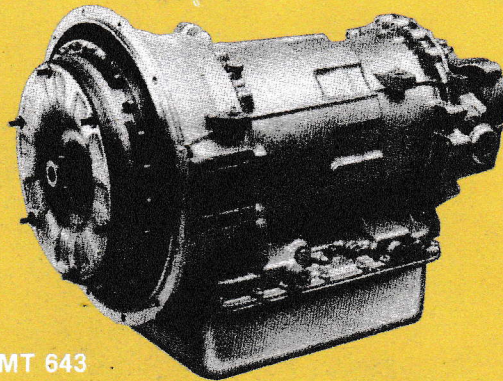


# Allison Transmissions

## automatic models

MT, MTB 643, MT, MTB 653DR  
up to 250 nhp  
(186 kW)



MT 643

## specifications

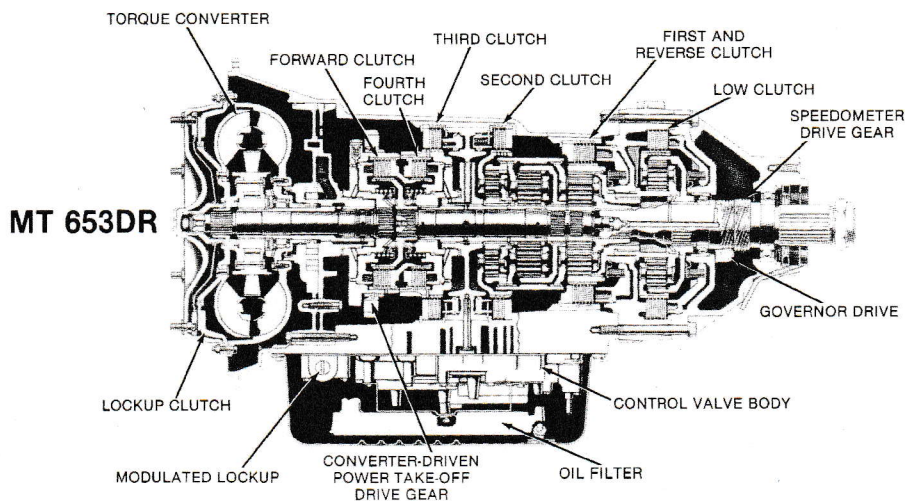
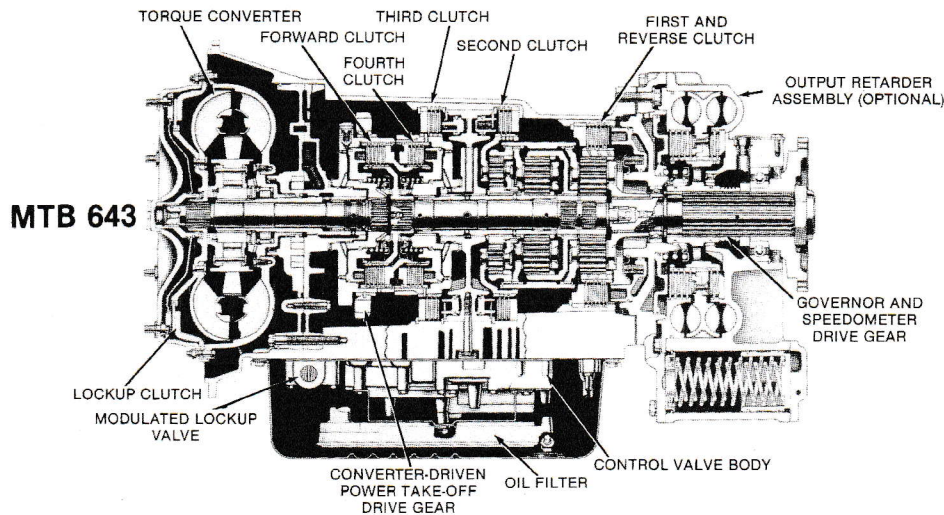
MTB: Retarder Model, (DR) Deep Ratio

