Allison Transmission

DRIVING TRANSMISSION TECHNOLOGY®

ROUTE 66

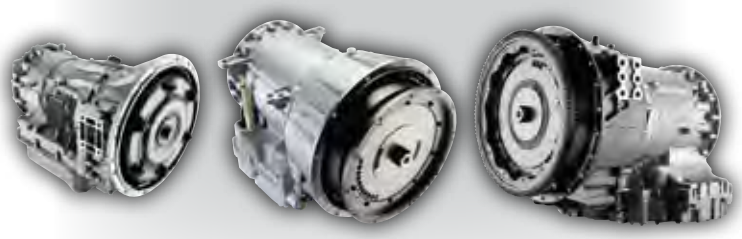
MOTORHOME SERIES

JULY 2010

Make your motorhome more at home on the road with an Allison Motorhome Series fully automatic transmission. Whatever your travel plans, there's an Allison Automatic to help you reach your destination. Each model is designed to provide enhanced performance and exceptional value.

ENGINE hp (kW)	TORQUE lb-ft (N • m)
165–650 (123–485)	420–1950 (569–2644)

GVW lbs (kg)
14,000–unlimited (6,350–unlimited)



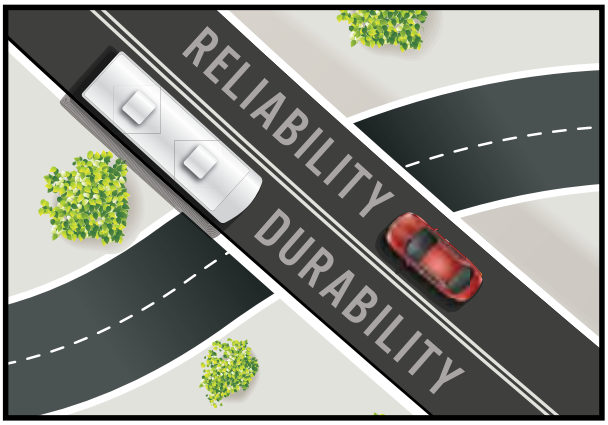
1000 MH, 2100 MH, 2200 MH, 2350 MH, 2500 MH, 2550 MH

3000 MH

4000 MH

For those who love to drive. With an Allison Automatic, you can take to the road with confidence that you'll accelerate faster, climb the steepest grades, enjoy downhill speed restraint and achieve greater maneuverability even if you have to go off-road. Allison Motorhome Series transmissions deliver the power, control and traction to handle any situation. You just can't do any better than Allison.

Proven reliability and durability. Allison Transmission has built a reputation on our ability to build transmissions that last just about forever. Allison Automatics are truck-based transmissions designed to withstand the rigors of the road and engineered for efficient, effective, long-term, worry-free operation. That is why Allison Motorhome Series automatic transmissions are the preferred choice for all types of motorhomes.



Smart controls.

Allison Motorhome Series automatic transmissions have brains in addition to brawn. Special electronic control packages provide precisely the performance features you need to enjoy the open road – wherever it may take you.

Prognostics
Calibrated to the vehicle's particular operating requirements, Allison prognostics monitor various operating parameters – oil level, oil life, filter life and transmission health – to determine and alert when service is due. This eliminates unnecessary oil and filter changes and provides maximum transmission protection.

Shift Energy Management (SEM)
Provides better engine/transmission integration to optimize the entire driveline system. The result is faster, smoother, more consistent shift quality, increased powertrain durability, improved performance and an overall more efficient vehicle operation leading to greater fuel economy.

Manual Gear Select
Manually control upshifts and downshifts, if you prefer, when driving in mountains or other kinds of rough terrain. The transmission will not allow you to select a range that will over-speed the engine.

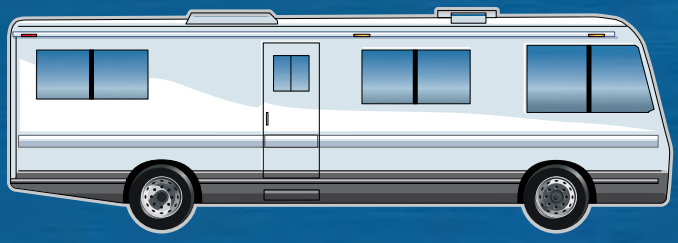
Auxiliary Function Range Inhibit
It's like an extra set of eyes to help avoid unwanted shifts out of Neutral. Integrates with virtually any vocational vehicle component.

