

2013 – 2014

Specification Guide

Transmissions
Clutches
Hybrid Power
Service & Support



EATON

Powering Business Worldwide

BACKED BY

Roadranger

SUPPORT



Roadranger®

SUPPORT AND SOLUTIONS FROM
THE POWERTRAIN EXPERTS.

The entire portfolio of Eaton® products are backed by the Roadranger network.
Choose an Eaton component, and receive Roadranger's unparalleled:

Support: There are over 200 Roadranger representatives throughout North America ready to support you and an easily accessible call center is available to guide you through the troubleshooting process. Roadranger Academy also offers both computer-based and onsite training from industry experts on how to best maintain and service your drivetrain systems. In addition, industry leading warranties support your peace of mind. Diagnostic tools, literature and videos are available online at Roadranger.com.

Solutions: Our expertise and support work together to provide customized solutions that result in the efficiency, productivity and performance needed to ensure maximum uptime for the lifecycle of the product.

Expertise: Well-trained representatives have the knowledge to understand complex needs and specify the right powertrain for any application and service demand, as well as recommend the best approved lubricants to protect your investment.

To learn how you can benefit from all the tools
Roadranger has to offer, contact your Roadranger
representative or visit Roadranger.com

Roadranger®



What is
Roadranger?
View now.

Specification Guide 2013 - 2014



Transmission

The Power of Choice	4
Model Families and Vocations	5
Heavy-Duty General Information	6-9
UltraShift® PLUS Overview	10
UltraShift PLUS Quick Selector Guide	11
Heavy-Duty Automated.....	12-15
Heavy-Duty Manual.....	16-21
Medium-Duty General/Automated Information.....	22-23
Medium-Duty Automated/Manual	24-25



Clutch

General Information	26
Heavy-Duty.....	27
Medium-Duty	28

Fleet & Vehicle Management

Diagnostic Tools.....	29
-----------------------	----

Hybrid Power

Medium-Duty Hybrid Electric System	30-32
--	-------

Service & Support

Extended Protection Plans.....	33-38
Online Support	39
Lubricant Requirements.....	40
Online Training	41

Definitions and ServiceRanger 4

Definitions	42
ServiceRanger 4.....	43





The Power of Choice

Only Eaton® offers the largest portfolio of transmissions to meet the unique needs of any application. Our manual and automated transmissions are available in 5- to 18-speeds and offer fleets the unique ability to handpick the right transmission for the job. And only Eaton gives you the power to select the application-specific options that increase efficiency, uptime, safety and your bottom line. Choosing an Eaton transmission doesn't box fleets into any one chassis, set of speeds, ratios or service network. Instead, our transmissions give you the power to spec for your trucks and their routes. And they're backed by Roadranger® support; the industry's leading powertrain specialists.

More chassis and engine options than any competitor

Eaton transmissions offer a greater range of OEM chassis and engine combinations than competitors, giving you the freedom to spec a truck that's tailored to your needs.

Application-Specific Performance

Eaton's foundational transmission technology- the Fuller constant mesh, twin countershaft manual transmission, is the No.1 choice of fleets in North America. They are available in 5- through 18-speed models (direct and overdrive for 10- speed), offering the greatest array of ratio sets to provide optimum efficiency and match the unique demands of any application.

Because Eaton also engineers a suite of clutches for its transmissions, only Eaton transmissions can handle the largest loads. And with 6- and 8-bolt and through-shaft availability, Eaton transmissions don't limit PTO options.

Ease of service and parts availability for reduced cost of ownership

Technicians at more than 3,500 dealerships are not only familiar with the design and function of Eaton transmissions, but also have parts readily available to minimize costs and shorten time of service. Eaton transmissions also employ a modular design to increase service accessibility and part availability.

In addition, our transmissions can be serviced on a per-part basis from an extensive multi-brand distribution network. Competitors often do not have parts readily available when a repair is needed. As such, their service strategy is to swing the complete transmission, which could be both expensive and time intensive.

Eaton transmissions also lower costs by offering extended oil drain intervals. For linehaul applications (rated at 80,000 lbs. [29,859 kg] or less) the interval is 5 years/500,000 miles [804,672 km] with a clutch service interval at 50,000 miles [80,467 km].

Support after sale

Roadranger representatives are the most experienced, knowledgeable, and accessible drivetrain consultants in the business. More than 200 Roadranger representatives in North America support customers from spec'ing to service. Your Roadranger representative can utilize their reach across the industry to champion issues, resolve problems and decrease downtime.



**Serious about spec'ing?
Calculate road speed,
startability with your
smart phone.**



Transmission Model Families and Vocations

No matter your application, Eaton has a transmission to meet your needs.

Model Family	Lbs-Ft Max TQ (Nm)	Max Engine HP	Forward Speed	Max GCW (lbs)	Type*	Severe Duty		Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
						Linehaul	Heavy Haul	Logging	Mining	Oil Field	Refuse	Agricultural	Off Highway			School Bus	Transit Coach	Recreational
Heavy Duty																		
Ultrashift PLUS VAS	1650 (2237)	600	10	110,000 [49895kg]	A													
Ultrashift PLUS VCS	1750 (2373)	600	10	110,000 [49895kg]	A													
Ultrashift PLUS VHP	2050 (2779)	700	13	140,000 [63503kg]	A													
Ultrashift PLUS VMS	1750 (2373)	600	11	110,000 [49895kg]	A													
Ultrashift PLUS VXP	2250 (3051)	700	18	unlimited	A													
Ultrashift PLUS MHP	2050 (2779)	700	13	140,000 [63503kg]	A													
Ultrashift PLUS MXP	2250 (3051)	700	18	unlimited	A													
Ultrashift PLUS LAS	1650 (2237)	600	10	110,000 [49895kg]	A													
† Advantage Series (FASA)	1750 (2373)	455**	10	80,000 [36287kg]	A													
AutoShift 18	2250 (3051)	700	18		A													
Super 18	2250 (3051)	700	18		M													
15-Speed	1650 (2237)	600	15		M													
Super 13	2050 (2780)	700	13		M													
† Advantage Series (FASM)	1650 (2237)	455	10	80,000 [36,287kg]	M													
9 ALL	1650 (2237)	600	9+2 Low		M													
FR Series	1850 (2509)	600	10		M													
8LL	1650 (2237)	600	8+2 Low		M													
Convertible 9-13	1850 (2509)	600	9, 13		M													
RT-9 Series	1850 (2509)	600	9		M													
Medium Duty																		
UltraShift HV	660 (895)		5, 6	33,000*** [14969kg]	A													
Fuller 5- & 6-Speed	860 (1166)		5, 6		M													

Vocation definitions on page 42. † FASA = Fuller Advantage Series Automated, FASM = Fuller Advantage Series Manual

*A = Automated, M = Manual. **Only available with Cummins ISX15 engine. ***Approved to 55,000 lbs. [24948kg] in diminishing load applications.

Transmission General Information

Heavy-Duty Automated

Fuller Advantage™ Transmissions

The Fuller Advantage Series Automated (FASA) transmission combines the best UltraShift PLUS features with the most efficient performing heavy-duty manual transmission available. Error-free guess proof shifting makes every driver in your fleet as good as your best driver.



UltraShift® PLUS Transmissions

Built by the proven leader in automated transmissions, UltraShift PLUS is stronger, tougher, smarter and more efficient than any other automatic or automated transmission. Available in eight models for linehaul and vocational use, each offers maximum power capacity, superior acceleration and low-speed maneuverability.



AutoShift® Transmissions

Once the vehicle is in motion, an AutoShift transmission operates like an automatic transmission, with the efficiency of a manual transmission. AutoShift transmissions are now only available in Australia, Mexico and South Africa.



Heavy-Duty Manual

“Convertible” 9/13-Speeds

Operates as a simple 9-Speed transmission, easily converts to a 13-Speed to increase vehicle versatility and resale value. Now available in two torque ratings...1650 lb-ft. [2237 Nm] and 1850 lb-ft. [2509 Nm].



Fuller Advantage 10-Speed

The Fuller Advantage Series Manual (FASM) 10-speed transmission, the first new Eaton manual transmission design in over a decade, offers you the most efficient performing heavy-duty manual transmission available. Precision lubrication technology reduces oil churning losses and eliminates the need for a cooler in most applications...reduces weight and increases reliability.



FR Series 10-Speeds

The FR Series is the standard in transmission performance, reliability and durability while delivering more payload capability with engines up to 1850 lb-ft. [2509 Nm]. The FR Series provides improved tolerance to driver abuse and more precise shifting for improved performance and reduced operating costs. “B” series offers direct drive, while “C” series offers overdrive.



Deep Reduction Transmissions

Deep Reduction 8LL and 9ALL transmissions have 8 forward speeds, 2 low speeds and 3 reverse speeds to provide versatility in on-off highway applications and demanding on-highway duty, with engines up to 1650 lb-ft. [2237 Nm].



Low-Inertia “Super 13” and “Super 18” Transmissions

The “Super 13” features the patented low-inertia design concept that makes shifting smoother, faster and easier. The “Super 18” has 18 forward and 4 reverse gears, a 19.7 to 1 overall reduction and a 14.40 low gear for unbeatable versatility. Two overdrive ratios... 0.73 and 0.86...provide efficient cruise RPM's and economical performance.



Transmission General Information

How To Use The Specification Guide

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.

Shaded boxes are used to indicate availability of features or options.

Specifications, features and benefits can also be found at www.eaton.com/roadranger.

Warranty coverage information is available on our web site or in Warranty Guide TCWY0900.

The models, options and specifications listed in this document were current at the time of publication.

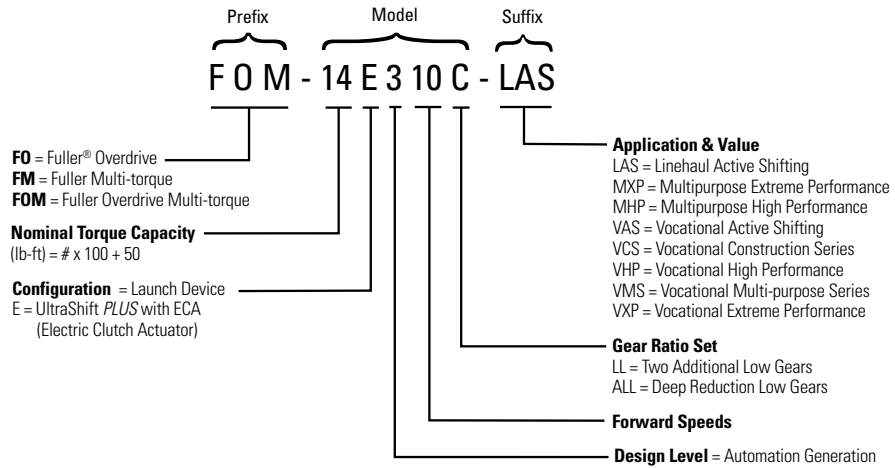
Model availability, options and specifications are subject to change without notice.

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 kgs.] 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 H.P. and above.
Required – With engines 400 H.P. and above and GCW's over 90,000 lbs. [40,823 kgs.]
 – With engines 400 H.P. and above and 1400 lb-ft. [1898 Nm] or greater torque.
 – With engines 450 H.P. and above.
 – With engines 1500 lb-ft. [2034 Nm] and above.
- Shift Control Systems** A variety of direct mounted shift lever configurations and mechanical remote controls are 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 exception of RT-6609A and automated products. A variety of automatic style shift controls are available, both shift lever and push button, for automated transmissions. For specific applications contact your OEM.
- Oil Filters Recommended** – RTLO-1x913A, RTLO-1x918A-AS3, RTLO-1x918B

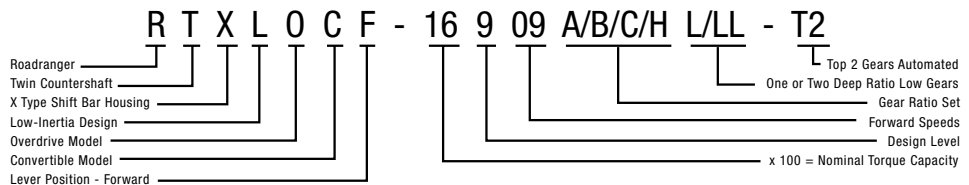
Transmission models requiring oil filters are noted as such in the specifications.

Heavy-Duty Automated Nomenclature (reference item RRSL0002 for further nomenclature explanations)



Heavy-Duty Manual Nomenclature

RTLOCF — 16909A/B/C/H L/LL - T2



Transmission Heavy-Duty General Information

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-Series*	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]

* No SAE NO. 2 Clutch housing on 13 & 18 Speed Models or automated 10 speeds rated 1450 lb-ft or above.
 Note: No cast iron clutch housings on UltraShift and UltraShift *PLUS* models.

Hydraulic Clutch Release Options

Model Series	SAE NO.1			SAE NO.2		
	Housing Type	Aluminum	Iron	Housing Type	Aluminum	Iron
All Other FA-Series Manual, RT & FR-Series Except for FR w/Internal oil cooler	Standard	Integral**				Multi-Piece*
	Nodal	Multi-Piece*				
	Nodal Forced Lube	Multi-Piece*				
	Std. Forced Lube	Integral**				

* Multi-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)

** Integral Hydraulic Clutch Release System

- Clutch housing weight is 27 lbs [12.24 kgs] (without Clutch Release Components)
- Clutch housing weight is 34 lbs [15.42 kgs] (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].

SHADED AREA INDICATES AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ).

Transmission Heavy-Duty General Information

Power Take-Off (PTO) Specifications

Models	Right Side	Left Side*	Rear-Mount
AT-1202	(Top Mount) 8 Bolt, 30 Tooth, 5 Pitch Gear	6 Bolt, 30 Tooth, 5 Pitch Gear	N/A
All Other FAS Models	6 Bolt, 45 Tooth, 6/8 Pitch Gear	8 Bolt, 47 Tooth, 6/8 Pitch Gear	32 Tooth, 0.5 Pitch, 30° (where available)
FR w/Integral Oil Cooler	Not Available – Interference with cooler	8 Bolt, 47 Tooth, 6/8 Pitch Gear	32 Tooth, 0.5 Pitch, 30° (where available)

* Some Left Side PTO mounts are located on the bottom of the transmission. See PTO Information Guide, TRIG2600 for more information.