		MT, MTB 643	MT, MTB 653DR
<b>general rating +</b>	Net input power	250 nhp (186 kW) (max)	250 nhp (186 kW) (max)
	Input speed, full-load governed	4000 rpm (max) 2200 rpm (min)	4000 rpm (max) 2200 rpm (min)
	Input speed w/retarder	3000 rpm (max) 2200 rpm (min)	3000 rpm (max) 2200 rpm (min)
	Net input torque	625 lb ft (847 N•m) (max)	625 lb ft (847 N•m) (max)
	Vehicle Weight	Up to 73,280 lbs (33240 kg)	Up to 73,280 lbs (33240 kg)
<b>mounting</b>	Direct	SAE 2 flywheel housing with flex plate drive	
	Type	Single-stage, 3-element multiphase	Single-stage, 3-element multiphase
<b>torque converter</b>	Stall torque ratio	TC 350-3.09 TC 370-2.43 TC 380-1.86	TC 350-3.09 TC 370-2.43 TC 380-1.86
	Lockup clutch automatic; modulated	Effective in 3rd & 4th	Effective in 4th & 5th
	<b>optional output retarder</b>	Type	Hydraulic toroid rotor/Friction disc assist
	Capacity (power absorption)	Over 500 hp (373 kW) @ 2000 rpm	
<b>gearing</b>	Type	Constant mesh, spur type planetary	Constant mesh, spur type planetary
	Range:	Ratios*:	Ratios*:
	First	3.583	8.045
	Second	2.093	3.583
	Third	1.387	2.093
	Fourth	1.000	1.387
	Fifth	—	1.000
Reverse	5.674	5.674	
		*Gear ratio does not include torque converter ratio.	
<b>power takeoff</b>	Type	Converter driven	
	Size of opening	SAE 6-bolt	
	Location	Right side (viewed from rear)	
	Drive gear ratio	All ranges—1.00 × turbine speed	
	Drive gear rating	300 lb ft (407 N•m), No speed limit	
<b>oil system</b>	Oil type	Dexron®, Dexron II®, type C-3	
	Capacity (excluding external circuit)	18 qt. (17 liters) (with 5.1" pan)	
	Sump	Integral	
	Filter or screen	Integral	
	Cooler**	Remote mounted	
<b>size</b>	Length	30.42 in (773 mm)	36.23 in (920 mm)
	Width	19.25 in (489 mm)	19.25 in (489 mm)
	Height (with 5.1" pan)	22.36 in (568 mm)	22.36 in (568 mm)
	Weight (dry)	510 lbs (231 kg)	602 lbs (273 kg)
	Weight (dry) w/output retarder	638 lbs (289 kg)	730 lbs (331 kg)

\*\*Not furnished on transmission assembly but is supplied by vehicle manufacturer.

+ Vocational ratings vary significantly from general ratings. Consult DDA Sales for specific vocational ratings.

## design features



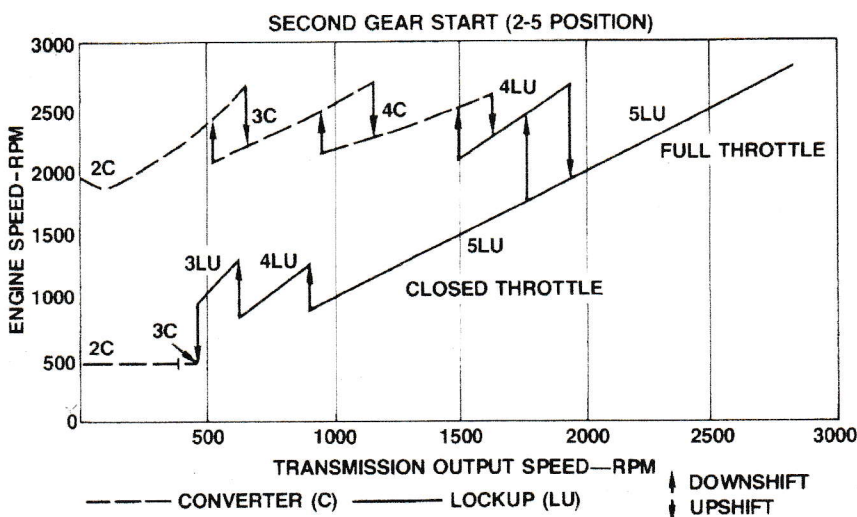
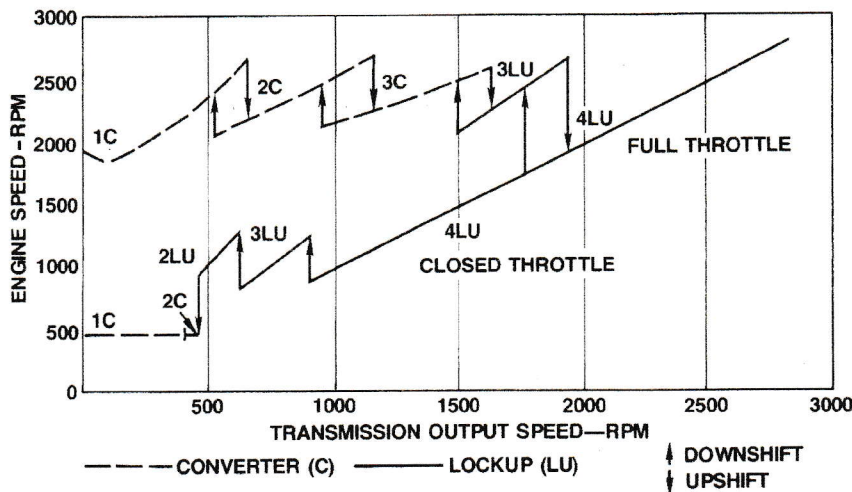
## design features & benefits

