and below	Transmission	2/U	3/U	\$950	4/U	\$1,300	5/U	\$1,800
		1850 Lbs.-Ft. and above	Transmission	2/U	3/U	\$1,250	4/U	\$1,650	5/U	\$2,200
		ALL	Clutch	2/U	3/U	\$425	4/U	\$750	5/U	\$1,050
UltraShift PLUS LSE	On-Road Linehaul	1750 Lbs.-Ft. and below	Transmission	5/750	6/750	\$450	7/750	\$600	7/850	\$750
		1850 Lbs.-Ft. and above	Transmission	5/750	6/750	\$600	7/750	\$800	7/850	\$1,000
		ALL	Clutch	3/350	4/450	\$300	5/550	\$500	N/A	N/A
RT-13/18	On-Road Linehaul	1750 Lbs.-Ft. and below	Transmission	3/300	5/500	\$425	7/750	\$750	7/850	\$800
		1850 Lbs.-Ft. and above	Transmission	3/300	5/500	\$725	7/750	\$1,250	7/850	\$1,450
	Standard Duty – Construction, Pickup and Delivery, Transit Coach, School Bus, Recreation Vehicle, Fire	1750 Lbs.-Ft. and below	Transmission	3/U	4/U	\$350	5/U	\$600	N/A	N/A
		1850 Lbs.-Ft. and above	Transmission	3/U	4/U	\$600	5/U	\$1,000	N/A	N/A
	Severe Duty – Off Highway, Agriculture, Heavy Haul, Logging, Mining, Oil Field, Refuse, Yard Tractor, InterCity	1750 Lbs.-Ft. and below	Transmission	2/U	3/U	\$475	4/U	\$750	5/U	\$1,200
		1850 Lbs.-Ft. and above	Transmission	2/U	3/U	\$750	4/U	\$1,200	5/U	\$1,800
Convertible 9-13	On-Road Linehaul	ALL	Transmission	5/500	6/750	\$200	5/U	\$350	7/850	\$450
	Standard Duty – Construction, Pickup and Delivery, Transit Coach, School Bus, Recreation Vehicle, Fire Service, Rescue Vehicle	1750 Lbs.-Ft. and below	Transmission	3/U	4/U	\$350	5/U	\$600	N/A	N/A
		1850 Lbs.-Ft. and above	Transmission	3/U	4/U	\$600	5/U	\$1,000	N/A	N/A
	Severe Duty – Off Highway, Agriculture, Heavy Haul, Logging, Mining, Oil Field, Refuse, Yard Tractor, InterCity Bus	1750 Lbs.-Ft. and below	Transmission	2/U	3/U	\$350	4/U	\$750	ALL	\$1,200
		1850 Lbs.-Ft. and above	Transmission	2/U	3/U	\$750	4/U	\$1,200	ALL	\$1,800

Note: All pricing and coverage subject to change, and must meet Eaton application requirements. All extended coverage requires use of Eaton-approved lubricants.