End Yoke Lengths

Transmission Model Series	Yoke Series	Yoke Length Speedo To Cross		
RT-8 thru 13XXX Design Level 6 and 7		1710	4.74	2.74
		1760	5.05	
		1810	5.00	2.74
		SPL170	4.87	
		SPL250	5.18	
		RPL20	4.65	
		RPL25	5.37	
		SPL140	5.96	
RT-14 thru 18XXX Design Level 6 and 7		1710	5.75	4.06
		1760	5.97	
		1810	6.06	
		SPL170	5.85	
		SPL250	6.30	
		RPL20	5.47	
		RPL25	5.47	
		SPL140	6.57	
All FASM, FR & RT Design Levels 2, 4, 8, 9		1710	5.63	3.31
		1760	5.63	3.31
		1810	5.63	3.31
		SPL170	5.60	
		SPL250	5.71	
		RPL20	5.63	
		RPL25	6.26	
		SPL140	6.32	

Fuller® Auxiliary Transmission Specifications

2 Speed Models	Sales Sht. TRSLXXXX	Input Max TQ lb-ft [Nm]	Output Max TQ lb-ft [Nm]	Overall	1	%	2	Midship	Oil Cap Pints [ltr]	Length Inches [mm]	Weight lbs.[kg]	PTO Speed (% of Engine)
AT-1202*	0039	17,500 [23,727]	35,700 [48,402]	2.04	2.04	104	1.00	REQ	11 [5]	16.5 [419]	353 [160]	93
2A-92		9,700 [13,151]	22,300 [30,234]	2.30	2.30	130	1.00	REQ	12 [6]	16.2 [411]	310 [141]	

* Aux C/S Pump Available

Learn about UltraShift® PLUS

Scan to watch your personalized video or go to ultrashiftplus.com



Transmission UltraShift® PLUS Overview

The UltraShift® PLUS Series gives you the options needed to spec a transmission that's tailored to your fleet, and our extensive portfolio of transmissions integrate into every major OE in North America. As with all Eaton® components, you'll be backed by the Roadranger® network: expertise and support that provide you with the best solutions for the lifecycle of the truck.

- Available in multiple chassis
- Certified and optimized with multiple engines
- Multiple models offer application-specific performance and economy: from 10- to 18-speeds and up to unlimited GCWV
- Intelligent software is customizable
- Serviceable at any OE for increased uptime with parts readily available
- Safety features include hill start aid and auto neutral
- Backed by Roadranger support: North America's leading drivetrain specialist



With so many transmission platforms and configurations available, UltraShift® PLUS is always the right tool for the job.

- 1650 Lbs.-Ft. MaxTQ [2237 Nm]
- 600 Max Engine HP
- 10 Forward Speed
- 110,000 Max GCW [49895 kg]



UltraShift PLUS Vocational Active Shifting

- 1650 Lbs.-Ft. MaxTQ [2237 Nm]
- 600 Max Engine HP
- 10 Forward Speed
- 110,000 Max GCW [49895 kg]



UltraShift PLUS Linehaul Active Shifting

- 1750 Lbs.-Ft. MaxTQ [2373 kg]
- 600 Max Engine HP
- 10 Forward Speed
- 110,000 Max GCW [49895 kg]



UltraShift PLUS Vocational Construction Series

- 1750 Lbs.-Ft. MaxTQ [2373 kg]
- 600 Max Engine HP
- 10 Forward Speed
- 110,000 Max GCW [49895 kg]



UltraShift PLUS Vocational Multipurpose Series

- 2050 Lbs.-Ft. MaxTQ [2780 kg]
- 700 Max Engine HP
- 13 Forward Speed
- 140,000 Max GCW [63503 kg]



UltraShift PLUS Vocational High Performance

- 2050 Lbs.-Ft. MaxTQ [2780 kg]
- 700 Max Engine HP
- 13 Forward Speed
- 140,000 Max GCW [63503 kg]



UltraShift PLUS Multipurpose High Performance

- 2250 Lbs.-Ft. MaxTQ [3051 kg]
- 700 Max Engine HP
- 18 Forward Speed
- No Max GCW*



UltraShift PLUS Vocational Extreme Performance

- 2250 Lbs.-Ft. MaxTQ [3051 kg]
- 700 Max Engine HP
- 18 Forward Speed
- No Max GCW*



UltraShift PLUS Multipurpose Extreme Performance

*if all application guideline requirements are satisfied.

UltraShift® PLUS Quick Selector Guide



Learn more at
UltraShiftPLUS.com

	Linehaul		Vocational			Heavy-Duty and Extreme Performance			
Model	LAS Direct Drive	LAS Overdrive	VAS	VCS 8LL	VMS 9ALL	MHP	VHP	MXP	VXP
Description	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: 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	13 Forward Spds 3 Reverse First Gear Ratio: 12.29 Overall Ratio: 16.84	13 Forward Spds 3 Reverse First Gear Ratio: 12.29 Overall Ratio: 16.84	18 Forward Spds 4 Reverse First Gear Ratio: 14.4 Overall Ratio: 19.73	18 Forward Spds 4 Reverse First Gear Ratio: 14.4 Overall Ratio: 19.73
Max GCW/GCVW	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 140,000 lbs	Up to 140,000 lbs	Unlimited	Unlimited
Primary Application	On-Hwy Only	On-Hwy Only	On/Off Road	On/Off Road	On/Off Road	On-Hwy Only	On/Off Road	On-Hwy	Off Road
Suggested Applications	Linehaul	Linehaul	Dump, Roll-Off, Flatbed, Landscape	Highway Construction Dump, Block Truck, Pumper	Mixers, Asphalt, Spreading, Pumper, Crane	Doubles, Triples, Canadian & Linehaul	Heavy Dumps, On/Off Road Bulk Haulers	Doubles, Triples, Linehaul, Pickup and Delivery, Construction	Mining, Logging, Agriculture, Military
Warranty*	5 years/750k miles	5 years/750k miles	3 years/unlimited miles	3 years/unlimited miles	3 years/unlimited miles	5 years/500k miles	3 years/unlimited miles	5 years/500k miles	2 years/unlimited miles
Alternate Applications	On-Hwy Only	On-Hwy Only	On/Off Road Severe Service	On/Off Road Severe Service	On/Off Road Severe Service	On-Hwy Only	Severe Service	On/Off Hwy & Severe Service	On/Off Road
Suggested Applications	Pick up and Delivery ¹ , Recreation, Transit Coach	Pick up and Delivery ¹ , Recreation, Transit Coach	Dump, Oil Field, Mining, Logging, Crane	Dump, Oil Field, Mining, Logging, Crane	Dump, Oil Field, Mining, Logging, Crane	Canadian & Linehaul	Dump, Oil Field, Mining, Logging, Crane	Heavy Haul, Dump, Oil Field, Mining, Logging, Crane, Agriculture	Fire/Rescue, Military, Mining, Logging, Oil Field
Warranty*	1 5 years/750K miles 3 years/unlimited miles	1 5 years/750K miles 3 years/unlimited miles	2 years/unlimited miles	2 years/unlimited miles	2 years/unlimited miles	5 years/500k miles	2 years/unlimited miles	2 years/unlimited miles	3 years/unlimited miles
Notes	This transmission is designed to provide optimal value for standard linehaul or city delivery applications while providing the efficiency benefits of direct drive.	This transmission is designed to provide optimal value for standard linehaul or city delivery applications while providing a wider overall ratio.	This transmission is designed to provide optimal value for standard vocational applications.	This transmission is designed for those needing deep reduction combined with fast, flexible reverse for longer-distance backing.	This transmission is designed to provide superior low speed maneuverability around construction sites.	This transmission is designed for on highway applications where fuel economy and gradeability are important.	This transmission is designed for moderate on-off road vocational applications where on-hwy fuel economy and gradeability are still important.	This transmission is designed to haul extreme loads on large grades while providing for both on and off-highway capability. It may be optimized for performance or fuel economy.	This transmission is Eaton's most severe duty transmission, designed for harsh off-road environments as well as steep grades and heavy loads.

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

***Warranty will vary depending on vocation and intended use conditions. Refer to Eaton Warranty Guide (TCWY0900) for specific warranty information. Warranty coverage will change for transmissions in trucks that are intended for export markets.**

Transmission Heavy-Duty Automated



UltraShift **PLUS** is certified for multiple engines. View list online.

Specs, Options & Provisions

	UltraShift® PLUS Models	lb-ft Max TQ [Nm]	Sales Sht. TRSLXXXX	Integral Oil Pump	Thru Shaft PTO	External Oil-to-Water Cooler ¹	External Oil Filter ¹	Oil Cap. Pints [ltr]	Length Inches [mm] ²	Weight Lbs. [kg] ³	PTO Speed (% of Engine)	Combined PTO Torque (lb-ft)
VAS	FO-10E310C-VAS	1050 [1424]	2500	REQ				26 [12]	31.8 [807.7]	915 [415]	79	500
	FO-12E310C-VAS	1250 [1695]										
	FO-14E310C-VAS	1450 [1966]										
	FO-16E310C-VAS	1650 [2237]										
	FOM-14E310C-VAS	1450 [1966] ⁴										
	FOM-15E310C-VAS	1550 [2101] ⁴										
FOM-16E310C-VAS	1650 [2237] ⁴											
VCS	FO-10E308LL-VCS	1050 [1424]										
	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]										
	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]										
VHP	FO-16E313A-VHP	1650 [2237]										
	FO-18E313A-VHP	1850 [2509]										
	FO-20E313A-VHP	2050 [2779]										
VXP	FO-14E318B-VXP	1450 [1966]										
	FO-16E318B-VXP	1650 [2237]										
	FO-18E318B-VXP	1850 [2509]										
	FO-20E318B-VXP	2050 [2779]										
	FO-22E318B-VXP	2250 [3051]										
MHP	FO-14E313A-MHP	1450 [1966]										
	FO-16E313A-MHP	1650 [2237]										
	FO-18E313A-MHP	1850 [2509]										
	FO-20E313A-MHP	2050 [2779]										
MXP	FO-14E318B-MXP	1450 [1966]										
	FO-16E318B-MXP	1650 [2237]										
	FO-18E318B-MXP	1850 [2509]										
	FO-20E318B-MXP	2050 [2779]										
	FO-22E318B-MXP	2250 [3051]										
LAS	FO-14E310C-LAS	1450 [1966]	2502	REQ				26 [12]	31.8 [807.7]	915 [415]	79	500
	FO-16E310C-LAS	1650 [2237]										
	FOM-14E310C-LAS	1450 [1966] ⁴										
	FOM-15E310C-LAS	1550 [2101] ⁴										
	FOM-16E310C-LAS	1650 [2237] ⁴										
	FM-14E310B-LAS	1450 [1966] ⁴										
	FM-15E310B-LAS	1550 [2101] ⁴										
											70	

SHADED AREAS INDICATE AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ). **1:** Oil pump required. **2:** Standard install length or measured from yoke end to end of rear bearing cover. **3:** Dry weight including clutch. **4:** +200 lb-ft. [271 Nm] in top two gears.

Transmission Heavy-Duty Automated

**Extended
Protection Plans
AVAILABLE**
See pages 33-38.

Ratios & Steps

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	
VAS			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									
					% Step	38	37	38	37	37	38	37	38	37										
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										
VHP		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							
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									
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		
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	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		
LAS 10B			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	35	36	34										
LAS 10C			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									
					% Step	38	37	38	37	37	38	37	38	37										

Model Family	Lbs-Ft Max TQ (Nm)	Max Engine HP	Forward Speed	Max GCW (lbs)	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
							Logging	Mining	Oil Field	Refuse	Agricultural	Off Highway			School Bus	Transit Coach	Recreational
Heavy Duty																	
Ultrashift PLUS VAS	1650 (2237)	600	10	110,000 (49895kg)													
Ultrashift PLUS VCS	1750 (2373)	600	10	110,000 (49895kg)													
Ultrashift PLUS VHP	2050 (2779)	700	13	140,000 (63503kg)													
Ultrashift PLUS VMS	1750 (2373)	600	11	110,000 (49895kg)													
Ultrashift PLUS VXP	2250 (3051)	700	18	unlimited													
Ultrashift PLUS MHP	2050 (2779)	700	13	140,000 (63503kg)													
Ultrashift PLUS MXP	2250 (3051)	700	18	unlimited													
Ultrashift PLUS LAS	1650 (2237)	600	10	110,000 (49895kg)													

Transmission Heavy-Duty Automated

Specs, Options & Provisions

Fuller Advantage Series Models		Ib-ft Max TQ [Nm]	Sales Sht. TRSLXXXX	Integral Oil Pump	Thru Shaft PTO	External Oil-to-Water Cooler ¹	External Oil Filter ¹	Oil Cap. Pints [ltr]	Length ² Inches [mm]	Weight ³ Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (lb-ft)
FASA 10	FAOM-14810S-EC3	1450 [1966] - 1650 [2237]	2526		OPT	N/A	N/A	16 [7.57]	29.9 [760.22]	850 [385]	79%	500
	FAOM-15810S-EC3	1550 [2102] - 1750 [2373]										

SHADED AREAS INDICATE AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ).

1: Oil pump required. **2:** Standard install length. **3:** Dry weight including clutch. **4:** Transmission can be ordered with heavy-duty input bearing (4301417) to allow 500 lb-ft of combined PTO output torque. Note: AutoShift requires appropriate, and Eaton certified, electronic engine. Consult engine OEM for availability.

AutoShift Models		Ib-ft Max TQ [Nm]	Sales Sht. TRSLXXXX	Integral Oil Pump	Thru Shaft PTO	External Oil-to-Water Cooler ¹	External Oil Filter ¹	Oil Cap. Pints [ltr]	Length ² Inches [mm]	Weight ³ Lbs. [kg]	PTO Speed (% of Engine)	Combined PTO Torque (lb-ft)
AS 18	RTLO-14918A-AS3	1450 [1966]	0285	REQ		REQ		28 [13]	33.15 [842.15]	969 [440]	79	350 ⁴
	RTLO-16918A-AS3	1650 [2237]										
	RTLO-18918A-AS3	1850 [2509]										
	RTLO-20918A-AS3	2050 [2779]										
	RTLO-22918A-AS3	2250 [3051]					REQ	500				

SmartAdvantage™ Powertrain

The Smart Way to Get a 3-6% Fuel Economy Advantage.