- For large bore gasoline and mid-range diesel engines.
- Four forward gear ranges, one reverse (MT 643). Five forward gear ranges, one reverse (MT 653DR).
- Optional second gear start on MT 643 for coach applications.
- Automatic upshifting or downshifting within each drive range.
- Automatic lockup clutch, throttle modulated for improved vehicle braking.
- Multidisk, self-adjusting, hydraulic clutches.
- Inhibitors to prevent harmful downshifts or reverse shifts.
- The output shaft splines are rolled not cut thus reducing stress and providing maximum strength.
- Optional output retarder quietly and smoothly applies braking force directly to driveshaft without loading engine or transmission. Extends brake life several times.

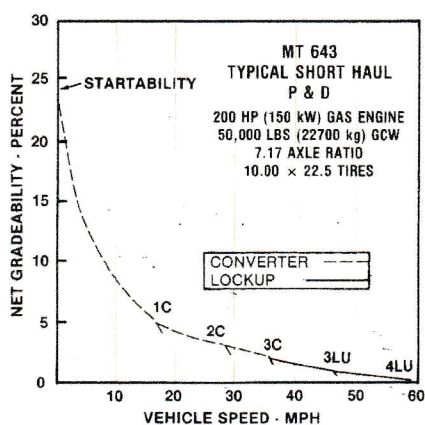
## design features & benefits (cont.)

- Forward clutch dump valves to prevent overspeeding of torque converter.
- Clutch control provides for fast application of clutch in reverse.
- Truck-proven, spur-type planetary gearing is counterphased, providing both maximum strength and quietness.
- Vacuum shift modulation (gasoline engines); mechanical shift modulation (gasoline and diesel engines).
- Converter-driven power takeoff drive gear (for side mounted PTO).
- 5 and 8 tooth speedo drive gears available with MT 643; 7 and 11 with MT 653DR; 17 tooth on MTB-models.
- 5.1 inch (130 mm) oil pan standard; optional 4.3 inch (110 mm) oil pan available.
- 7.1 inch (180 mm) oil pan (with externally accessible filter) available on MT 653DR only.

## shifting flexibility and economy

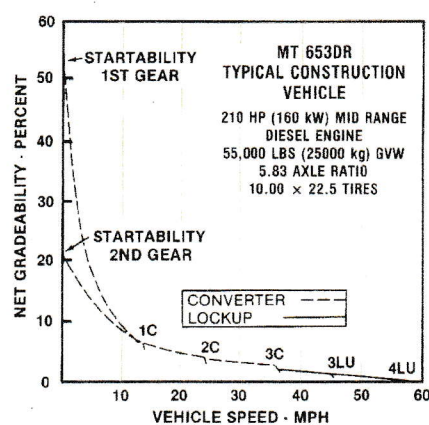


# typical performance




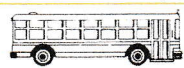




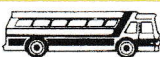

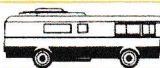



## Performance and Gradeability

- The torque converter provides "better than stick" startability for faster acceleration and easier pull out from ramps or ruts.
- Torque converter combined with constant mesh planetary gearing provides full power shifts and uninterrupted power flow for faster acceleration and shorter trip times.
- Automatic modulated lock-up operation after start provides maximum performance and fuel economy.



# typical applications

	<b>MT, MTB 643</b> ■ AG SPREADER		<b>MT, MTB 643</b> ■ BEVERAGE
	■ SHORT HAUL TRACTOR		■ SCHOOL BUS
	■ P & D TRUCK		<b>MT, MTB 653DR</b> ■ REFUSE TRUCK
	■ FIRE TRUCK		■ TRANSIT MIXER
	■ INTERCITY COACH		■ CONSTRUCTION DUMP TRUCK
	■ MOTOR HOME		■ MUNICIPAL TRUCK

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## Allison Transmissions

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