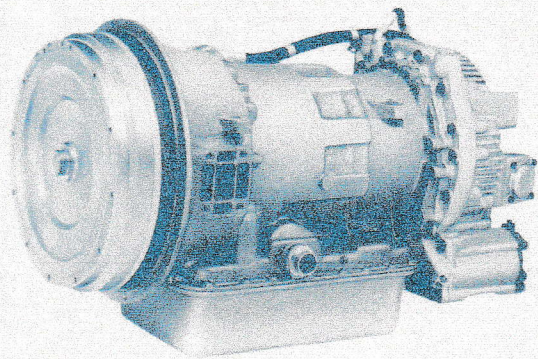


Allison Transmissions



MTB 648

Automatic Models MT/MTB 647 MT/MTB 648 up to 250 nhp (186 kW)

Specifications

	MT/MTB 647 Hydraulic	MT/MTB 648 Allison Transmission Electronic Control
General rating+		
Net input power (max)	250 nhp (186 kW)	250 nhp (186 kW)
Input speed range	2000 - 3000 rpm	1800 - 3000 rpm
Net input torque (max)	780 lb ft (1058 N·m)	780 lb ft (1058 N·m)
Vehicle weight (GVW or GCW)	Up to 55,000 lbs (24,948 kg)	Up to 55,000 lbs (24,948 kg)

Mounting

Direct	SAE 1 or 2 flywheel housing with flex plate drive
Remote	Converter housing side pads, and rear mounting top pad

Torque converter

Type	Single-stage, 3-element, multiphase	Single-stage, 3-element, multiphase
Stall torque ratio	TC 494-1.89; TC 495-2.36	TC 494-1.89; TC 495-2.36
Lockup clutch, automatic, modulated	Effective in 3rd and 4th	Varies with application
	TC-470-2.73; TC-490-2.47; TC-496-1.77	TC-470-2.73; TC-490-2.47; TC-496-1.77

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

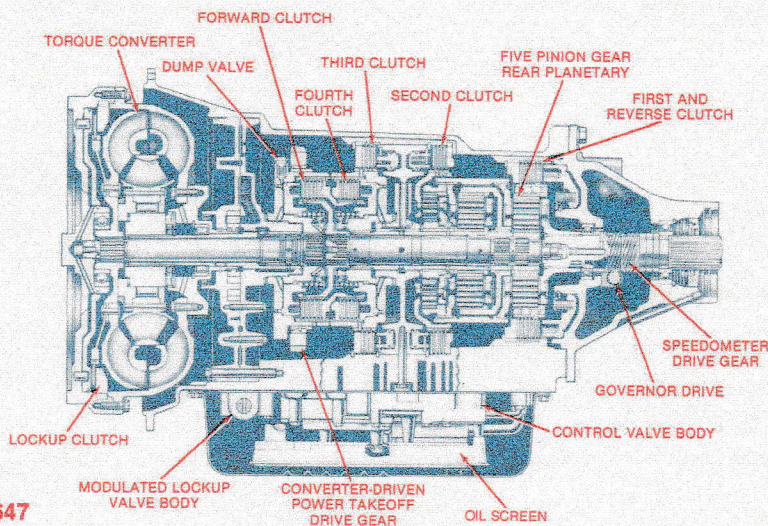
Oil Type	Dexron II®, C 4
Capacity (excluding external circuits)	18 US qts (17 liters) (w/std. oil pan)
Filter	Full flow, replaceable element, remote mounted
Cooler	Remote mounted
(Filter and cooler not furnished on transmission assembly but are supplied by vehicle manufacturer.)	

Size

Length	30.4 in (773 mm)
Width	19.3 in (489 mm)
Height (w/std. 5.1" pan)	22.4 in (568 mm)
Weight (dry)	562 lbs (255 kg)
Weight (dry) w/output retarder	703 lbs (319 kg)

+ Vocational ratings may vary by vocation. Consult Allison Transmission Sales for specific information.

Transmission Cross-section

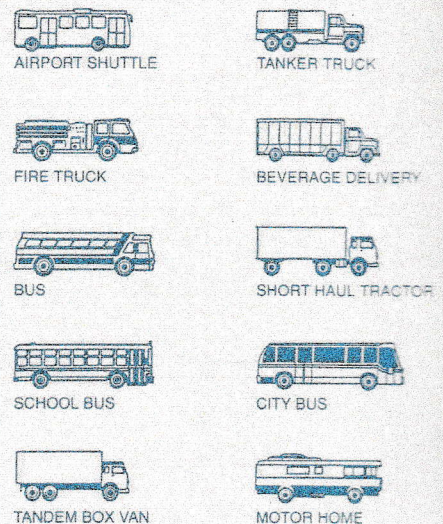


MT 647

Design Features & Benefits

- Designed for use with diesel engines up to 250 nhp (186 kW). Four forward ranges and one reverse. This transmission model is best suited for high power-to-weight vehicles such as emergency vehicles, motor homes, and some bus applications. May also be used in over-the-road truck applications.
- 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.
- 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.
- The Allison three-element torque converter provides smooth, shock-free operation. A choice of converters permits matching the MT 647 and 648 to a wide variety of engines.
- Converter-driven power take-off drive on right side of transmission (as viewed from the rear) is standard. Design is SAE 6-bolt.
- Optional output retarder, with power absorption capacity of over 500 hp (373 kW) at 2000 RPM and "high capacity" calibration, is particularly well suited for start/stop duty cycles; applies braking force directly to driveshaft, reducing vehicle brake use and wear.
- Provisions for neutral start switch, reverse signal switch, SAE regular-duty thread-type speedometer drive, and parking brake.
- Allison Transmission Electronic Controls provide: programmable features to perform vehicle and vocational requirements; built-in diagnostics which constantly monitor operation and facilitate the detection of problems if they occur; improved fuel economy; specific vehicle and vocation needs (available with the MT/MTB 648).
- 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.

Typical Applications*



* Other applications are available. Consult your local distributor for details.

SCAAN Specification Assistance.

To be sure that you get the most efficient engine/transmission package for your operation, in your territory, with your preferred vehicle, your local Allison Transmission Division distributor offers **SCAAN**.

SCAAN stands for System for Computerized Analysis and helps take the guesswork out of vehicle-buying decisions. What's more, it does so quickly and accurately through computer terminals located at all distributor outlets. This means rapid analysis of your vehicle needs on the spot.

SCAAN can compute a wide variety of vehicle performance parameters: including gradeability, acceleration and retardation. **SCAAN** will also check your powertrain specifications against Allison Transmission vocational experience to insure satisfactory vehicle performance.

SCAAN is user friendly. Interactive operation allows alternate vehicle configurations to be quickly evaluated to insure optimized powertrain selection.



Allison Transmission

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