The new SmartAdvantage Powertrain takes the power of Cummins ISX15 with SmartTorque2 (ST2) and combines it with the smooth shifting of the Fuller Advantage Series Automated (FASA)10-Speed Transmission for improved fuel economy.



AutoShift® Transmissions

Once the vehicle is in motion, an AutoShift transmission operates like an automatic transmission, with the efficiency of a manual transmission. AutoShift 18-speed transmissions are only available in Australia, Mexico and South Africa.



Transmission Heavy-Duty Automated

**Extended
Protection Plans
AVAILABLE**
See page 34 .

Ratios & Steps

Fuller Advantage Series Models	Reverse		Overall Ratio	Forward Gears									
	R2	R1		1	2	3	4	5	6	7	8	9	10
FAOM-14810S-EC3	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
FAOM-15810S-EC3			% Step	39	43	42	26	40	39	43	42	26	

AutoShift Model	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
18A-AS3	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	17	17	18	17	20	17	20	17	17	17	18	17	20	17	22	17	

Model Family	Lbs-Ft Max TQ (Nm)	Max Engine HP	Forward Speed	Max GCW (lbs)	Severe Duty										Construction	Pickup & Delivery	Bus & Coach						
					Linehaul	Heavy Haul	Logging	Mining	Oil Field	Refuse	Agricultural	Off Highway	School Bus	Transit Coach			Recreational						
Heavy Duty																							
Advantage Series (FASA)	1750 (2373)	455**	10	80,000 (36,287)																			
AutoShift 18	2250 (3051)	700	18																				

**Only available with Cummins ISX15 engine.

Transmission Heavy-Duty Manual

Specs, Options & Provisions

9-Speed Models	lb-ft Max TQ [Nm]	Sales Sht. TRSLXXXX	Integral Oil Pump	Thru Shaft PTO	Internal Oil Cooler	External Oil-to-Water Cooler	External Oil Filter	Oil Cap. Pints [ltr]	Length Inches [mm]	Weight Lbs. [kg] ¹	PTO Speed (% of Engine)	Combined PTO Torque (lb-ft)
RT-8608L	860 [1166]	N/A	REQ					27 [13]	28.9 [734]	581 [263]	58	500
RT-8709B		0273									70	
RT-11709H	N/A	583 [264]										
RT-12709H		588 [267]										
RT-13709H		607 [275]										
RT-14709H		29.5 [749]							350 ²			
RTOC-16909A	3349	REQ								28 [13]	33.1 [841]	716 [325]
RTOCM-16909A ³												
RTLOC-16909A-T2 ⁴		REQ							500			
RTOC-18909A												
RTLOC-18909A-T2	1850 [2508]	0109	REQ				27 [13]	28.9 [734]	581 [263]	350 ²		
RTX-11609B	583 [264]											
RTX-12609B	588 [267]											
RTX-13609B	607 [275]											
RTX-14609B	617 [280]											
RTX-16709B	1650 [2237]		REQ					29.5 [749]				

SHADED AREAS INDICATE AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ).

1: Less clutch housing, lubricant, and end yoke. **2:** Transmission can be ordered with heavy-duty input bearing (4301417) to allow 500 lb-ft of combined PTO output torque. **3:** This transmission can be rated at 200 lb-ft of additional torque above the limits in the top 2 ratios only. **4:** 1750 lb-ft. in top three gears only. When converted to a 13-speed, the engine has to be re-rated to no greater than maximum rated transmission torque.

"Convertible" 9/13-Speeds

Operates as a simple 9-Speed transmission, easily converts to a 13-Speed to increase vehicle versatility and resale value. Now available in two torque ratings...1650 lb-ft. and 1850 lb-ft.



**Extended
Protection Plans
AVAILABLE**
See page 34.

Ratios & Steps

9-Speed Models	Reverse		Overall Ratio	Forward Gears											
	L	H		LL	L	1	2	3	4	5	6	7	8	9	
	RT-8608L	17.99		4.70	17.21		17.21	10.23	7.23	5.24	3.83	2.67	1.89	1.37	1.00
			% Step		68	41	38	37	43	41	38	37			
RT-8709B	13.89	3.89	13.29		13.29	9.16	6.53	4.80	3.57	2.56	1.83	1.35	1.00		
			% Step		45	40	36	34	39	40	36	34			
RT-11709H	13.89	3.89	13.29		13.29	9.16	6.53	4.80	3.57	2.56	1.83	1.35	1.00		
RT-12709H															
RT-13709H															
RT-14709H					% Step		45	40	36	34	39	40	37	35	
RTOC-16909A	11.28	2.99	14.38		10.50	7.37	5.21	3.78	2.76	1.95	1.38	1.00	.73		
				% Step		42	42	38	37	41	42	38	37		
RTOCM-16909A ¹				14.38		10.50	7.37	5.21	3.78	2.76	1.95	1.38	1.00	.73	
				% Step		42	42	38	37	41	42	38	37		
RTL0C-16909A-T2				14.38		10.50	7.37	5.21	3.78	2.76	1.95	1.38	1.00	.86	.73
				% Step		42	42	38	37	41	42	38	16	18	
RTOC-18909A				14.38		10.50	7.33	5.21	3.78	2.76	1.95	1.38	1.00	.73	
				% Step		42	41	38	37	41	42	38	16	18	
RTL0C-18909A-T2				14.38		10.50	7.37	5.21	3.78	2.76	1.95	1.38	1.00	.86	.73
				% Step		42	42	38	37	41	42	38	17	17	
RTX-11609B	13.14	3.43	17.21		12.56	7.47	5.28	3.83	2.79	1.95	1.38	1.00	.73		
RTX-12609B															
RTX-13609B				% Step		68	41	38	37	43	41	38	37		
RTX-14609B															
RTX-16709B	13.03	3.43	17.07		12.46	7.41	5.23	3.79	2.77	1.95	1.38	1.00	.73		
			% Step		68	42	38	37	42	42	38	37			

¹: This transmission can be rated at 200 lb-ft of additional torque above the limits in the top 2 ratios only.

Model Family	Lbs-Ft MaxTQ (Nm)	Max Engine HP	Forward Speed	Max GCW (lbs)	Linehaul	Heavy Haul	Severe Duty					Construction	Pickup & Delivery	Bus & Coach			
							Logging	Mining	Oil Field	Refuse	Agricultural			Off Highway	School Bus	Transit Coach	Recreational
Heavy Duty																	
Convertible 9-13	1850 (2509)	600	9, 13														
RT-9 Series	1850 (2509)	600	9														

Transmission Heavy-Duty Manual

Specs, Options & Provisions

Fuller Advantage Series Models	lb-ft Max TQ* [Nm]	Sales Sht. TRSLXXXX	Integral Oil Pump	Thru Shaft PTO	Internal Oil Cooler	External Oil-to-Water Cooler ¹	External Oil Filter ¹	Oil Cap. Pints [ltr]	Length Inches [mm]	Weight Lbs. [kg] ²	PTO Speed (% of Engine)	Combined PTO Torque (lb-ft)
FAO(F) -11810C	1150 [1559]	0303		OPT	N/A	N/A	N/A	16 [11]	29.9 [760.22]	564 [256]	79%	500
FAO(F) -12810C	1250 [1695]											
FAO(F) -13810C	1350 [1830]											
FAO(F) -14810C	1450 [1966]											
FAO(F) -15810C	1550 [2102]											
FAO(F) -16810C	1650 [2237]											
FAOM(F) -14810C	1450 [1966]											
FAOM(F) -15810C	1550 [2102]											
FAOM(F) -16810C	1650 [2237]											

*Max power rating is 455 HP.

10-Speed Models	lb-ft Max TQ [Nm]	Sales Sht. TRSLXXXX	Integral Oil Pump	Thru Shaft PTO	Internal Oil Cooler	External Oil-to-Water Cooler ¹	External Oil Filter ¹	Oil Cap. Pints [ltr]	Length Inches [mm]	Weight Lbs. [kg] ²	PTO Speed (% of Engine)	Combined PTO Torque (lb-ft)
FR-9210B ³	950 [1288]	0261						23.5 [11]	29.93 [760.2]	592 [269]	65	500
FR-11210B ³	1150 [1559]											
FR-12210B ³	1250 [1695]											
FR-13210B ³	1350 [1830]											
FR-14210B ³	1450 [1966]											
FR-15210B ³	1550 [2102]											
FRM-15210B ⁴	1550 [2102]											
FRW-15210B ⁶	1550 [2102]											
FRO-11210B ³	1150 [1559]											
FRO-12210B ³	1250 [1695]											
FRO-13210B ³	1350 [1830]											
FRO-14210B ³	1450 [1966]											
FRO-15210B ³	1550 [2102]											
FRO-16210B ³	1650 [2237]											
FRO-11210C ³	1150 [1559]											
FRO-12210C ³	1250 [1695]											
FRO-13210C ³	1350 [1830]											
FRO-14210C ³	1450 [1966]											
FRO-15210C ³	1550 [2102]											
FRO-16210C ³	1650 [2237]											
FRO-17210C ³	1750 [2373]											
FRO-18210C	1850 [2508]											
RT-8908LL	860 [1166]	0116		OPT ⁵				28 [13]	33.1 [841]	690 [313]	70	500
RTO-11908LL	1150 [1559]											
RTO-14908LL	1450 [1966]											
RTO-16908LL	1650 [2237]											

SHADED AREAS INDICATE AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ).

1: Oil pump required. **2:** Less clutch housing, lubricant, and end yoke. **3:** These (950 lb-ft. - 1750 lb-ft.) transmissions can be rated at an additional 100 lb-ft. torque [xxx Nm] above the stated limit in the top two gears only. **4:** This (950 lb-ft. - 1750 lb-ft.) transmission can be rated at an additional 200 lb-ft. torque [271 Nm] above the stated limit in the top two gears only. **5:** Two Thru-shaft PTO provisions available. **6:** FRW – Fuller Roadranger Twin Countershaft without Cooler. **Note:** Pump standard for external coolers only – not required for internal coolers. Aux C/S pump available through aftermarket.

Fuller Advantage 10-Speed

The Fuller Advantage 10-speed transmission, the first new Eaton manual transmission design in over a decade, offers you the most efficient performing heavy-duty manual transmission available. Precision lubrication technology reduces oil churning losses and eliminates the need for a cooler in most applications...reduces weight and increases reliability.



Deep Reduction Transmissions

Deep Reduction 8LL and 9ALL transmissions have 8 forward speeds, 2 low speeds and 3 reverse speeds to provide versatility in on-off highway applications and demanding on-highway duty, with engines up to 1650 lb-ft. [2237 Nm].



Transmission Heavy-Duty Manual

Ratios & Steps

**Extended
Protection Plans
AVAILABLE**
See page 34.

Fuller Advantage Series Models	Reverse		Overall Ratio	Forward Gears											
	R2	R1		1	2	3	4	5	6	7	8	9	10		
FAO(F) -11810C	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) -12810C															
FAO(F) -13810C															
FAO(F) -14810C															
FAO(F) -15810C															
FAO(F) -16810C															
FAOM(F) -14810C															
FAOM(F) -15810C															
FAOM(F) -16810C			% Step	38	37	38	34	37	38	37	38	37			

10-Speed Models	Reverse			Overall Ratio	Forward Gears											
	LL	L	H		LL	L	1	2	3	4	5	6	7	8	9	10
FR-9210B	16.21	L	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-11210B																
FR-12210B																
FR-13210B																
FR-14210B																
FR-15210B																
FRM-15210B																
FRW-15210B						% Step			35	35	35	34	35	35	35	35
FRO-11210B	12.12	L	2.72	14.75			11.06	8.19	6.05	4.46	3.34	2.48	1.83	1.36	1.00	.75
FRO-12210B																
FRO-13210B																
FRO-14210B																
FRO-15210B																
FRO-16210B						% Step			35	35	35	34	35	35	35	35
FRO-11210C	13.75	L	2.80	17.15			12.69	9.29	6.75	4.90	3.62	2.59	1.90	1.38	1.00	.74
FRO-12210C																
FRO-13210C																
FRO-14210C																
FRO-15210C																
FRO-16210C						% Step			37	38	38	35	40	37	38	38
FRO-17210C	13.75	L	2.80	17.49			12.94	9.29	6.75	4.90	3.62	2.64	1.90	1.38	1.00	.74
FRO-18210C						% Step			39	38	38	35	37	39	38	38
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-11908LL	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	.74		
RTO-14908LL																
RTO-16908LL						% Step	55	51	35	36	34	38	35	36	34	

Model Family	Lbs-Ft MaxTQ (Nm)	Max Engine HP	Forward Speed	Max GCW (lbs)	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
							Logging	Mining	Oil Field	Refuse	Agricultural	Off Highway			School Bus	Transit Coach	Recreational
Heavy Duty																	
Advantage Series (FASM)	1650 (2237)	455	10	80,000 (36,287)													
FR Series	1850 (2509)	600	10														
8LL	1650 (2237)	600	8+2 Low														

Specs, Options & Provisions

	Models	lb-ft Max TQ [Nm]	Sales Sht. TRSLXXXX	Integral Oil Pump	Thru Shaft PTO	Internal Oil Cooler	External Oil-to-Water Cooler ¹	External Oil Filter ¹	Oil Cap. Pints [ltr]	Length Inches [mm]	Weight Lbs. [kg] ²	PTO Speed (% of Engine)	Combined PTO Torque (lb-ft)
11-Speeds	RTO-11909ALL	1150 [1559]	0253						28 [13]	33.15 [842]	671 [304]	79	500
	RTO-14909ALL	1450 [1966]											
	RTO-16909ALL	1650 [2237]		REQ									
13-Speeds	RTLO-12913A	1250 [1695]	0249						28 [13]	33.1 [841]	714 [324]	79	350 ³
	RTLO-14913A	1450 [1966]											
	RTLO-16913A	1650 [2237]		REQ									
	RTLO-18913A	1850 [2508]											
	RTLO-20913A	2050 [2779]					REQ						
15-Speeds	RT-14915	1250 [1695]	0215						28 [13]	33.1 [841]	696 [316]	70	500
	RTO-14915	1450 [1966]		REQ				89					
	RTO-16915	1650 [2237]											
18-Speeds	RTLO-14918B	1450 [1966]	0250						28 [13]	33.1 [841]	716 [325]	79	350 ³
	RTLO-16918B	1650 [2237]		REQ									
	RTLO-18918B	1850 [2509]											
	RTLO-20918B	2050 [2780]											
	RTLO-22918B	2250 [3051]					REQ	500					

SHADED AREAS INDICATE AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ).