Heavy-Duty Vocational Transmissions

Approved Models	Application	Transmission Torque	Component	Std Warranty Yr/Mi (000)	Total Coverage Years/Miles (000)					
					Option #1	Price	Option #2	Price	Option #3	Price
Fuller Advantage Automated	Standard Duty – Pickup & Delivery, Construction, Recreational Vehicle, Transit Coach	1750 lbs.-ft and below	Transmission	3/U	4/U	\$700	5/U	\$1,000	N/A	N/A
		1850 lbs.-ft and above	Transmission	3/U	4/U	\$950	5/U	\$1,200	N/A	N/A
		ALL	Clutch	3/U	4/U	\$350	5/U	\$625	N/A	N/A
	Severe Duty – Heavy Haul, Logging, Mining, Oil Field, Refuse, Agriculture, Off Highway	1750 lbs.-ft and below	Transmission	2/U	3/U	\$950	4/U	\$1,300	5/U	\$1,800
		1850 lbs.-ft and above	Transmission	2/U	3/U	\$1,250	4/U	\$1,650	5/U	\$2,200
		ALL	Clutch	2/U	3/U	\$425	4/U	\$750	5/U	\$1,050
UltraShift® PLUS VCS/VMS	Standard Duty – Pickup & Delivery, Construction, Recreational Vehicle, Transit Coach, Fire Service, Rescue Vehicle	1750 lbs.-ft and below	Transmission	3/U	4/U	\$700	5/U	\$1,000	N/A	N/A
		1850 lbs.-ft and above	Transmission	3/U	4/U	\$950	5/U	\$1,200	N/A	N/A
		ALL	Clutch	3/U	4/U	\$350	5/U	\$625	N/A	N/A
	Severe Duty – Heavy Haul, Logging, Mining, Oil Field, Refuse, Agriculture, Off Highway	1750 lbs.-ft and below	Transmission	2/U	3/U	\$950	4/U	\$1,300	5/U	\$1,800
		1850 lbs.-ft and above	Transmission	2/U	3/U	\$1,250	4/U	\$1,650	5/U	\$2,200
		ALL	Clutch	2/U	3/U	\$425	4/U	\$750	5/U	\$1,050
RT-9ALL/15	Standard Duty – Construction, Pickup and Delivery, Transit Coach, School Bus, Recreation Vehicle, Fire Service, Rescue Vehicle	1750 lbs.-ft and below	Transmission	3/U	4/U	\$350	5/U	\$600	N/A	N/A
		1850 lbs.-ft and above	Transmission	3/U	4/U	\$600	5/U	\$1,000	N/A	N/A
	Severe Duty – Off Highway, Agriculture, Heavy Haul, Logging, Mining, Oil Field, Refuse, Yard Tractor, InterCity Bus	1750 lbs.-ft and below	Transmission	2/U	3/U	\$475	4/U	\$750	5/U	\$1,200
		1850 lbs.-ft and above	Transmission	2/U	3/U	\$750	4/U	\$1,200	5/U	\$1,800

Medium-Duty Transmissions

Approved Models	Application	Transmission Torque	Component	Std Warranty Yr/Mi (000)	Total Coverage Years/Miles (000)					
					Option #1	Price	Option #2	Price	Option #3	Price
Procision® Dual-Clutch Automatic	Standard Duty – Pickup and Delivery, Beverage, Towing	ALL	Transmission	3/U	5/U	\$350	5/U	\$500	7/U	\$650
	Standard Duty – Bus	ALL	Transmission	5/U	7/U	\$500	N/A	N/A	N/A	N/A
Manual	Standard Duty – Construction, City Delivery, Transit Coach, School Bus, Recreation Vehicle, Fire Service, Rescue Vehicle	ALL	Transmission	2/U	3/U	\$150	4/U	\$250	5/U	\$350

Pricing  
All pricing is in USD and applies for Protection Plans sold in the first year in service. An additional premium is required for Protection Plans sold within the second and third year of vehicle service. Plans must be purchased before the end of the standard warranty period.  
Premium Pricing: Second year \$100; Third year \$300.  
Canadian orders will be invoiced in CAN\$ based on prevailing exchange rate. For the most current CAN\$ pricing, go to Order Online.

Notes  
1. 'Convertible' models 5/500 coverage when operated only as 9 speeds.  
2. "U" denotes "Unlimited" mileage.  
3. All pricing and coverage subject to change and must meet Eaton application requirements. All extended coverage requires use of Eaton-approved lubricants.





