



Product Information

136- mDRIVE TRANSMISSION PACKAGES

Updated: February 7, 2025

The new Mack mDRIVE G Series is upgraded with improved quality, shifting performance, and functional safety standards above preceding generation models. The G series improves gear shifting performance with new hardware sensors and valves and delivers a new clutch control actuator and clutch assembly including a new torsional damping system for improved durability. A new transmission oil level sensor broadcasts information to the CoPilot display to advise driver of low oil level (if present) before engine start.

The mDRIVE G series offers various models that are approved for long haul operations, regional and urban transportation, and heavy-duty and heavy construction applications.

mDRIVE G series has extended maintenance intervals which promote lower operating costs and less environmental impact. Dealers and customers must refer to Mack's Service-at-a-Glance documents for current oil specifications, oil capacities, and maintenance intervals.

13- and 14-speed models deliver additional low and low-low forward and reverse ratios to provide the following functionality:

Additional Low Gear (Creeper) enables improved vehicle startability and low speed maneuvering.

Additional Low-Low Gear (Ultra-low Creeper) provides an extra low start gear designed to further enhance startability and very low speed maneuvering, ideal for customers operating in loose soil conditions with heavier loads.

Factory-enabled Reverse Gear Ratios: Although all mDRIVE models are built with multiple reverse ratios, Mack limits the number of ratios that are enabled at the factory. Additional details are provided on the following pages.

Heavy-Duty Models: Heavy-duty models use the same enclosures and clutch assembly as standard duty models but include gearing that is subjected to additional surface hardening and provide an enhanced splitter that enables faster split shifts to occur.



mDRIVE 12-speed direct drive and overdrive base transmission.

mDRIVE 13- and 14-speed models includes a gear box extension installed between the clutch housing and the gearbox enabling additional low-speed forward and reverse ratios.

Transmission Drive Mode Packages (M05)

G Series mDRIVE functions are optimized with specially adapted drive modes, such as Economy, Extra Economy, Performance, and others, which makes the gearbox even more practical and economical by adapting the gearshift functionality to specific operating conditions.

Additionally, Mack offers dealers and customers options for specifying the type of mDRIVE stalk shifter that allow driver options for drive mode selection and fully automatic or manual shifting. For more information, see Product Information Bulletin attached to the M05 family options.



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Transmission Package Overview

Standard Duty Models							
Sales Code	Mack mDRIVE Model	Direct / Overdrive	# Forward Speeds	# Reverse Speeds Available (1)	Additional Low and Low-Low Forward Speeds (2)	Max input torque lb-ft (Nm)	Max GCW lbs. (tonnes)
1361525	12 SPEED DIRECT DRIVE	Direct	12	4	No	1950 (2600)	220,000 (100) With application approval
1361526	12 SPEED OVERDRIVE	Overdrive	12	4	No		
1361545	13 SPEED DIRECT DRIVE	Direct	13	5	Yes (1)		
1361546	13 SPEED OVERDRIVE	Overdrive	13	6	Yes (1)		
1361548	13 SPEED OVERDRIVE FOR DYNAMIC OVERDRIVE	Overdrive	13	6	Yes (1)		
Heavy-Duty Models (3)							
Sales Code	Mack mDRIVE Model	Direct / Overdrive	# Forward Speeds	# Reverse Speeds Available (1)	Additional Low and Low-Low Forward Speeds (2)	Max input torque lb-ft (Nm)	Max GCW lbs. (tonnes)
1361527	12 SPEED DIRECT DRIVE, HEAVY DUTY	Direct	12	4	No	1950 (2600)	220,000 (100) With application approval
1361528	12 SPEED OVERDRIVE, HEAVY DUTY	Overdrive	12	4	No		
1361529	13 SPEED DIRECT DRIVE, HEAVY DUTY	Direct	13	5	Yes (1)		
1361530	13 SPEED OVERDRIVE, HEAVY DUTY	Overdrive	13	6	Yes (1)		
1361533	13 SPEED OVERDRIVE FOR DYNAMIC OVERDRIVE, HD	Overdrive	13	6	Yes (1)		
1361532	14 SPEED DIRECT DRIVE, HEAVY DUTY	Direct	14	5	Yes (2)		
1361531	14 SPEED OVERDRIVE, HEAVY DUTY	Overdrive	14	6	Yes (2)		