1: Oil pump required. **2:** Less clutch housing, lubricant, and end yoke. **3:** Transmission can be ordered with heavy-duty input bearing (4301417) to allow 500 lb-ft of combined PTO output torque.

Model Family	Lbs-Ft Max TQ (Nm)	Max Engine HP	Forward Speed	Max GCW (lbs)	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach		
							Logging	Mining	Oil Field	Refuse	Agricultural	Off Highway			School Bus	Transit Coach	Recreational
Heavy Duty																	
Super 18	2250 (3051)	700	18														
15-Speed	1650 (2237)	600	15														
Super 13	2050 (2780)	700	13														
9 ALL	1650 (2237)	600	9+2 Low														

Low-Inertia "Super 13" and "Super 18" Transmissions

The "Super 13" features the patented low-inertia design concept that makes shifting smoother, faster and easier. The "Super 18" has 18 forward and 4 reverse gears, a 19.7 to 1 overall reduction and a 14.40 low gear for unbeatable versatility. Two overdrive ratios...0.73 and 0.86... provide efficient cruise RPM's and economical performance.



Transmission Heavy-Duty Manual

**Extended
Protection Plans
AVAILABLE**
See page 34.

Ratios & Steps

11-Speed Models	Reverse			Overall Ratio	Forward Gears												
	LL	L	H		LL1	L	LL2	1	2	3	4	5	6	7	8		
RTO-11909ALL	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	.73		
RTO-14909ALL																	
RTO-16909ALL				% Step	60	38	60	42	38	37	42	42	38	37			

13-Speed Models	Reverse		Overall Ratio	Forward Gears														
	LL	H		LL	L	1	2	3	4	5	6	7	8	9	10	11	12	
RTLO-12913A	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-14913A																		
RTLO-16913A			% Step	42	42	38	37	41	17	21	17	18	17	17	17	17		
RTLO-18913A	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	
RTLO-20913A																		
			% Step	43	41	38	37	42	17	20	17	18	17	17	17	17		

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-14915	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
RTO-16915				% Step	31	29	30	27	39	31	29	30	27	28	30	30	30	27	

18-Speed Models	Reverse				Overall Ratio	Forward Gears																					
	R1	R2	R3	R4		LL	L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
RTLO-14918B	15.06	12.85	4.03	3.43	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	1.17	1.00	0.86	0.73				
RTLO-16918B					% Step	17	44	17	21	17	18	17	17	17	17	17	19	17	20	17	18	17	17	17			
RTLO-18918B																											
RTLO-20918B					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	1.17	1.00	0.86	0.73				
RTLO-22918B					% Step	17	44	17	20	17	18	17	17	17	17	17	17	20	17	20	17	18	17	17	17		

Transmission

Medium-Duty Automated

Medium-Duty Manual

UltraShift® HV (Highway Value) Transmission

The UltraShift HV features a lower total cost of ownership and better serviceability than any other transmission. Depending on your application, the UltraShift HV could save you up to \$2,379 per truck, per year. With no scheduled maintenance for 500,000 miles [800,000 km] and up to 19% better fuel economy* vs. a torque-converter automatic, it's clear that UltraShift is "automatically the best."

**Results are based upon tests conducted by an independent firm in accordance with SAE J1526 "Joint TMC/SAE Fuel Consumption In-Service Test Procedure, Type III." Assumes 30,000 miles per year in an urban setting, with fuel priced at \$4.30 / gallon. Service and maintenance costs include 5 year predicted average clutch life and associated cost of parts and labor. Your results may vary.*



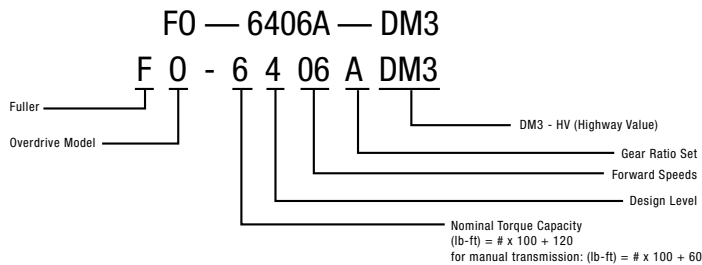
An Eaton Green Solution

Fuller® Medium-Duty 6-Speeds

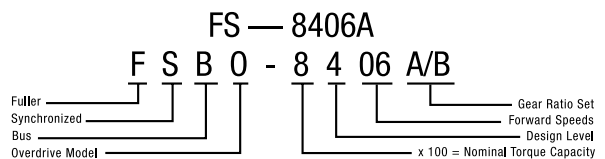
Eaton "Synchro-6" transmissions are synchronized in all gears, with reduced shift stroke and patented "low-force" synchronizer technology to deliver faster, easier shifting.



Automated Nomenclature



Manual Nomenclature



Transmission Medium-Duty General Information

Clutch Housing Weights

Model Series	SAE NO.2				SAE NO.3			
	Housing Type	Housing Depth in. [mm]	Aluminum lbs. [kg]	Iron lbs. [kg]	Housing Type	Housing Depth in. [mm]	Aluminum lbs. [kg]	Iron lbs. [kg]
FS Series 5206, 6205, 6305, 5406, 6406, 8406	Standard	4.75 [120.7mm]	13 [6]	47 [21]	Standard	N/A	N/A	N/A
		6.625 [168mm]*	17 [8]	60 [27]				

* Standard for all FS Series transmissions is 6.625 in SAE No. 2 aluminum clutch housing.

Hydraulic Clutch Release Options

Model Series	SAE NO.2			SAE NO.3		
	Housing Type	Aluminum lbs. [kg]	Iron lbs. [kg]	Housing Type	Aluminum lbs. [kg]	Iron lbs. [kg]
FS Series 5206, 6205, 6305, 5406, 6406, 8406	Standard		N/A	Standard	N/A	N/A
	Nodal	N/A		Nodal		

Note: Medium Duty aluminum hydraulic clutch housing weight is 21 lbs. without clutch release components.

Power Take-Off (PTO) Specifications

Model	Right Side	Left Side	Rear-Mount
FS-6205A/6305A	6 Bolt, 39 Tooth, 6.35 Pitch, 22° R.H. Helix		26 Tooth, 45°
FS-6205B/6305B	6 Bolt, 41 Tooth, 6.5 Pitch, 23° R.H. Helix		
FS-5406/6406A	6 Bolt, 38 Tooth, 6.35 Pitch, 22° R.H. Helix		
FSB-5406B/6406B	6 Bolt, 38 Tooth, 6.35 Pitch, 22° R.H. Helix		
F50-6406A/8406A	6 Bolt, 48 Tooth, 7.00 Pitch, 26° R.H. Helix		
F-5405B-DM3 F/O-6406B-DM3	6 Bolt, 48 Tooth, 7.00 Pitch, 26° R.H. Helix	With kit available to switch from left to right	

* Rear mount (extended countershaft) PTO provision is available. See PTO information guide TRIG2600 for more details. All medium-duty transmissions have a combined PTO output limit of 500 lb-ft.

Transmission Medium-Duty Automated

**Extended
Protection Plans
AVAILABLE**
See page 36.

Specs, Options & Provisions

	Model	Ib-ft Max TQ [Nm]	Sales Sht. TRSLXXXX	Extended C/S PTO Provision	Oil Cap. Pints [ltr]	Length Inches [mm]	Weight Lbs. [kg]	PTO Speed (% of Engine)
UltraShift HV 6-Speed STD Model	FO-5406B-DM3	620 [840]	0315	REQ	20.75 [10]	25.6 [650]	391 [177]	67
	FO-6406B-DM3	660 [895]						
Park Pawl	FO-5506B-DM3*	620 [840]						
	FO-6506B-DM3*	660 [895]						
UltraShift HV 5-Speed STD Model	F-5405B-DM3	620 [840]						
	F-6405B-DM3	660 [895]						
Park Pawl	F-5505B-DM3**	620 [840]						
	F-6505B-DM3**	660 [895]						

* The park pawl feature is rated at 33,000 lbs. maximum on these models. ** The park pawl feature is rated at 26,000 lbs. maximum on these models.

SHADED AREA INDICATES AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ).

Ratios

	Model	Reverse	Overall Ratio	Forward Gears					
		R		1	2	3	4	5	6
UltraShift HV 6-Speed STD Model	FO-5406B-DM3	6.27	8.40	6.55	4.13	2.52	1.59	1.00	0.78
	FO-6406B-DM3								
Park Pawl	FO-5506B-DM3*	6.27	8.40	6.55	4.13	2.52	1.59	1.00	0.78
	FO-6506B-DM3*								
UltraShift HV 5-Speed STD Model	F-5405B-DM3	6.27	8.40	6.55	4.13	2.52	1.59	1.00	0.78
	F-6405B-DM3								
Park Pawl	F-5505B-DM3**	6.27	8.40	6.55	4.13	2.52	1.59	1.00	0.78
	F-6505B-DM3**								

UltraShift® HV (Highway Value) Transmission

The UltraShift HV features a lower total cost of ownership and better serviceability than any other transmission. Depending on your application, the UltraShift HV could save you up to \$2,379 per truck, per year. With no scheduled maintenance for 500,000 miles [800,000 km] and up to 19% better fuel economy* vs. a torque-converter automatic, it's clear that UltraShift is "automatically the best."

*Results are based upon tests conducted by an independent firm in accordance with SAE J1526 "Joint TMC/SAE Fuel Consumption In-Service Test Procedure, Type III." Assumes 30,000 miles per year in an urban setting, with fuel priced at \$4.30 / gallon. Service and maintenance costs include 5 year predicted average clutch life and associated cost of parts and labor. Your results may vary.



Transmission Medium-Duty Manual

Fuller® Medium-Duty Transmission Specifications

Model	Sales Sht. TRSL XXXX	Ib-ft Max TQ	Overall	Rev.	1	%	2	%	3	%	4	%	5	%	6	Neutral Switch Provision	Oil Cap. Pints [ltr]	Length* Inches [mm]	Weight** Lbs. [kg]	PTO Speed (% of Engine)	
FS-6305A	0191	660 [895 Nm]	7.22	7.22	7.22	86	3.89	75	2.22	60	1.39	39	1				19.5 [9]	25.6 [650]	369 [167]	46	
FS-6305B		660 [895 Nm]	7.22	7.22	7.22	86	3.89	75	2.22	75	1.27	27	1				19.5 [9]	25.6 [650]	369 [167]	46	
FS-5406A		560 [759 Nm]	9.01	8.63	9.01	71	5.27	64	3.22	58	2.04	49	1.36	36	1			19.5 [9]	25.6 [650]	359 [163]	52
FS-6406A		660 [895 Nm]	9.01	8.63	9.01	71	5.27	64	3.22	58	2.04	49	1.36	36	1			19.5 [9]	25.6 [650]	359 [163]	52
FSD-6406A		660 [895 Nm]	9.04	6.75	7.05	71	4.13	64	2.52	58	1.59	59	1	28	0.78			19.5 [9]	25.6 [650]	359 [163]	68
FSD-8406A		860 [1166 Nm]	9.04	6.75	7.05	71	4.13	64	2.52	58	1.59	59	1	28	0.78			19.5 [9]	25.6 [650]	359 [163]	68
FSB-5406B		N/A	560 [759 Nm]	8.03	7.70	8.03	59	5.06	64	3.09	58	1.95	49	1.31	31	1			19.5 [9]	25.6 [650]	359 [163]
FSB-6406B	660 [895 Nm]		8.03	7.70	8.03	59	5.06	64	3.09	58	1.95	49	1.31	31	1			19.5 [9]	25.6 [650]	359 [163]	52

* Length is from front face of clutch housing to front bottoming surface of yoke or companion flange. SAE NO. 2 (6.625" [168.3 mm] depth).

** With SAE NO. 2 Aluminum clutch housing, standard controls, less clutch release components and shift tower. Dry weight.

Given weights are without clutch and lube.

Model Family	Lbs-Ft Max T Q(Nm)	Max Engine HP	Forward Speed	Max GCW (lbs)	Linehaul	Heavy Haul	Severe Duty						Construction	Pickup & Delivery	Bus & Coach			
							Logging	Mining	Oil Field	Refuse	Agricultural	Off Highway			School Bus	Transit Coach	Recreational	
Medium Duty																		
UltraShift HV	660 (895)		5, 6	33,000* [14969kg]														
5- & 6-Speed	860 (1166)		5, 6															

*Approved to 55,000 lbs. [24948 kg] in diminishing load applications.



Fuller® Medium-Duty 6-Speeds

Eaton "Synchro-6" transmissions are synchronized in all gears, with reduced shift stroke and patented "low-force" synchronizer technology to deliver faster, easier shifting.

Longer wearing synchronizer material reduces synchronizer replacements — Up to \$1,300* in potential cost savings!

**Savings are based on 6 years/200,000 miles [320,000 km] of service. Your results may vary.*

Clutch General Information



Only Advantage Series clutches offer the performance, reliability and protection to stay productive and profitable.

Key features include:

- 50,000-mile [80467 km] standard lubrication internal for linehaul applications
- Patent-pending release bearing provides increased lubrication and improved strength to extend the life of the clutch.
- Improved steel-backed bushings resist wear for increased service life.
- Premium damper from Eaton reduces the drivetrain torsionals and meet the long life expectations of vehicle OEMs.
- Proprietary facing material to provide longer disc facing life.