Eaton Transmissions Overview

	Heavy-Duty																						Medium-Duty	
	Linehaul									Performance								Vocational					Truck and Bus	
Model	Endurant DD	Endurant OD	FAS EC3/EN3/EP3	FAS (EA3) DD	FAS (EA3) Overdrive	FAS 10B	FAS 10C	FR Series 10C	FR Series 10B	UltraShift® <i>PLUS</i> MHP	UltraShift <i>PLUS</i> MXP	UltraShift <i>PLUS</i> VXP	UltraShift <i>PLUS</i> LSE	AutoShift 18	RT-13	RT-18	Convertible 9-13	FAS (EA3) Overdrive	UltraShift <i>PLUS</i> VCS	UltraShift <i>PLUS</i> VMS	RT-8LL	RT- 9ALL	RT-15	Procision®
Type	Automated	Automated	Automated	Automated	Automated	Manual	Manual	Manual	Manual	Automated	Automated	Automated	Automated	Automated	Manual	Manual	Manual	Automated	Automated	Automated	Manual	Manual	Manual	Automatic
Description	11 Forward Spds 2 Reverse First Gear Ratio: 14.43 Overall Ratio: 14.43	12 Forward Spds 2 Reverse First Gear Ratio: 14.43 Overall Ratio: 18.85	10 Forward Spds 2 Reverse First Gear Ratio: 14.11 Overall Ratio: 17.73	10 Forward Spds 2 Reverse First Gear Ratio: 15.42 Overall Ratio: 15.42	10 Forward Spds 2 Reverse First Gear Ratio: 12.80 Overall Ratio: 17.53	10 Forward Spds 2 Reverse First Gear Ratio: 15.42 Overall Ratio: 15.42 (10B)	10 Forward Spds 2 Reverse First Gear Ratio: 12.80 Overall Ratio: 17.53 (10C)	10 Forward Spds 2 Reverse First Gear Ratio: 12.69 Overall Ratio: 17.15 (10C)	10 Forward Spds 2 Reverse First Gear Ratio: 14.80 Overall Ratio: 14.80 (10B)	13 Forward Spds 3 Reverse First Gear Ratio: 12.29 Overall Ratio: 16.84	18 Forward Spds 4 Reverse First Gear Ratio: 12.19 Overall Ratio: 16.70 (18A) ----- 18 Forward Spds 4 Reverse First Gear Ratio: 14.4 Overall Ratio: 19.73 (18B)	18 Forward Spds 4 Reverse First Gear Ratio: 14.4 Overall Ratio: 19.73	16 Forward Spds 2 Reverse First Gear Ratio: 14.40 Overall Ratio: 14.40	18 Forward Spds 4 Reverse First Gear Ratio: 12.19 Overall Ratio: 16.70	13 Forward Spds 3 Reverse First Gear Ratio: 12.31 Overall Ratio: 16.86	18 Forward Spds 4 Reverse First Gear Ratio: 14.4 Overall Ratio: 19.73 (18B)	9 Forward Spds 2 Reverse First Gear Ratio: 10.50 Overall Ratio: 14.38	10 Forward Spds 2 Reverse First Gear Ratio: 12.80 Overall Ratio: 17.53	10 Forward Spds 3 Reverse First Gear Ratio: 14.56 Overall Ratio: 19.68	11 Forward Spds 3 Reverse First Gear Ratio: 26.08 Overall Ratio: 35.73	10 Forward Spds 3 Reverse First Gear Ratio: 14.56 Overall Ratio: 19.68	11 Forward Spds 3 Reverse First Gear Ratio: 26.08 Overall Ratio: 35.73	15 Forward Spds 3 Reverse First Gear Ratio: 16.94 Overall Ratio: 16.94 (Direct drive) ----- 15 Forward Spds 3 Reverse First Gear Ratio: 13.31 Overall Ratio: 16.85 (Overdrive)	7 Forward Spds 1 Reverse
Max. GVW/ GCW	Up to 80,000 lbs.	Up to 110,000 lbs	Up to 80,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 140,000 lbs.	Up to 140,000 lbs.	Up to 140,000 lbs.	Unlimited	Unlimited	Up to 110,000 lbs.	Up to 110,000 lbs.	Unlimited	Unlimited	Up to 140,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 110,000 lbs.	Up to 35,000 lbs.
