



Giving you control when you need it most.

Smart Gear Selection and low-speed maneuverability make UltraShift PLUS the smartest transmission for the job.

Platforms:

- Vocational Construction Series (VCS)
- Vocational Multipurpose Series (VMS)
- Multipurpose/Vocational High Performance (MHP)
- Multipurpose Extreme Performance (MXP)
- Vocational Extreme Performance (VXP)

For low-speed maneuverability, a necessity for challenging worksites, the UltraShift PLUS Vocational Series of automated transmissions is the ultimate transmission choice. Through extended low and reverse gear ratio coverage, it provides the lowest ground speed for curbing, creeping, spreading, and paving. For highway construction and dump operations, it is designed with deep reduction and fast, flexible reverse gearing. And the patented shift logic and controls within every UltraShift PLUS constantly adapt based on changes in weight of load, grade, and power, making adjustments to maximize efficiency.

Technical Features

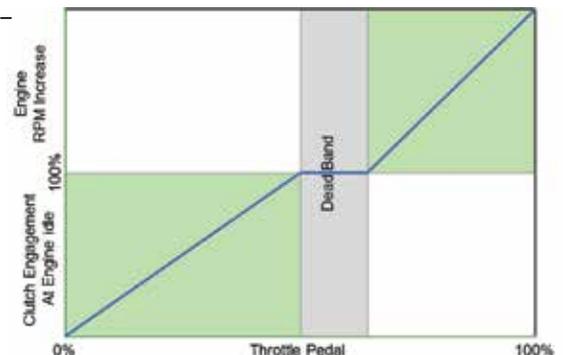
- Fully automated two-pedal design (no clutch pedal)
- Electronic Clutch Actuator (ECA) provides smooth engagement
- On/Off-highway performance design
- Safety features include auto neutral and Intelligent Hill Start Aid, which prevents roll-back and roll-forward while launching on grades using foundation wheel brakes
- Automatic, Manual and Low modes offer driver full control
- Transmission Shift Console Mode Configuration provides low speed maneuverability options including Standard, Creep Mode, Blended Pedal, and Urge to Move
- Paired to the highest torque engines available today with torque capacities ranging from 1050 lb-ft (1424 Nm) through 2250 lb-ft (3051 Nm)
- World class startability and ratio coverage
- Two-speed axle ratio
 - Enhanced gear reduction to maximize on/off road capabilities
 - Cost-saving alternative to torque converter
- Split-shaft power take-off (PTO)
 - Allows for transmission gear selection and clutch control from a panel outside of the vehicle's cab along with the remote throttle
 - Eliminates the need for operators to enter and exit the cab to change transmission gears



High Performance at Low Speeds

Urge to Move – Drivers simply release the brake pedal to automatically inch forward, similar to the feel of a passenger car.

Blended Pedal – Drivers can use the throttle to feather the clutch for seamless low speed control.



Powering Business Worldwide

UltraShift® PLUS Vocational Automated Transmissions

Total System Installed Specifications (Dry)

Models	Capacity	Weight Lbs. [kg]*	Length In. [mm]**	Speeds	PTO Speed (% of Engine)
FO-10E308LL-VCS	1050 [1424]	975 [442]	34.98 [888.4]	10 fwd/3 rev	79
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]				
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]	978 [444]	34.98 [888.4]	11 fwd/3 rev	79
FO-17E309ALL-VMS	1750 [2373]				
FO-16E313A-MHP	1650 [2237]				
FO-18E313A-MHP	1850 [2509]				
FO-20E313A-MHP	2050 [2779]				
FO-18E318A-MXP	1850 [2509]				
FO-20E318A-MXP	2050 [2779]				
FO-16E318B-MXP	1650 [2237]				
FO-18E318B-MXP	1850 [2509]				
FO-20E318B-MXP	2050 [2779]				
FO-22E318B-MXP	2250 [3051]	978 [444]	34.98 [888.4]	13 fwd/3 rev	79
FO-18E318B-VXP	1850 [2509]				
FO-20E318B-VXP	2050 [2779]				
FO-22E318B-VXP	2250 [3051]				
FO-18E318B-VXP	1850 [2509]				
FO-20E318B-VXP	2050 [2779]				
FO-22E318B-VXP	2250 [3051]	978 [444]	34.98 [888.4]	18 fwd/4 rev	79
FO-18E318B-VXP	1850 [2509]				
FO-20E318B-VXP	2050 [2779]				
FO-22E318B-VXP	2250 [3051]				
FO-18E318B-VXP	1850 [2509]				
FO-20E318B-VXP	2050 [2779]				

* Dry weight, including clutch ** Standard install length ¹ +200 lb-ft. [271 Nm] in top two gears

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

Three-year unlimited mileage system warranty for most applications. Two-year unlimited mileage warranty for Severe Service applications. You can find your specific vocation coverage on www.eaton.com/roadranger. Select the vocational warranty guide.

Ratios and Steps

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	
VCS		2.89	9.85	15.22	19.68	14.56	9.42	6.24	4.63	3.40	2.53	1.83	1.36	1.00	0.74									
					% Step	55	51	35	36	34	38	35	36	34										
VMS		3.43	13.03	20.84	35.73	26.08	16.30	11.85	7.41	5.23	3.79	2.77	1.95	1.38	1.00	0.73								
					% Step	60	37	60	38	38	37	42	42	38	37									
MHP		4.03	12.85	15.06	16.84	12.29	8.51	6.05	4.38	3.20	2.29	1.95	1.62	1.38	1.17	1.00	0.86	0.73						
					% Step	44	41	38	37	40	17	20	17	18	17	16	17							
MXP 18A	2.99	3.50	11.17	13.09	16.70	12.19	10.40	8.51	7.26	6.05	5.16	4.38	3.74	3.20	2.73	2.28	1.94	1.62	1.38	1.17	1.00	0.86	0.73	
					% Step	17	17	17	18	17	20	17	20	17	17	17	18	17	18	17	20	17	20	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	20	18	20	17	18	17	16	17		
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		

VCS (Vocational Construction Series), VMS (Vocational Multipurpose Series), MHP (Multipurpose/Vocational High Performance), MXP (Multipurpose Extreme Performance), VXP (Vocational Extreme Performance)

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.

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