In addition, an entirely new bearing housing design improves reliability while decreasing maintenance.

Solo Advantage Benefits:

- Solo technology keeps the clutch in constant adjustment by maintaining bearing release position.
- Features an easy-to-see wear indicator.
- A full-round contamination baffle protects against debris.
- Stainless steel cam spring delivers increased durability and long life.
- Exclusive Vibration Control Technology Plus dampers significantly reduce severe vibration and quiet neutral gear idle rattle.
- Eliminates 13 manual adjustments for every truck, on average.

Easy Pedal Advantage Benefits:

- Kwik-Adjust and proven Powerthread™ technology simplifies clutch adjustment.
- Adjusting requires approximately half the movement of standard adjusting rings.
- Interchangeable with all current twin plate models.
- Positive separator pin assures equal plate separation, smoother engagement and cooler operation.

Enhanced Features of the New Bearing Housing Design:

New Casting Design

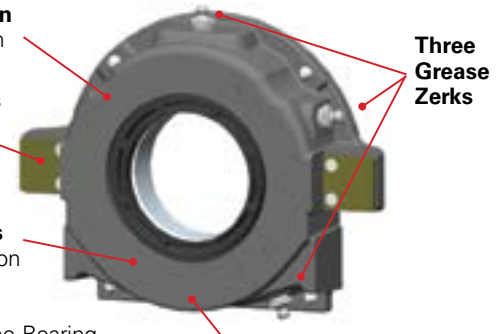
- Improved Strength

Wider Thrust Plates

- Increased Contact Area with Release Fork

Composite Slings

- Keep Contamination Out
- Keep Grease In
- More Grease to the Bearing



More Efficient Grease Reservoir

- Extended Grease Interval
- More Grease in Bearing for Longer Life

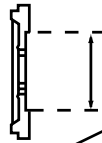
Clutch Heavy-Duty Clutch Selector

Extended Protection Plans AVAILABLE
See page 35.

1 Solo self-adjusting clutches are recommended for trucks with hydraulic linkages to reduce the risk of driveline damage.

2 Choose size of your cast two-plate heavy-duty clutch.
Note: All spline diameters are 2".

3 Determine fly wheel bore opening and select number of springs.



4 Choose clutch torque. Rating in chart must be equal to or exceed torque rating.

								Original Equipment Specifications				
15.5 Inch	Spline Diameter and No. of Splines	Flywheel Bore Opening	Number of Springs	Clutch Torque lb-ft (must exceed engine torque)	Disc Type	Facing	Weight Each*	Solo Advantage®	Solo Advantage with Pre-Damper	Easy Pedal Advantage®	Easy Pedal Advantage with Pre-Damper	
15.5 Inch	2" - 10	7"	8	1070	DOF-CO-FT	Organic	150					
				1250	DOF-CO-FT	Organic	150					
				1400	DCF-CO-FT	4	150					
		8.5"		10	1650	DOF-CO-FT	Organic	150				
					1650	DCF-CO-FT	4	150				
					1650	DCF-CO	4	150	209701-51		208925-51	
	10"	9 (Mack and Volvo 11L & 13L)	7	1760	DCF-CO	4	150	209701-61		208925-61		
				1650	DCF-CO	6	150	209701-91		208925-91		
				1760	DCF-CO	6	150	209701-92		208925-92		
				1700	DCF-FT	4	150	209701-14	209701-34	208925-14	208925-34	
		7	7	7	1450	DCF	4	150	209701-80		208925-80	
					1650	DCF-OVC	4	150	209701-87		208925-87	
					1650	DCF-OVC	6	150	209701-88		208925-88	
					1700	DCF	4	150	209701-82	209701-34	208925-82	208925-34
							6	150	209701-85	209701-29	208925-85	208925-29
					1750	DCF-VCTplus	4	150	209701-24	209701-34	208925-24	208925-34
					1760	DCF-VCTplus	6	150		209701-29	208925-19	208925-29
					1860	DCF-VCTplus	6	150	209701-20	209701-30	208925-20	208925-30
					1860	DCF-CO	6	150				
					2050	DCF-CO	6	150				
2050	DCF-VCTplus	6	150	209701-25	209701-35	208925-25	208925-35					
2" - 14	10"	7	2250	DCF-VCTplus	6	150	209708-32	209708-42	208937-32	208937-42		
14 Inch	2" - 10	7"	None	1000	ROF	Organic	110					
			8	1000	DCF-CO-FT	3	110			108034-61B		
				1150	DOF-CO-FT	Organic	110	N/A		108034-82B		
				1400	DOF-CO-FT	Organic	110			108050-59B		
				1400	DCF-CO-FT-SD	4	110					

*Estimated Shipping Weight

5 Narrow clutch choice based on options. All part numbers in row meet your specs.

Disc Type: **D** **CF** **CO**
D = Dampened
CF = Ceramic Facing
OF = Organic Facing
CO = Coaxial
FT = Free Travel
SD = Super Duty
VCT PLUS® = Vibration Control Technology
OVC = Optimized Vibration Control

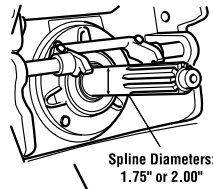
- 6 Advantage Series:**
- Original Equipment Specification
 - 2-year / unlimited mile warranty (Solo and Easy Pedal Advantage – Aftermarket)
 - 3-year / 350,000 mile [563,270 km] warranty (Solo Advantage – Production Linehaul)
 - 2-year / 200,000 mile [321,869 km] warranty (Easy Pedal Advantage – Production Linehaul)
 - 50,000-mile [80,467 km] lube interval

Clutch Medium-Duty Clutch Selector

**Extended
Protection Plans
AVAILABLE**
See page 35.

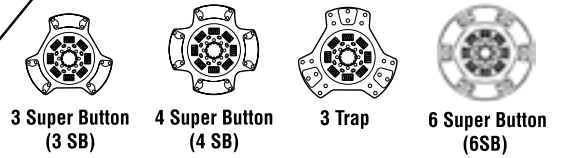
1 Choose linkage stroke. Refer to OEM for Stroke/Bearing Travel capabilities: Application Guide Eaton CLSL1276.

2 Choose spline diameter size and number of discs.



3 Choose clutch torque. Rating in chart must be equal to or exceed torque rating.

4 Choose damper type.



		New						
Standard Stroke .500" to .560" Bearing Travel	Spline Diameter and No. of Splines	Number of Discs	Clutch Torque <i>must equal or exceed engine torque</i>	Damper Type	Solo Standard	Solo® Standard Severe Service*	Manual Adjustment New	Manual Adjustment Severe Service*
	1.75" – 10	1		Free Travel	109400-5 (3 SB)	N/A	107683-5 (3 SB)	N/A
	1.75" – 10	2**	800	7 + 1	N/A	N/A	N/A	N/A
			860	7 + 1	109500-10 (3 Trap)	109500-22 (3 SB)	107237-10 (3 Trap)	107237-22 (3 SB)
	2.0" – 10	2**	860	7 + 1	109504-12 (3 SB)	N/A	107342-12 (3 SB)	N/A
			1000	7 + 1	109504-24 (4 SB)	N/A	107342-24 (4 SB)	N/A
Short Stroke .410" to .470" Bearing Travel	Spline Diameter and No. of Splines	Number of Discs	Clutch Torque <i>must equal or exceed engine torque</i>	Damper Type	Solo Short Stroke	Solo® Standard Severe Service*	Manual Adjustment New	Manual Adjustment Severe Service*
	1.75" – 10	1	620	Free Travel	109404-5 (3 SB)	N/A	N/A	N/A
	1.75" – 10	2**	860	7 + 1	109503-10 (3 Trap)	N/A	N/A	N/A

* **Severe Service:** A combination of higher plate load, super buttons, or an additional number of facings.

** **Two Plate Clutches:** Fits in place of single plate (pull type), however, this increases inertia to the transmission and may affect shiftability and longevity.

*United States and Canada only.

Please refer to the Roadranger Warranty Guide TCWY0900 for the latest warranty

Fleet & Vehicle Management Diagnostic Tools Driveline Vibration Analyzer

Are you dealing with excessive labor charges and unnecessary part changes every time you try to fix a vibration problem? Eaton's Basic Driveline Vibration Analyzer is designed specifically for use by technicians on the shop floor. The DVA Basic will pinpoint the root cause of a vibration, isolate the location of the problem, and will finally supply a suggested repair procedure to fix it. Increase your technician's efficiency, reduce vehicle downtime, and minimize part-swapping!



Features

- Easy to use – isolate complex vibration problems in just minutes!
- Select the correct driveline configuration from a drop-down list for more accurate diagnosis.
- Color-coded results allow technicians to easily pick out the vibration source.
- Comes with suggested repair procedures to help the technician correct the problem.
- Software includes sensor inputs for signal verification and data accuracy.
- Save data to your computer or email it to experts for further analysis.
- Create and print reports for customer review.

The layout of the data input screen mimics the format of a repair order for easy data entry. The Basic Driveline Vibration Analyzer includes a function that automatically determines the number of flywheel teeth — there's no need to manually count them! A detailed explanation of the vibration complaint and file information can be included in the comment section of the screen for quick association with test conditions.

The Basic Driveline Vibration Analyzer generates speed readouts that can be checked against the vehicle's gauges and a "Speed Stable" indicator to help ensure data accuracy. The Basic DVA's fundamental frequency chart provides color-coded indicators for quick vibration isolation. The software's data file collection capability allows users to easily save and send data to vibration experts for further review if required.

System Requirements

Minimum configuration:

- IBM PC-compatible computer – Pentium III or equivalent, 1Ghz or higher
- 256 MB of RAM
- 1024 x 768 screen resolution
- CD-ROM drive
- 400 MB of free space on hard drive
- Operates on Windows 2000, XP and NT

Kit Includes:

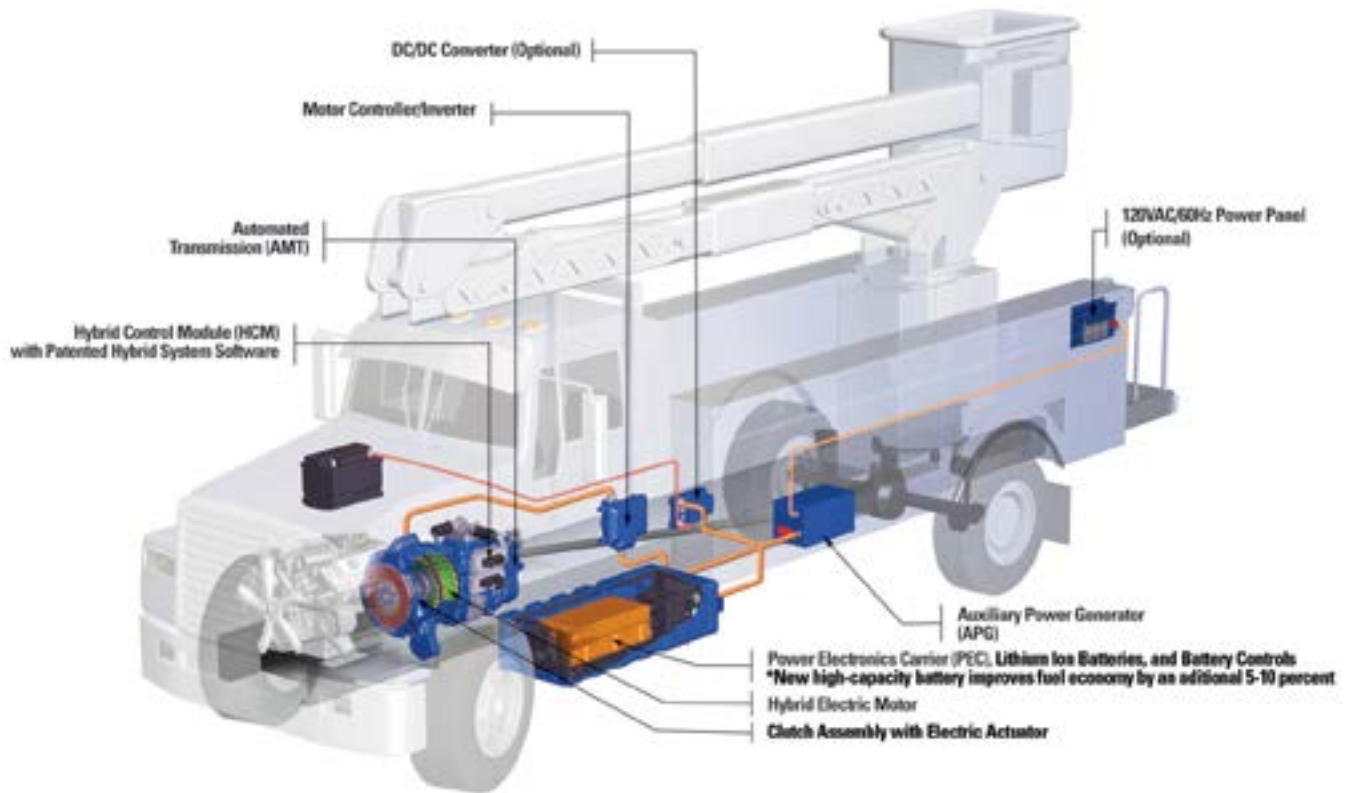
- Software CD
- PC Card
- Signal Conditioner
- Accelerometer
- 3/4" Tap
- Speedometer Sensor
- 6 Speedometer Pickup Adapter Cables
- 2 Gray Speed Cables
- 1 Data Cable
- Flywheel Sensor
- Carrying Case

Driveline Vibration Analysis tools and services can be purchased at these distributors:

Truck Vibration Technology
269-743-9372

K-Line Industries Inc.
www.klineind.com
K-Line customer service:
1-800-824-K-LINE (5546) or
1-616-396-3564
Fax: 1-800-528-9138 or
1-616-396-8974
Email: cservice@klineind.com

Hybrid Power Medium-Duty Hybrid Electric System



The Eaton Hybrid Electric Power System

Eaton's medium-duty Hybrid Electric Power System uses an automated transmission with a parallel hybrid system. It incorporates an electric motor/generator located between the output of an automated clutch and input of the transmission. Using Eaton's patented hybrid solutions, the system recovers and stores energy normally lost during braking into batteries. When electric torque is blended with engine torque, the stored energy is used to improve fuel economy and vehicle performance for a given speed, or operate with electric power only...and provides energy for use during engine-off worksite operations.

