

Allison Transmissions



Automatic Models
MT 643
up to 250 nhp
(186 kW)

SPECIFICATIONS

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General rating+

Net input power (max).....250 hp (186 kW)
Input speed range.....2000 - 4000 rpm
Net input torque (max).....640 lb ft (868 N•m)
Vehicle weight (GVW or GCW).....Up to 73,280 lbs (33,239 kg)

Mounting

Direct.....SAE 2 flywheel housing with flex plate drive

Torque converter

Type.....Single-stage, 3-element, multiphase
Stall torque ratio.....TC 350-3.04; TC 360-2.86; TC 370-2.40;
TC 378-2.27; TC 380-1.82
Lockup Clutch, automatic.....Effective in 3rd & 4th

Gearing

Type.....Constant mesh, spur type planetary

Range	Ratios*:
First.....	3.58:1
Second.....	2.09:1
Third.....	1.39:1
Fourth.....	1.00:1
Reverse.....	5.67:1

* Gear ratio does not include torque converter ratio.

Power takeoff provision

Converter driven (SAE 6-bolt)

Location.....Right side (viewed from rear)

Drive gear ratio..... All ranges--1.00 x turbine speed

Drive gear rating.....300 lb ft (407 N•m)

Oil system

Oil type..... Dexron• III, C 4

Capacity (excluding external circuit).....18 U.S. qts (17 liters)
(w/std. oil pan)

Filter.....Full flow, replaceable element, remote mounted

Cooler.....Remote mounted

(Filter and Cooler not furnished on transmission assembly but is supplied by vehicle manufacturer.)

Size

Length.....30.4 in (773 mm)

Width.....19.3 in (489 mm)

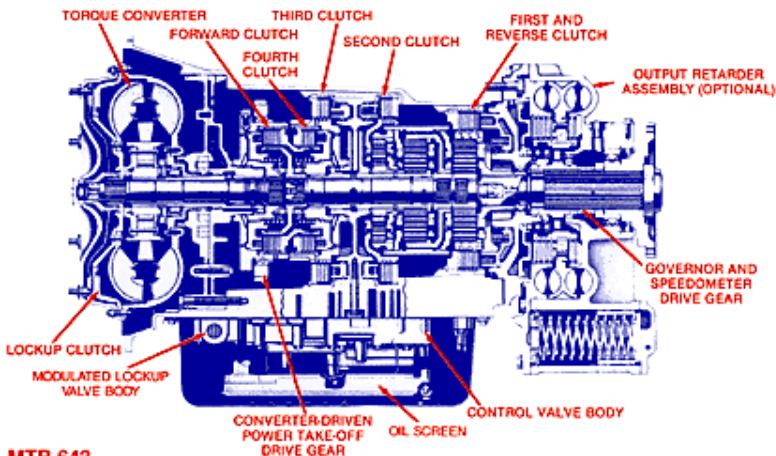
Height (with 5.1" pan).....22.4 in (568 mm)

Weight (dry).....510 lbs (231 kg)

Weight (dry) w/output retarder.....638 lbs (289 kg)

+NOTE: Vocational ratings may vary by vocation.

Transmission Cross-section [\(go to top\)](#)



Design Features & Benefits [\(go to top\)](#)

- ➊ Designed for use with large bore gasoline and mid-range diesel engines up to 250 nhp (186 kW). Four forward ranges and one reverse. This transmission model is best suited for school bus, P&D, emergency vehicles and motorhomes.
 - ➋ Clutches are multidisc design, oil-cooled, hydraulically-operated, and self-compensating for normal wear. Spur-type planetary gears are designed for strength, quietness, and long life.
 - ➌ Automatic lockup clutch, throttle-modulated for maximized fuel economy and enhanced engine braking. Automatic upshifting and downshifting within each drive range. Built-in inhibitors prevent downshifts or shifts into reverse unless vehicle speed is within an acceptable range.
 - ➍ The Allison three-element torque converter provides smooth, shock-free operation. A choice of converters permits matching the MT 643 to a wide variety of engines.
 - ➎ Converter-driven power take-off drive on right side of transmission (as viewed from rear) is standard. Design is SAE 6-bolt.
 - ➏ Provisions for neutral start switch, reverse signal switch, SAE regular -duty thread-type speedometer drive, and parking brake.
 - ➐ 5.1 inch oil pan is standard. Optional 4.3 and 7.1 inch pans are available when ground clearance or heavy duty operation dictates their use.
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Typical Applications [\(go to top\)](#)

- ➊ Shorthaul Tractor
 - ➋ P&D Truck
 - ➌ Fire Truck
 - ➍ Utility Truck
 - ➎ Stake Truck
 - ➏ Dump Truck
 - ➐ Flat Bed Truck
 - ➑ Motorhome
 - ➒ Beverage Truck
 - ➓ School Bus
 - ➔ Refrigerated Van
 - ➕ Refuse Truck
 - ➖ Tanker Truck
 - ➗ Wrecker
 - ➘ Other applications are available.
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