Typical Vehicle Types	Linehaul									General Freight, Bulk Hauler, Doubles/Triples, Steel Hauler, Tanker, Livestock Hauler	Doubles/Triples, Equipment Hauler, Lowboy, Logging, Mining, Construction	Mining, Logging, Agriculture, Military	General Freight, Bulk Hauler, Doubles/Triples, Steel Hauler, Tanker, Livestock Hauler	Linehaul (Australia, Mexico, South Africa & South America)	General Freight, Bulk Hauler, Doubles/Triples, Steel Hauler, Tanker, Livestock Hauler	Doubles/Triples, Equipment Hauler, Lowboy, Logging, Mining, Construction	General Freight, Bulk Hauler, Doubles/Triples, Steel Hauler, Tanker, Livestock Hauler	Dump, Oil Field, Asphalt Truck, Block Truck, Fire Pumper/Tanker	Dump, Roll-Off, Asphalt Truck, Municipality, Utility	Mixer, Pumper, Crane, Dump	Dump, Roll-Off, Asphalt Truck, Municipality, Utility	Mixer, Pumper, Crane, Dump	Roll-Off, Tipper	Pickup & Delivery, Towing, Straight Beverage, School Bus
Transmission Nomenclature	EE- 17F111B	EEO-14F112C	FAOM-13810S-EC3	FAM-14810B-EA3	FAO-14810C-EA3	FA-14810B	FAO-14810C	FRO-14210C	FR-9210B	FO-16E313A-MHP	FO-16E318B-MXP	FO-18E318B-VXP	F-14E316B-LSE	AS 18 RTLO-16918A-AS3	RTLO-16913A	RTLO-16918B	RTOC-16909A	FAO-14810C-EA3	FO-10E308LL-VCS	FO-10E309ALL-VMS	RT-8908LL	RTO-14909ALL	RT-14915	EDCO-6F107A-P
	--	EEO-15F112C	FAOM-14810S-EC3	FAM-15810B-EA3	FAO-16810C-EA3	FA-15810B	FAO-15810C	FRO-15210C	FR-14210B	FO-18E313A-MHP	FO-18E318B-MXP	FO-20E318B-VXP	F-15E316B-LSE	AS 18 RTLO-18918A-AS3	RTLO-18913A	RTLO-18918B	RTOCM-16909A	FAO-16810C-EA3	FO-11E308LL-VCS	FO-11E309ALL-VMS	RTO-14908LL	RTO-16909ALL	RTO-16915	EDCO-6F107A
	--	EEO-16F112C	FAOM-15810S-EC3	--	FAOM-15810C-EA3	FAM-15810B	FAO-16810C	FRO-16210C	FR-15210B	FO-20E313A-MHP	FO-20E318B-MXP	FO-22E318B-VXP	F-17E316B-LSE	AS 18 RTLO-20918A-AS3	RTLO-20913A	RTLO-20918B	RTOC-18909A	FAOM-15810C-EA3	FO-12E308LL-VCS	FO-12E309ALL-VMS	RTO-16908LL	--	--	EDCO-6F107A-B
	--	EEO-17F112C	FAOM-15810S-EN3	--	FAOM-16810C-EA3	--	FAOM-15810C	FRO-17210C	FRM-15210B	--	FO-22E318B-MXP	--	FM-15E316B-LSE	AS 18 RTLO-22918A-AS3	--	RTLO-22918B	--	FAOM-16810C-EA3	FO-14E308LL-VCS	FO-14E309ALL-VMS	--	--	--	--
	--	EEO-18F112C	FAO-16810S-EP3	--	--	--	FAOM-16810C	FRO-18210C	FRW-15210B	--	FO-18E318A-MXP	--	--	--	--	--	--	--	FO-16E308LL-VCS	FO-16E309ALL-VMS	--	--	--	--
	--	--	FAOM-15810S-EP3	--	--	--	--	--	--	--	--	FO-20E318A-MXP	--	--	--	--	--	--	--	FO-17E308LL-VCS	FO-17E309ALL-VMS	--	--	--

Note: The most appropriate transmission will vary with application. If you have more specific questions, please visit [www.roadranger.com](http://www.roadranger.com) or contact your Roadranger Service Representative.  
All vehicles must meet Eaton's minimum performance requirements with the specified GVW/GCW.





## Peace of Mind

### Backed by the support and expertise of the Roadranger® Network

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**Dedicated Support.** America's most experienced powertrain support network provides a complete spectrum of support for Eaton components, from spec'ing to service to aftermarket support. There is also training available through the Roadranger Academy. Visit [www.roadranger.com](http://www.roadranger.com) for all the details.

**Convenient Service.** With Eaton transmissions, service can be performed at a local dealer. Our modular designs minimize cost and repair time, and widely available parts get your vehicles back on the road faster.

**Impressive Warranty.** Eaton's comprehensive warranties vary by application. For specific coverage, check the Eaton Warranty Guide (TCWY0900).

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