A low profile hybrid transmission that utilizes a t-handle shifter (OEM content) with park pawl is available for applications requiring the reduced height for low floor applications and a mechanical park mechanism for hydraulic brake applications.

Eaton's medium-duty Hybrid Electric System base system is designed to support typical city delivery applications and includes:

- Hybrid drive unit
- Power electronics carrier (battery system)
- Push button shift console
- Automated clutch control

For applications that require engine off, ePTO capability (such as utility applications), the additional content includes:

- DC/DC converter
- PTO vocational software
- Push button shift console (to support engine off requirements)

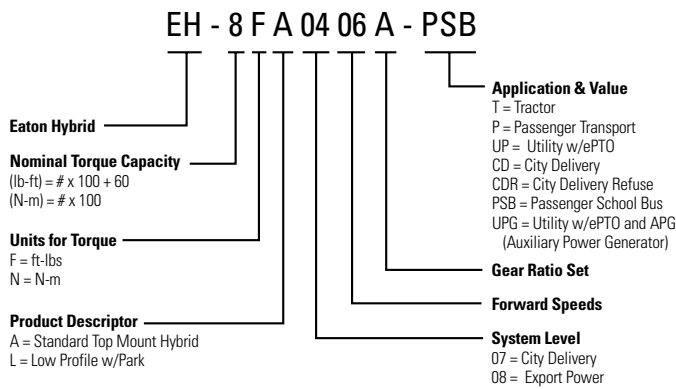
Content may vary by application. For specific details on content and applications, consult your Roadranger representative.



An Eaton Green Solution

Hybrid Power Medium-Duty Hybrid Electric System

Medium-Duty Nomenclature



Application & Value	Model Number	ePTO (Electronic Power Takeoff)	Engine Off at Stop	Hill Start Assist	Shiftable Park	DC to DC
City Delivery -Low Profile	EH-6FL0706B-CD					
City Delivery	EH-8FA0706A-CD					
City Delivery - Refuse	EH-8FA0706A-CDR					
Utility	EH-8FA0806A-UP					
Utility with ePTO and APG	EH-8FA0806A-UPG					
Underground Utility Truck	EH-6FL0806B-UPG					
Diminishing Load Tractor	EH-8FA0706A-T					
Passenger Transport	EH-8FA0706A-P					
Passenger School Bus	EH-8FA0406A-PSB					

SHADED AREAS INDICATE AVAILABLE OPTION, UNLESS INDICATED AS REQUIRED (REQ).

Hybrid Power Medium-Duty Hybrid Electric System

**Extended
Protection Plans
AVAILABLE**
See page 36.

Specs, Options & Provisions

Application	Model	Sales Sht. TRSLXXXX	Extended C/S PTO Provision	Oil Cap. Pints [ltr]	Length Inches [mm]	System Weight* Lbs. [kg]	PTO Speed (% of Engine)
Medium-Duty Delivery	EH-8FA0706A-CD	5002	STD	19.5 [9]	33.4 [848]	940 [426]	67
Medium-Duty Utility, Telecom and Municipal Applications	EH-8FA0806A-UP, EH-8FA0806A-UPG	5001					
Medium-Duty Shuttle Bus	EH-8FA0706A-P	5005					
Diminishing Load Tractor	EH-8FA0706A-T	5002					
City Delivery Refuse	EH-8FA0706A-CDR			20 [9.46], 19.5 [9]			
School Bus	EH-8FA0406A-PSB	5010					
Medium-Duty Step Van	EH-6FL0706B-CD	5007		20 [9.46]			
Underground Utility Truck	EH-6FL0806B-UPG	5011				969 [440]	

Transmission: Proven, Eaton Medium-Duty Automated Manual Transmission
Clutch Housing: SAE #2 aluminum
Electric Motor: 44 kW Peak / 26 kW Continuous
Battery System: Nominal 340 VDC / Lithium Ion

* Includes the hybrid drive unit, clutch, batteries, high voltage cables and associated hardware. Does not include the auxiliary power unit.

Ratios & Steps

Model	lb-ft Max TQ [Nm]	Overall	Reverse	1	%	2	%	3	%	4	%	5	%	6
EH-8FA0706A-CD	860 [1166]	9.04	6.75	7.05	71	4.13	64	2.52	58	1.59	59	1.00	28	.78
EH-8FA0806A-UP, EH-8FA0806A-UPG														
EH-8FA0706A-P														
EH-8FA0706A-T														
EH-8FA0706A-CDR														
EH-8FA0406A-PSB														
EH-6FL0706B-CD	660 [895]	8.39	6.27	6.55	59									

Content may vary by application. For specific details on content and applications, consult your Roadranger representative.



Service & Support Roadranger® Extended Protection Plans

Coverage for Peace of Mind

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.

Comprehensive Coverage

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.

You're Covered Everywhere

With our Extended Protection Plans, you are never far from parts and service, with over 3,500 authorized dealers in the U.S. and Canada.

You Can Even Get Extended Protection for Used Trucks

Buying or selling a used truck? Keeping a used truck longer? We've got you covered. Coverage is available up to 7 years and 850,000 miles. And Eaton backs the electronics/automation components as well as the mechanical parts. More details on page 38.

How to Order...The Process Is Simple

- Simply log on to roadranger.com/epp and select Extended Protection Plans.
- Click "Order Online" to access the interactive Roadranger Warranty Assistant. It will assist you in selecting the right coverage.
- You will receive an invoice for the coverage. Once payment is received, a confirmation of your coverage will be sent, and you are covered.
- Alternatively, you can use the mail-in order form available on the website and send via email, fax or regular mail.

Benefits

1. Full Warranty Protection
Full parts and labor on warrantable failures.
2. Service Available at All OEM Dealer Facilities
3. Genuine Parts
All replacement parts will be genuine Eaton parts, so you know your repaired vehicle will have the same outstanding quality it had when it was first purchased.
4. Simple Payment Options
You can purchase a Roadranger Extended Protection Plan by rolling it into the financing of your new vehicle, or simply order online. Peace of mind has never been easier to obtain.
5. Protection from Cost Inflation
Your Extended Protection Plan covers all repairs to your vehicle's drivetrain, regardless of increases in parts or labor that are certain to occur over time. One simple payment now can save you substantial repair charges in the future.
6. Enhanced Resale Value
Repairing your vehicle with genuine Eaton parts increases its resale value. Plus, your coverage is transferable, further enhancing your resale value.

Frequently Asked Questions

How do I order?

Simply log on to roadranger.com/epp and select Extended Protection Plans. Click "Order Online" to access the interactive Roadranger Warranty Assistant.

How long do I have to purchase the Extended Protection Plans?

The Roadranger Extended Protection Plans may be purchased anytime during the standard warranty period. After one or two years in service, additional fees are required, depending on the product.

Do I need to use Roadranger lube to be covered by Roadranger?

Use of Roadranger lubrication or fluid meeting the Eaton Transmission Specification PS 164 Rev. 7 is required to be covered by Roadranger Extended Protection Plans.

What should I do if my vehicle needs repair?

Repair can be made by an authorized OEM dealer with the claim processed directly to Eaton.

What is covered?

Extended Protection Plans cover the same component parts as the original OEM warranty.

What's new? I already have warranty protection.

Reality is, most truck operators today keep their vehicles beyond the original warranty period. The Extended Protection Plans give you, the owner, extra protection for the critical drivetrain components.

**Help the environment and save precious time.
Order online! www.roadranger.com/epp**

Heavy-Duty Manual Transmission

Vocation	Approved Models	Transmission Torque	Standard Warranty (Yr/Mi 000) ²	Additional Coverage Years/Miles (000)					
				Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Linehaul	9, 10	1750 lbs.ft. and below	5/750 (1200km)	N/A	N/A	N/A	N/A	N/A	N/A
		1850 lbs.ft. and above	5/500 (800km)	0/100 (160km)	\$200	0/250 (400km)	\$400	N/A	N/A
	Convertible (9-Speed) ¹	All	5/500 (800km)	0/100 (160km)	\$200	0/250 (400km)	\$400	N/A	N/A
	13, 15, 18, 9ALL, 8LL, Convertible (13-Sp. prior to 3/300)	1750 lbs.ft. and below	3/300 (480km)	1/100 (160km)	\$255	2/200 (320km)	\$425	2/450 (720km)	\$575
		1850 lbs.ft. and above			\$435		\$725		\$965
	Convertible 13-Sp 3/300 to 5/500	1750 lbs.ft. and below	Note 1	1/100 (160km)	\$385	2/200 (320km)	\$560	N/A	N/A
1850 lbs.ft. and above		\$545			\$790				
Standard Duty Construction, Pick up & Delivery, Transit Coach, School Bus, Recreational Vehicle, Fire Service, Rescue Vehicle	All	1750 lbs.ft. and below	3/U	1/U	2/U	\$385	N/A	N/A	
		1850 lbs.ft. and above				\$655			\$1090
Severe Duty Off-Highway, Agriculture, Heavy Haul, Logging, Mining, Oil Field, Refuse, Yard Tractor, InterCity Bus	All	1750 lbs.ft. and below	2/U	1/U	2/U	\$510	3/U	\$1400	
		1850 lbs.ft. and above				\$870		\$2400	

Notes: 1 "Convertible" models 5/500 coverage when operated only as a 9-Speed. Note: Additional 1/100 coverage after conversion on "Convertibles" with purchase of appropriate conversion kit. Additional coverage available for purchase. No late registration penalties. Maximum coverage 6/600 for converted units. 2 "U" denotes "Unlimited" mileage.

AutoShift® Transmission

Vocation	Approved Models	Transmission Torque	Standard Warranty (Yr/Mi 000) ¹	Additional Coverage Years/Miles (000)					
				Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Linehaul	10-Speed	1750 lbs.ft. and below	5/750 (1200km)	N/A	N/A	N/A	N/A	N/A	N/A
		1850 lbs.ft. and above	5/500 (800km)	0/100 (160km)	\$350	0/250 (400km)	\$550	N/A	N/A
	18-Speed	1750 lbs.ft. and below	3/300 (480km)	1/100 (160km)	\$470	2/200 (320km)	\$650	N/A	N/A
		1850 lbs.ft. and above			\$650		\$950		
Standard Duty Construction, Pick up & Delivery, Transit Coach, School Bus, Recreational Vehicle	All	1750 lbs.ft. and below	3/U	1/U	2/U	\$705	N/A	N/A	
		1850 lbs.ft. and above				\$975			\$1425
Severe Duty Off-Highway, Agriculture, Heavy Haul, Logging, Mining, Oil Field, Refuse, InterCity Bus	All	1750 lbs.ft. and below	2/U	1/U	2/U	\$940	3/U	\$2000	
		1850 lbs.ft. and above				\$1300		\$1900	\$3000

Notes: 1 "U" denotes "Unlimited" mileage.

UltraShift® Transmission

Vocation	Approved Models	Transmission Torque	Standard Warranty (Yr/Mi 000) ^{1,2}	Additional Coverage Years/Miles (000)					
				Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Linehaul	LST	1750 lbs.ft. and below	5/750 (1200km)	N/A	N/A	N/A	N/A	N/A	N/A
		1850 lbs.ft. and above	5/500 (800km)	0/100 (160km)	\$350	0/250 (400km)	\$550	N/A	N/A
	LHP, LEP	All	5/500 (800km)	0/100 (160km)	\$400	0/250 (400km)	\$600	N/A	N/A
Standard Duty Recreational Vehicle	LST, LHP	All	5/U	N/A	N/A	N/A	N/A	N/A	N/A

Notes: 1 Coverage does not include DM Clutch model. Must be purchased separately. See clutch matrix. 2 "U" denotes "Unlimited" mileage.

Pricing applies for Protection Plans sold in the first year in service. An additional premium is required for Protection Plans sold within the 2nd and 3rd year of vehicle service. Plans must be purchased before the end of the standard warranty period. Premium Pricing: 2nd year \$100 USD; 3rd year \$300 USD. Canadian orders will be invoiced in CAD based on prevailing exchange rate. For the most current CAD pricing, go to www.roadrangerwarranty.com.

* All coverage subject to meeting Eaton application requirements. All extended coverage requires use of Roadranger or Roadranger "Approved" lubricants.

** Externally mounted heat exchangers coverage limited to standard warranty or 3 years/300,000 miles (480,000 km) maximum. Extended protection does not apply.

***Coverage/pricing valid for US/Canada only.

Heavy-Duty UltraShift® PLUS V Series Transmission and Clutch

Vocation	Approved Models	Transmission Torque	Component	Standard Warranty (Yr/Mi 000) ³	Additional Coverage Years/Miles (000)					
					Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Linehaul	VAS	1750 lbs.ft. and below	Transmission	5/750 (1200km)	N/A	N/A	N/A	N/A	N/A	N/A
		1850 lbs.ft. and above	Transmission							
		All	Clutch	3/350 (563km)	1/100 (160km)	\$300	2/150 (241km)	\$500		
	VCS/VHP/VMS/VXP	1750 lbs.ft. and below	Transmission	3/300 (480km)	1/100 (160km)	\$525	2/200 (320km)	\$750		
		1850 lbs.ft. and above	Transmission			\$700		\$1000		
		All	Clutch	3/350 (563km)	\$300	2/150 (241km)	\$500			
Standard Duty Construction, Pick up & Delivery ¹ , Transit Coach, Recreational Vehicle, Fire Service, Rescue Vehicle	VAS ¹ /VCS/VHP/VMS/VXP	1750 lbs.ft. and below	Transmission	3/U	1/U	\$700	2/U	\$1000	N/A	N/A
		1850 lbs.ft. and above	Transmission			\$950		\$1200		
		All	Clutch			\$350		\$625		
Severe Duty Off-Highway, Agriculture, Heavy Haul ² , Logging, Mining, Oil Field, Refuse	VAS/VCS/VHP/VMS/VXP	1750 lbs.ft. and below	Transmission	2/U	1/U	\$950	2/U	\$1300	3/U	\$1800
		1850 lbs.ft. and above	Transmission			\$1250		\$1750		\$2450
		All	Clutch			\$425		\$750		\$1200

Notes: **1** VAS Pick up & Delivery standard warranty is 5 years/750,000 miles. Extended warranty not available. **2** Heavyhaul application available for VXP and VHP models only. **3** "U" denotes "Unlimited" mileage.