- (1) **Factory-enabled Reverse Gear Ratios:** Although all mDRIVE models are built with multiple reverse ratios, Mack limits the number of ratios that are enabled at the factory. This chart identifies the total number of reverse ratios that each model is built with. The ratio chart on the following page identifies the specific ratios that are factory enabled for each model. Customers who require use of additional reverse ratios must consult with a Mack dealer about enabling additional ratios via Premium TechTool.
- (2) **Additional Low and Low-Low Forward Speeds (Creeper and Ultra-low Creeper):** Chart identifies mDRIVE models that deliver lower starting ratios for improved startability. The number in parenthesis identifies the number of additional low ratios available.
- (3) **Heavy-Duty Models:** Heavy-duty models use the same enclosures and clutch assembly as standard duty models but include gearing that is subjected to additional surface hardening and provide an enhanced front splitter that enables faster split shifts to occur.



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12-speed Direct	12-speed Overdrive	13-speed Direct	13-speed Overdrive	14-speed Direct	14-speed Overdrive
Overall Ratio					
14.94	14.85	19.38	22.20	32.04	40.56
Forward Speeds / Gear Ratios					

							1	32.04				
				1	19.38				2	19.38	1	32.04
1	14.94			2	14.94	1	17.54	3	14.94	2	19.38	
2	11.73	1	11.73	3	11.73	2	11.73	4	11.73	3	11.73	
3	9.04	2	9.21	4	9.04	3	9.21	5	9.21	4	9.21	
4	7.09	3	7.09	5	7.09	4	7.09	6	7.09	5	7.09	
5	5.54	4	5.57	6	5.54	5	5.57	7	5.57	6	5.57	
6	4.35	5	4.35	7	4.35	6	4.35	8	4.35	7	4.35	
7	3.44	6	3.41	8	3.44	7	3.41	9	3.41	8	3.41	
8	2.70	7	2.70	9	2.70	8	2.70	10	2.70	9	2.70	
9	2.08	8	2.12	10	2.08	9	2.12	11	2.12	10	2.12	
10	1.63	9	1.63	11	1.63	10	1.63	12	1.63	11	1.63	
11	1.27	10	1.28	12	1.27	11	1.28	13	1.28	12	1.28	
12	1.00	11	1.00	13	1.00	12	1.00	14	1.00	13	1.00	
		12	0.79			13	0.79			14	0.79	

Note that all mDRIVE models contain eleven ratios (in yellow cells) that are practically identical. These ratios are of little importance in making a spec decision.

Rather, the outlying ratios (in gold cells) are critical inputs for calculating proper startability and gradeability.

Chart identifies the total number of reverse gears and ratios that each model is built with. The yellow cells identify the ratios that are factory enabled.

Reverse Speeds / Gear Ratios									
R1	17.49	R1	13.73	R1	37.49	R1	20.53	R1	37.49
R2	13.73	R2	10.78	R2	17.49	R2	13.73	R2	17.49
R3	4.02	R3	3.16	R3	13.73	R3	10.78	R3	13.73
R4	3.16	R4	2.48	R4	4.02	R4	4.72	R4	8.62
				R5	3.16	R5	3.16	R5	4.02
						R6	2.48	R6	3.16

Why is this important?

The truck's ability to start movement from a standstill on a grade is known as **startability**.

Startability is related to gradeability in that startability is the ability to commence forward motion on a specified grade, while **gradeability** is the truck's ability to maintain speed on a grade.

Startability is calculated using a formula that considers the following inputs:

- Engine torque at clutch engagement
- Rear axle ratio
- **Transmission ratio (starting gear and final gear)**
- Tire revolutions per mile
- Driveline efficiency

Selecting proper transmission ratios for starting gear and final gear are essential for achieving optimum vehicle performance and economy. To reiterate the startability formula, vehicle specifications including the engine, transmission, axle ratio, and tires should be selected to meet minimum startability and gradeability recommendations for a given application, while balancing performance and efficiency with customer requirements.

Dealers should refer to the **PAWS Performance Predictor** to identify startability and gradeability recommendations and performance based on each spec's combination of inputs.