Secondary Shift Schedule
Select between two pre-programmed shift patterns – quickly and easily. Match shift characteristics to the driving conditions with the simple push of a button.

Engine Brake Enable
Flip the dash switch and let the transmission controls handle the rest. Smart electronics recognize the most efficient times for engine brake application.

Retarder Enable
Get the best braking possible through total transmission retarder/vehicle integration. Electronic controls precisely blend the transmission, retarder and service brakes for peak efficiency.

Additional electronic control packages are available. See your local Allison representative for the ones that fit your particular application.



Comprehensive coverage.

Allison Motorhome Series models offer five-year comprehensive coverage with 100% parts and labor. Contact your Allison representative for details.†

Our extensive network of over 1,200 authorized Allison Distributors and Dealers in North America, along with over 1,500 worldwide, means convenient, factory-quality Allison Transmission service is always close at hand.

† Standard Warranty provides coverage of 2 years/80,000 miles and 100% parts and labor.

If the transmission is OEM factory filled with Allison Approved TES 295 transmission fluid, then end-user is automatically registered, at no additional cost, for Extended Transmission Coverage, which provides coverage of 5 years/200,000 miles and 100% parts and labor. Use of Allison Approved TES 295 transmission fluid and Genuine Allison Filters is required to maintain Extended Transmission Coverage. Failure to meet these guidelines will result in only Standard Warranty coverage as described above.

You're headed in the right direction.

Allison Motorhome Series automatic transmissions offer advanced electronic controls to get more out of the latest engines, while putting more power and control to the wheels. There's no struggle during acceleration. Whatever your travel plans, there's an Allison Automatic to help you reach your destination. Each model is designed to provide enhanced performance and exceptional value.

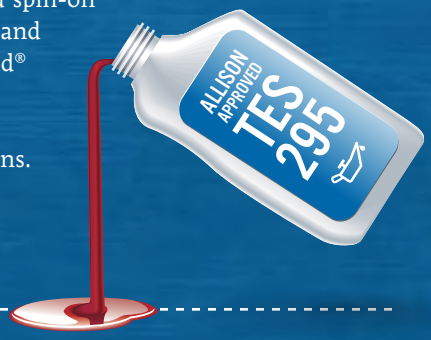
Life cycle value.

When you factor in all life cycle costs — vehicle purchase price, insurance, fuel, tires, preventive maintenance, component repair, taxes and retail resale value, an Allison Automatic-equipped vehicle costs less per mile* to operate than a comparable competitively equipped vehicle.

*Results may vary depending on your operating conditions.

Maintenance made easy.

Routine oil and filter changes are the only regular preventive maintenance required with an Allison Automatic. Easily accessible integral and spin-on oil filters reduce labor costs and valuable downtime. TranSynd® TES 295 transmission fluid greatly extends oil change intervals for most applications.



Safe driving intelligence. Allison Motorhome Series automatic transmissions provide customized performance at your fingertips. The transmission will automatically select gears based on engine rpm, throttle position, vehicle load and road speed. However, you can manually control the upshifts and downshifts when it is necessary for safe driving in mountains or other kinds of rough terrain. The transmission will not allow you to select a range that will over-speed the engine.

No power interrupts. On a vehicle with an automated manual transmission, the power interrupts that occur during shift changes result in lower average wheel horsepower. With an Allison Automatic, there is no power interrupt during shift changes so Allison Automatics can make full use of the engine's horsepower. No power interrupts also contribute to a smoother ride.

Keeping it safe. Since an Allison Automatic is a true, fully automatic transmission, the driver has more time to check mirrors and to look forward and behind. There simply aren't as many distractions. And that gives the driver more time to do what's necessary. And what's necessary is being safe on the road.

Torque converter. Increased shifting performance, faster acceleration, greater operating flexibility and minimal rollback are all advantages attributed to the patented heavy-duty Allison torque converter. The torque converter's cushion effect reduces shock and strain on all driveline components.

Information Highway

Visit **www.allisontransmission.com** for a comprehensive library of informational brochures, including Mechanic's Tips, Operator's Manuals, Parts Catalogs, Troubleshooting Flyers and Service Manuals.