Heavy-Duty UltraShift® PLUS M Series Transmission and Clutch

Vocation	Approved Models	Transmission Torque	Component	Standard Warranty (Yr/Mi 000) ³	Additional Coverage Years/Miles (000)					
					Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Linehaul	MHP/MXP	1750 lbs.ft. and below	Transmission	5/500 (800km)	0/100 (160km)	\$350	0/250 (400km)	\$600	N/A	N/A
		1850 lbs.ft. and above	Transmission			\$450		\$750		
		All	Clutch	3/350 (563km)	1/100 (160km)	\$300	2/150 (241km)	\$500		
Standard Duty Construction ¹ , Pick up & Delivery, Transit Coach, Recreational Vehicle	MHP/MXP	1750 lbs.ft. and below	Transmission	3/U	1/U	\$700	2/U	\$1000	N/A	N/A
		1850 lbs.ft. and above	Transmission			\$950		\$1200		
		All	Clutch			\$350		\$625		
Severe Duty Off-Highway, Agriculture, Heavy Haul ² , Logging, Mining, Oil Field, Refuse	MHP/MXP	1750 lbs.ft. and below	Transmission	2/U	1/U	\$950	2/U	\$1300	3/U	\$1800
		1850 lbs.ft. and above	Transmission			\$1250		\$1750		\$2450
		All	Clutch			\$425		\$750		\$1200

Notes: **1** Construction application not available for MHP models. **2** Only Heavyhaul application available for MHP models. **3** "U" denotes "Unlimited" mileage.

Heavy-Duty UltraShift® PLUS L Series Transmission and Clutch

Vocation	Approved Models	Transmission Torque	Component	Standard Warranty (Yr/Mi 000) ¹	Additional Coverage Years/Miles (000)			
					Option 1	Price USD	Option 2	Price USD
Linehaul	LAS	1750 lbs.ft. and below	Transmission	5/750 (1200km)	N/A	N/A	N/A	N/A
		1850 lbs.ft. and above	Transmission					
		All	Clutch	3/350 (563km)	1/100 (160km)	\$300	2/150 (241km)	\$500
Standard Duty Pick up & Delivery	LAS	1750 lbs.ft. and below	Transmission	5/750 (1200km)	N/A	N/A	N/A	N/A
		1850 lbs.ft. and above	Transmission					
		All	Clutch	3/350 (563km)	1/100 (160km)	\$300	2/150 (241km)	\$500
Standard Duty Recreational Vehicle, Transit Coach	LAS	1750 lbs.ft. and below	Transmission	3/U	1/U	\$700	2/U	\$1000
		1850 lbs.ft. and above	Transmission			\$950		\$1200
		All	Clutch	3/350 (563km)	1/100 (160km)	\$300	2/150 (241km)	\$500

Notes: **1** "U" denotes "Unlimited" mileage.

Pricing applies for Protection Plans sold in the first year in service. An additional premium is required for Protection Plans sold within the 2nd and 3rd year of vehicle service. Plans must be purchased before the end of the standard warranty period. Premium Pricing: 2nd year \$100 USD; 3rd year \$300 USD. Canadian orders will be invoiced in CAD based on prevailing exchange rate. For the most current CAD pricing, go to www.roadrangerwarranty.com.

* All coverage subject to meeting Eaton application requirements. All extended coverage requires use of Roadranger or Roadranger "Approved" lubricants.

** Externally mounted heat exchangers coverage limited to standard warranty or 3 years/300,000 miles (480,000 km) maximum. Extended protection does not apply.

***Coverage/pricing valid for US/Canada only.

Medium-Duty Manual Transmission

Vocation	Approved Models	Standard Warranty (Yr/Mi 000) ¹	Additional Coverage Years/Miles (000)					
			Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Standard Duty Construction, Pick up & Delivery, Transit Coach, School Bus, Recreational Vehicle, Fire Service, Rescue Vehicle	All	2/U	1/U	\$150	2/U	\$200	3/U	\$300

Notes: 1 "U" denotes "Unlimited" mileage.

Medium-Duty Automated UltraShift® HV Transmission

Vocation	Approved Models	Standard Warranty (Yr/Mi 000) ^{1,2}	Additional Coverage Years/Miles (000) ²					
			Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Linehaul	All	3/U	1/U	\$400	2/U	\$600	N/A	N/A
Standard Duty Pick up & Delivery								

Notes: 1 "U" denotes "Unlimited" mileage. 2 Warranty coverage includes DM clutch model.

Medium-Duty Hybrid Transmission

Vocation	Vehicle Type	Approved Models ³	Standard Warranty (Yr/Mi 000) ¹	Additional Coverage Years/Miles (000) ¹			
				Option 1 w/o PEC ²	Price USD	Option 2 w/PEC ²	Price USD
Standard Duty Pick up & Delivery	Step Van	EH-6E706B-CD	3/150 (241km)	2/50	\$2750	2/50	\$3515
	4 x 2 Tractor	EH-8E406A-T					
	Straight Truck	EH-8E406A-CD					
	Straight Truck w/APG	EH-8E406A-CDG					
Standard Duty Construction	Utility w/ ePTO & APG	EH-8E406A-UP	3/150 (241km)	2/50	\$3020	2/50	\$3870
	Utility w/o ePTO & APG	EH-8E406A-UPG					
Severe Duty InterCity Bus	Shuttle Bus	EH-8E406A-P	3/150 (241km)	2/50	\$4000	2/50	\$5150
	Airport Shuttle Bus	EH-8E406A-P					

Notes: 1 "U" denotes "Unlimited" mileage. Coverage includes inverter, DC/DC, Motor/Gen, HDU (Hybrid Drive Unit), clutch and PEC where specified. 2 PEC - Power Electronics Carrier. 3 Model Year 2009 (MY09) models only listed. To look up previous model year (MY08) models go to www.roadrangerwarranty.com.

Pricing applies for Protection Plans sold in the first year in service. An additional premium is required for Protection Plans sold within the 2nd and 3rd year of vehicle service. Plans must be purchased before the end of the standard warranty period. Premium Pricing: 2nd year \$50 USD; 3rd year \$100 USD. Canadian orders will be invoiced in CAD based on prevailing exchange rate. For the most current CAD pricing, go to www.roadrangerwarranty.com.

* Coverage strictly limited to vocations and vehicle types specified and subject to Eaton application approval in writing.

** All coverage subject to meeting Eaton application requirements. All extended coverage requires use of Roadranger or Roadranger "Approved" lubricants.

*** Externally mounted heat exchangers coverage limited to standard warranty or 3 years/300,000 miles (480,000 km) maximum. Extended protection does not apply.

**** Coverage/pricing valid for US/Canada only.

Heavy-Duty Clutch

Vocation	Approved Models	Standard Warranty (Yr/Mi 000) ^{1,2,3}	Additional Coverage Years/Miles (000) ^{1,4}								
			Option 1	Price USD	Option 2	Price USD	Option 3	Price USD	Option 4	Price USD	
Linehaul	Easy Pedal	OEM Coverage	1/100 (160km)	\$105	2/200 (320km)	\$125	3/300 (480km)	\$175	N/A	N/A	
	Easy Pedal Advantage	2/200 (320km)		\$130		\$150		N/A			N/A
	HD Solo	OEM Coverage		\$105	2/200 (320km) ⁵	\$125	3/300 (480km)	\$175	4/400 (641km)	\$250	
	HD Solo Advantage	3/350 (563km)		\$130	2/150 (240km)	\$150	N/A	N/A	N/A	N/A	
	DM Clutch Model	3/350 (563km)		\$300		\$500					
Standard Duty Construction, Pick up & Delivery, Transit Coach, School Bus, Recreational Vehicle, Fire Service, Rescue Vehicle	Easy Pedal	OEM Coverage	1/100 (160km)	\$130	2/200 (320km)	\$155	N/A	\$205	N/A	N/A	
	Easy Pedal Advantage	2/200 (320km)		\$155		\$180		N/A			N/A
	HD Solo	OEM Coverage		\$130	2/200 (320km) ⁵	\$155	3/300 (480km)	\$205	4/400 (641km)	\$280	
	HD Solo Advantage	2/200 (320km)		\$155	2/200 (320km)	\$180	N/A	N/A	\$230	N/A	N/A
	DM Clutch Model	OEM Coverage		\$300	2/150 (240km)	\$500			N/A		
Severe Duty Off-Highway, Agriculture, Heavy Haul, Logging, Mining, Oil Field, Refuse, Yard Tractor, Snow Plow, City Bus	Easy Pedal	OEM Coverage	1/100 (160km)	\$155	2/200 (320km)	\$190	N/A	\$265	N/A	N/A	
	Easy Pedal Advantage	2/200 (320km)		\$180		\$215		N/A			N/A
	HD Solo	OEM Coverage		\$155	2/200 (320km) ⁵	\$190	3/300 (480km)	\$265	4/400 (641km)	\$375	
	HD Solo Advantage	2/200 (320km)		\$180	2/200 (320km)	\$215	N/A	\$290	N/A	N/A	

Notes: **1** Easy Pedal clutch coverage capped at 4 years/400,000 mi (640,000 km); HD Solo and DM clutch coverage capped at 5 years/500,000 mi (800,000 km). **2** OEM denotes truck manufacturer. **3** Ultrashift/DM Clutch model available for 'recreation vehicle' application only. **4** "U" denotes "Unlimited" mileage. **5** 2 years/150,000 mi (240,000 km) if OEM coverage is 3 years/350,000 mi (560,000 km).

Medium-Duty Clutch

Vocation	Approved Models	Standard Warranty (Yr/Mi 000) ^{1,2}	Additional Coverage Years/Miles (000) ³					
			Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Standard Duty Construction, Pick up & Delivery, Transit Coach, School Bus, Recreational Vehicle, Fire Service, Rescue Vehicle	MD SAS	OEM Coverage	1/U	\$105	2/U	\$125	3/U	\$175
	MD Solo							
Severe Duty Off-Highway, Agriculture, Heavy Haul, Logging, Mining, Oil Field, Refuse, Yard Tractor, Snow Plow, City Bus	MD SAS	OEM Coverage	1/U	\$130	2/U	\$155	3/U	\$205
	MD Solo							

Notes: **1** Medium-duty clutch coverage capped at 5 years/unlimited mileage. **2** OEM denotes truck manufacturer. **3** "U" denotes "Unlimited" mileage.

Heavy-Duty UltraShift® PLUS Clutch

Vocation	Approved Models	Standard Warranty (Yr/Mi 000) ⁴	Additional Coverage Years/Miles (000)					
			Option 1	Price USD	Option 2	Price USD	Option 3	Price USD
Linehaul	All	3/350 (560km)	1/100 (160km)	\$300	2/150 (240km)	\$500	N/A	N/A
Standard Duty Construction ¹ , Pick up & Delivery, Transit Coach, School Bus, Recreational Vehicle, Fire Service ² , Rescue Vehicle ²	All except LAS (See notes below for exclusions)	3/U	1/U	\$350	2/U	\$625	N/A	N/A
Standard Duty Pick up & Delivery	LAS	3/350 (563km)	1/100 (160km)	\$300	2/150 (241km)	\$500	N/A	N/A
Severe Duty Off-Highway ³ , Agriculture ³ , Logging ³ , Mining ³ , Oil Field ³ , Refuse ³	All (See notes below for exclusions)	2/U	1/U	\$425	2/U	\$750	3/U	\$1200
Severe Duty Heavy Haul	VXP/VHP/MHP							

Notes: **1** Construction application not available for MHP models. **2** Fire Service and Rescue Vehicle applications not available for MHP and MXP models. **3** Logging, Mining, Oil Field, Refuse, Agriculture and Off Highway applications not available for MHP models. **4** "U" denotes "Unlimited" mileage.



Service & Support Roadranger® Used Truck Extended Protection Plans

Do you need to cover just the existing Eaton transmission?

Description/Option	1 YEAR OPTION 100k miles HD/ 50k miles MD	2 YEAR OPTION 200k miles HD/ 100k miles MD	3 YEAR OPTION 300k miles HD/ 150k miles MD
Manual Transmission, Heavy-Duty	\$175 USD	\$250 USD	\$325 USD
Manual Transmission, Medium-Duty	\$125 USD	\$200 USD	\$275 USD
Automated Transmission, UltraShift DM and AutoShift	\$450 USD	\$700 USD	\$950 USD
Automated Transmission, HV	\$250 USD	\$350 USD	\$450 USD

Do you need to cover the existing Eaton transmission and the existing clutch?

Description/Option	1 YEAR OPTION 100k miles HD/ 50k miles MD	2 YEAR OPTION 200k miles HD/ 100k miles MD	3 YEAR OPTION 300k miles HD/ 150k miles MD
UltraShift Transmission and Existing Heavy-Duty DM Clutch	\$650 USD	\$950 USD	\$1250 USD
HV Transmission and Existing Medium-Duty DM Clutch	\$450 USD	\$575 USD	\$700 USD

Do you need to cover the existing Eaton transmission and replace a clutch?*

Description/Option	1 YEAR OPTION 100k miles HD/ 50k miles MD	2 YEAR OPTION 200k miles HD/ 100k miles MD	3 YEAR OPTION 300k miles HD/ 150k miles MD
UltraShift Transmission and New Heavy-Duty DM Clutch	\$1750 USD	\$1950 USD	\$2150 USD
HV Transmission and New Medium-Duty DM Clutch	\$1250 USD	\$1375 USD	\$1500 USD

Note:

1. Extended coverage can be purchased even after expiration of standard warranty provided trucks pass prescribed inspection. (Inspection checklist, proof of purchase or proof of installation as applicable will be required for registration.)
2. Extended coverage will begin from the age/mileage at registration. Maximum coverage available is 8 years/1,000,000 miles from the original in-service date for transmission. Coverage will terminate on truck reaching either 8 years from original in-service date or 1,000,000 lifetime miles.
3. For clutch, maximum coverage available is 5 years/500,000 miles from the original in-service date.
4. Program available for linehaul service application only.
5. For full program details and up-to-date information, please visit roadranger.com/epp

How to Order:

1. Order online, contact the Roadranger call center, 1-800-826-HELP (4357) or call your local Roadranger field representative, www.roadranger.com/rep
2. Provide detailed truck information in the prescribed format.
3. Remit payment upon receipt of invoice.
4. Perform recommended inspection work and return required documentation according to instructions.
5. After payment receipt and all required details are completed, warranty will be registered.

