

**UltraShift® PLUS**  
Automated Transmissions

Series: Performance

Superior startability,  
gradeability and low-speed  
maneuverability.

Proven reliability and durability of Eaton® Fuller® 13- and 18-speed transmissions.

**Platforms:**

- Multipurpose High Performance (MHP)
- Multipurpose Extreme Performance (MXP)

No other fully automated transmission offers the fuel economy AND serviceability of UltraShift PLUS. Built upon the robust Fuller 13- and 18-speed manual transmissions, the UltraShift PLUS Performance Series uses an electronic clutch actuator to provide faster shifting and smoother engagement. Intelligent shift selection software uses changes in grade, weight and throttle to calculate the most efficient and effective shift points. The UltraShift PLUS fully engages the clutch at idle, giving the driver ultimate control in challenging situations.

**Technical Features**

- Fully automated two-pedal design (no clutch pedal)
- Electronic Clutch Actuator (ECA) provides smooth engagement
- On/Off-highway performance design
- Safety features include auto neutral and Intelligent Hill Start Aid, which prevents roll-back and roll-forward while launching on grades using foundation wheel brakes
- Automatic, Manual and Low modes offer driver full control
- Creep Mode
- Paired to the highest torque engines available today with torque capacities ranging from 1450 lb-ft (1966 Nm) through 2250 lb-ft (3050 Nm)
- World class startability and ratio coverage
- Unlimited gross combination weight in 18-speed models
- Two-speed axle and remote split-shaft PTO capabilities



**The Downside of Alternative Transmissions:**  
Cost and performance

European Automated Manuals	Torque Converter Automatics
<p><b>Expensive maintenance</b></p> <ul style="list-style-type: none"> <li>• Organic clutch replacement costs</li> <li>• Organic clutch durability/life</li> <li>• Limited service network</li> </ul>	<p><b>Inefficient design, waste fuel</b></p> <ul style="list-style-type: none"> <li>• Expensive maintenance                             <ul style="list-style-type: none"> <li>- More oil changes</li> <li>- Shorter brake life</li> <li>- Other drivetrain damage</li> </ul> </li> <li>• Limited service network</li> <li>• Higher initial cost</li> </ul>
<p><b>COST</b></p> <p>↑</p>	
<p><b>Lack overall ratio</b></p> <ul style="list-style-type: none"> <li>• Organic clutch is less tolerant of heat and is often compromised at heavy weights</li> <li>• Limited engine options available</li> </ul>	<p><b>Low speed handling</b></p> <ul style="list-style-type: none"> <li>• Urge to move</li> <li>• Less control on grade/slopes – tendency to “freewheel”</li> <li>• Tendency to overheat in certain conditions</li> </ul>
<p><b>PERFORMANCE</b></p> <p>↓</p>	



Powering Business Worldwide

# UltraShift® PLUS Performance Automated Transmissions

## Total System Installed Specifications (Dry)

Models	Max TQ lb-ft [Nm]	Weight lb [kg]*	Length in. [mm]**	Speeds	PTO Speed (% of Engine)
FO-16E313A-MHP	1,650 [2,237]	978 [444]	34.98 [888.4]	13 fwd, 3 rev	79
FO-18E313A-MHP	1,850 [2,509]				
FO-20E313A-MHP	2,050 [2,779]				
FO-18E318A-MXP	1,850 [2,509]			18 fwd, 4 rev	
FO-20E318A-MXP	2,050 [2,779]				
FO-16E318B-MXP	2,050 [2,779]				
FO-18E318B-MXP	1,850 [2,509]				
FO-20E318B-MXP	2,050 [2,779]				
FO-22E318B-MXP	2,250 [3,051]				

\* Dry weight, including clutch \*\* Standard install length

## Ratios and Steps

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	
MHP		4.03	12.85	15.06	16.84	12.29	8.51	6.05	4.38	3.20	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73						
	% Step				44	41	38	37	40	18	20	17	18	17	16	18								
MXP (18A)	2.99	3.50	11.17	13.09	16.70	12.19	10.40	8.51	7.26	6.05	5.16	4.38	3.74	3.20	2.73	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73	
	% Step	17	17	17	18	17	20	17	20	17	17	17	17	17	17	17	18	17	20	17	22	17		
MXP (18B)	3.43	4.03	12.85	15.06	19.73	14.40	12.29	8.51	7.26	6.05	5.16	4.38	3.74	3.20	2.73	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73	
	% Step	17	44	17	20	17	18	17	17	17	17	17	17	17	20	18	20	17	18	17	16	18		

Heavy-Duty Model Family	Linehaul	Heavy Haul	Logging	Mining	Oil Field	Construction	City Delivery	Refuse	Agricultural	Off Highway
UltraShift PLUS MHP										
UltraShift PLUS MXP										

Shading indicates approved vocations. All automated transmissions must have Eaton engine certification.

## Driver Interface Simple and Intuitive

- Manual override available
- Low mode
- Button shifting in drive, reverse, manual and low modes

## Driveline Protection Features

- Stall prevention
- Engine Overspeed Protection
- Clutch Abuse Protection
- Auto gear select
- Hill Start Aid

## Supported by the Roadranger Network

- OEM dealer, fleet familiarity
- Parts and service widely available
- Does not require service by a dedicated service network
- Modular design minimizes cost and time of service
- Roadranger field service force provides training and support at dealership and fleet level
- Advanced electronics facilitate comprehensive diagnostic capabilities

## Warranties

Five-year/500k mile transmission warranty and three-year/ 350k mile clutch warranty for most applications. Two-year unlimited mileage system warranty (including clutch) for Severe Service applications. You can find your specific vocation coverage on [www.roadranger.com](http://www.roadranger.com). Select the vocational warranty guide.

**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.

BACKED BY  
**Roadranger**  
SUPPORT

For spec'ing or service assistance,  
call 1-800-826-HELP (4357) or visit  
[www.eaton.com/roadranger](http://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.

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