Note: Forms and inspection checklists are also available on www.roadranger.com/epp

Program available in US/Canada only.

***Replacement clutch option available in US only.**



Service & Support Online Support

Roadranger Support 24 Hours a Day at www.eaton.com/roadranger

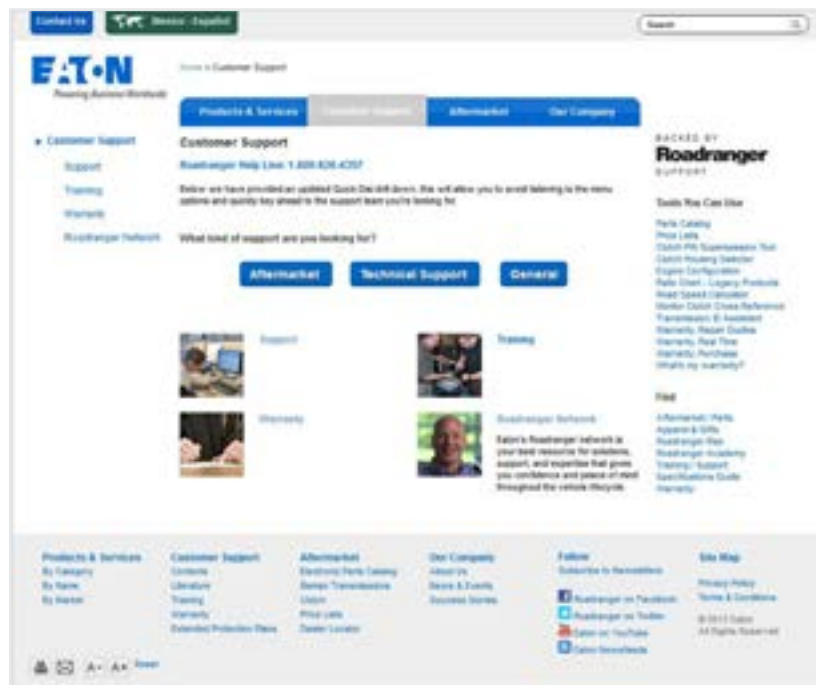
www.eaton.com/roadranger is your “virtual” Roadranger support vehicle. Whether you are a truck maker, dealer, distributor, owner or driver, you can find instant answers when you need them most.

At www.eaton.com/roadranger you can quickly and conveniently find:

- The latest Service Updates
- Approved Roadranger lubricants
- The Roadranger Literature Library
- Warranty information
- ServiceRanger

Bookmark www.eaton.com/roadranger on your desktop today. Use www.eaton.com/roadranger to save hundreds of dollars by downloading service material rather than purchasing printed copies from the Roadranger literature library.

You can also sign up for the free Roadranger e-newsletter. You'll receive automatic Roadranger drivetrain updates to keep you in the know with money saving and money making news.



You can contact the Roadranger Call Center at 800-826-4357 (HELP) from anywhere in North America. In Mexico call 001-800-826-4357.



Find and contact your local Roadranger Representatives.

Service & Support Lubricant Requirements

Tests Show “Next Generation” Roadranger® Drivetrain Full Synthetic Lubricants* Provide up to 1 Percent Annual Fuel Savings

Roadranger synthetic products have a unique formula containing high quality raw materials and additives to offer the best heavy-duty truck drive system performance and economy. In addition to **SAE 50** Transmission fluid, **SAE 75W-90** and **80W-140** synthetic drivetrain fluids, Roadranger systems now offers 4 new products to provide more time on the road.

Roadranger FE 75W-90 Fuel Efficient Synthetic Gear Lubricant

- Fleet and SAE fuel tests prove a 1% fuel savings per truck based on today's fuel costs.**
- You can calculate your savings by visiting www.roadranger.com/lube

Roadranger SAE 50 Synthetic Wheel Hub Lubricant

- Provides maximum performance in wheel ends for increased durability and extended drain intervals

Roadranger Grease EP-2

- High temperature multi-purpose grease for applications all around the truck
- Excellent anti-corrosion and low friction properties make it your first choice when it comes to grease
- Meets NLGI Class 2 specifications
- Standard grease in all Eaton clutches

Hydraulic Launch Assist (HLA) Fluid

- Formulated for excellent seal capacity
- Designed for long fluid life and system reliability
- Meets Eaton's performance specification for HLA system based on rigorous laboratory pump testing

Safeguard Your Warranty

- Approved for ALL Roadranger extended warranty programs
- Extended drain intervals up to 500,000 miles [804672 km]
- Increases component life
- Use in medium-duty, heavy-duty and high torque drivetrains.



Further details and data sheets are available on www.eaton.com/roadranger.

* Meets Eaton Specification PS-164 Rev 7
** Test methods and results available upon request.
Your actual results may vary.



For a complete list of approved suppliers, [click here](#).





Service & Support Roadranger® Academy Online Training



Keep Ahead of the Curve with Training from the Experts

The Roadranger Academy offers the classroom and hands-on instruction your technicians need to move more trucks through the bays and reduce comebacks.

With the Roadranger Academy they will:

- Learn timesaving techniques and shortcuts used by the experts.
- Learn how to more accurately diagnose a problem through hands-on training.
- Receive valuable class materials to reference what they learned, including service bulletins, Roadranger service manuals and troubleshooting guides.

To register for classes in your area or see what computer and web-based training is available, go to www.roadrangeracademy.com.

Definitions

Linehaul

- Line haul is moving different types of freight in high mileage operation (over 60,000 miles (95,000 km/year)).
- Operation on road surfaces of good to excellent concrete or asphalt.
- Distances are more than 30 miles between starting and stopping.
- Typical vehicle configurations are 4X2, 6X2, and 6X4 tractor/trailer combinations and straight trucks.

Heavy Haul

- Movement of heavy equipment or materials at legal maximums or special permit loadings, typically at GCW in excess of 140,000 lbs.
- Operation on road surfaces of concrete, asphalt and maintained gravel.
- High horsepower engines and auxiliary gear boxes might be used.
- Vehicles may be equipped with two retarders.
- 100% load going and empty return.

See the Roadranger Warranty Guide, TCWY0900, for complete vocation/application descriptions and warranty details.

Logging

- Movement of logs, chips, and pulp between logging sites and / or mills.
- High horsepower engines and multiple retarders are typically used in this vocation.
- 3 to 30 miles between starts and stops (typical).
- 90% of loaded operation on road surfaces of concrete, asphalt, maintained gravel, crushed rock or hard packed dirt and up to 10% of loaded operation into sandy or muddy job sites. Vehicles operating less than 90%, refer to Specialized Applications "Off-Highway" coverages.
- 100% load going and empty return.

Mining

- Movement of rock, ore, gravel, and minerals between mine sites and delivery sites.
- High horsepower engines are typically used in this vocation.
- 3 to 30 miles between starts and stops (typical).
- 90% operation on-highway and up to 10% into sandy or muddy job site. Vehicles operating less than 90%, refer to Specialized Applications "Off-highway" coverages.
- 100% load going and empty return.

Oil Field

- Movement of production related products, supplies, and tools between job sites.
- Movement of processing equipment and laboratories on job sites.
- Low mileage operation on road surfaces made of concrete, asphalt, maintained gravel, crushed rock or hard packed dirt.

Construction

- Movement of material to and from a job site.
- Or vehicles used in transfer/relocation typically greater than 10 miles per trip.
- 90% of loaded operation on road surfaces of concrete, asphalt, gravel, crushed rock or hard packed dirt and up to 10% of loaded operation into sandy or muddy job sites. Vehicles operating less than 90%, refer to Specialized Applications "Off-Highway" coverages.

Pick up and Delivery

- Pick up and delivery service within cities and/or suburban areas.
- Operation on road surfaces of concrete, asphalt and maintained gravel.
- 3 miles between starts/stops (typical).
- 100% load going /40% load return (typical).

Refuse

- Vehicles used for residential refuse/recycle pickup typically a high number of stops per mile.
- Or vehicles operated in commercial/industrial pickup typically a low number of stops per mile.
- Or vehicles used in transfer/relocation typically greater than 10 miles per trip.
- 90% of loaded operation on road surfaces of concrete, asphalt, or maintained gravel and up to 10% of loaded operation into landfill, transfer or recycling sites.

Agricultural

- Vehicles used in the agriculture industry. Use typically involves transportation of agricultural and dairy products to/from/on/ around farm sites.
- Typical vehicle types include milk tankers for farm pickup, feed trucks, or grain silage, and hay haulers (which load in the field).

Off Highway

- Class C Roads. Operation exclusively on private road. Asphalt or maintained crushed rock or similar surface material, variable grades.

School Bus

- Transporting students to and from school and /or school related events.
- Operation on road surfaces made of concrete, asphalt, maintained gravel, crushed rock, hard packed dirt, or other similar surfaces.

Recreation Vehicle

- A privately owned recreational vehicle.
- Truck chassis based.
- Bus chassis based.
- Recreational Vehicles Motor Homes Class A.

Transit Coach

- Transporting people and sometimes light freight between cities and/or suburban areas.
- Transporting people in and around city or suburban areas.
- Typical vehicle types include integral coach, cross country coach, tour bus/coach.

SERVICERANGER 4

A powerful diagnostic tool for the professional technician.

ServiceRanger™ 4 is a PC-based diagnostic and service software application that provides quick access to Eaton commercial vehicle products. It allows for quick and easy diagnosis of complex problems affecting electronic systems to enable faster service and reduced downtime.

Product Supported

ServiceRanger 4 is the only software on the market approved to work on Eaton products:

- Fuller Advantage™ Series
- AutoShift™Gen2
- Lightning
- AutoShift / UltraShift™Gen3
- UltraShift *PLUS*
- Hybrid Electric Vehicle
- Hydraulic Launch Assist

SUBSCRIBE TODAY

For your convenience, visit Roadranger.com/ServiceRanger or call **1.800.826.HELP**

System Requirements

A PC should meet the following minimum configuration:

- Platform: IBM or 100% compatible
- Operating system (32- and 64-bit versions):
 - Windows XP™
 - Windows Vista™
 - Windows 7™
- Processor: 1.8 GHz or greater, dual core or greater
- RAM Memory: 1 GB or greater
- Hard Drive: 40 GB or greater
- Display: SVGA (1024 x 768 pixels) Color
- Required Software: Microsoft.NET Framework 4.0

Communication Adapter

ServiceRanger 4 requires a TMC RP1210 communication adapter to communicate with the vehicle. To obtain more information on compatible adapters, visit www.Roadranger.com/ServiceRanger.

Packages

ServiceRanger 4 is offered in three packages: Basic, Standard and Professional. Ranging from 'read only' to professional full-function service levels, there is a version to meet every need.

ServiceRanger 4 is offered as a subscription program, which gives you access to updates, new features and product support.

FEATURES	Basic	Standard	Professional
Fault Codes	✓	✓	✓
Service Information	✓	✓	✓
Data Monitor	✓	✓	✓
Configurations		✓	✓
Programming			✓

FEATURES	SERVICERANGER 3	SERVICERANGER 4
Fault Codes	Displays vehicle and Eaton fault codes in single table	Displays vehicle and Eaton fault codes filtered for easy location
Service Information	•	View troubleshooting directly from a fault code
	•	View troubleshooting and service repair procedure within an interactive viewer
	•	Guided diagnostics for critical and complicated faults and products
	•	Videos for complicated repair procedures
Data Monitoring	Provides live data in grid	Provides live data
	Pre-defined data list	Pre-defined and user-created lists
	•	Select from all vehicle parameters
Configurations and Calibrations (1)	Change Eaton configuration settings	Change Eaton configuration settings
	Simple display	Grouped and sorted values for easy identification
	•	Saved configurations templates files
Programming (2)	Update product software	Update product software
	Internet updates for new product software	Internet updates for new product software
	•	One-click update allows programming the entire system of ECUs at once
Other	Link to remote assistance (Call Center) like Net meeting	Link to remote assistance (Call Center) like Net meeting
	Basic service report - print only	Enhanced service activity report - allows for saving, searching, printing
	•	Online account and license management
	•	Enhanced user interface - clean, intuitive and large touchpoints

1) Standard and Professional Only 2) Professional Only

ServiceRanger 3 will be phased out after ServiceRanger 4 is launched.

BACKED BY
Roadranger
SUPPORT

**For spec'ing or service assistance,
call 1-800-826-HELP (4357) or visit
www.eaton.com/roadranger.
In Mexico, call 001-800-826-4357.**

Roadranger: Eaton and trusted partners
providing the best products and services in the
industry, ensuring more time on the road.

Eaton
Vehicle Group
P.O. Box 4013
Kalamazoo, MI 49003 USA
800-826-HELP (4357)
www.eaton.com/roadranger

© 2014 Eaton
All Rights Reserved. Printed in USA.
RRSL0001 0114

Note: Features and specifications listed in this document are subject to change without notice and represent the maximum capabilities of the software and products with all options installed. Although every attempt has been made to ensure the accuracy of information contained within, Eaton makes no representation about the completeness, correctness or accuracy and assumes no responsibility for any errors or omissions. Features and functionality may vary depending on selected options.

Eaton, Fuller, Roadranger, Solo and UltraShift are registered trademarks of Eaton. All trademarks, logos and copyrights are those of their respective owners.