Ratings and Specifications

RATINGS

MODEL	RATIO	PARK PAWL	MAX INPUT POWER[1]	MAX INPUT TORQUE[1]	MAX INPUT TORQUE w/SEM OR TORQUE LIMITING[1,2]	MAX TURBINE TORQUE[3]	MAX GVW	MAX GCW
			hp (kW)	lb-ft (N • m)	lb-ft (N • m)	lb-ft (N • m)	lbs (kg)	lbs (kg)
1000 MH	Close Ratio	Yes	340[4,5] (254)[4,5]	575 (780)	660[5] (895)[5]	950[4] (1288)[4]	22,000 (10,000)	26,001 (11,800)
2100 MH	Close Ratio	No	340[4,5] (254)[4,5]	575 (780)	660[5] (895)[5]	950[4] (1288)[4]	26,000 (11,800)	30,000 (13,600)
2200 MH	Close Ratio	Yes	340[4,5] (254)[4,5]	575 (780)	660[5] (895)[5]	950[4] (1288)[4]	26,000 (11,800)	26,001 (11,800)
2350 MH[5]	Close Ratio	Yes	340[4] (254)[4]	575 (780)	660[5] (895)[5]	950[4] (1288)[4]	30,000 (13,600)	30,000 (13,600)
2500 MH	Wide Ratio	No	340[4,5] (254)[4,5]	575 (780)	700[5,6] (950)[5,6]	950[4] (1288)[4]	33,000 (15,000)	33,000 (15,000)
2550 MH[5]	Wide Ratio	Yes	340[4] (254)[4]	575 (780)	660[5] (895)[5]	950[4] (1288)[4]	30,000 (13,600)	30,000 (13,600)
3000 MH	Close Ratio	n/a	450 (336)	1250 (1695)	n/a	1700 (2305)	–	–
4000 MH	Close Ratio	n/a	650 (485)	1950 (2644)	n/a	2800 (3795)	–	–

1 Gross ratings as defined by ISO 1585 or SAE J1995. 2 SEM = engine controls with Shift Energy Management. 3 Turbine torque limit based on iSCAAN standard deductions.
4 SEM and torque limiting are required to obtain this rating. 5 Check with your OEM to ensure offerings. 6 Available in gears three through five.

GEAR RATIOS – TORQUE CONVERTER MULTIPLICATION NOT INCLUDED

MODEL	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH	REVERSE
1000/2100 MH	3.10:1	1.81:1	1.41:1	1.00:1	0.71:1	0.61:1[1]	-4.49:1
2200/2350 MH	3.10:1	1.81:1	1.41:1	1.00:1	0.71:1	0.61:1[1]	-4.49:1
2500/2550 MH	3.51:1	1.90:1	1.44:1	1.00:1	0.74:1	0.64:1[1]	-5.09:1
3000 MH	3.49:1	1.86:1	1.41:1	1.00:1	0.75:1	0.65:1	-5.03:1
4000 MH	3.51:1	1.91:1	1.43:1	1.00:1	0.74:1	0.64:1	-4.80:1

1 Check with your OEM to ensure offerings.

ENGINE SPEEDS

MODEL	FULL LOAD GOVERNED SPEED	IDLE SPEED IN DRIVE	OUTPUT SHAFT SPEED
	Min-Max (rpm)	Min-Max (rpm)	rpm
1000 MH	2200-4600[1]	500-820	5000
2100/2200 MH	2200-4600[1]	500-820	5000
2350 MH	2200-4600[1]	500-820	5000
2500 MH	2200-3200	500-820	4500
2550 MH	2200-3200	500-820	4500
3000 MH	2000-2800	500-800	3600[2]
4000 MH	1700-2300	500-800	–

1 Engines with full load governed speed greater than 3800 rpm require Application Engineering review. 2 Retarder-equipped models only.

OPTIONAL POWER TAKEOFF PROVISION – CONTINUOUS OPERATION

BASE MODEL	MOUNTING PAD POSITIONS VIEWED FROM REAR	DRIVE GEAR RATING WITH ONE PTO	DRIVE GEAR RATING WITH TWO PTOS	DRIVE
		lb-ft (N • m)	lb-ft (N • m)	
1000 MH	3 and 9 o'clock	250 (339)	200[1] (271)[1]	Turbine
2000 MH	3 and 9 o'clock	250 (339)	200[1] (271)[1]	Turbine
3000 MH	4 and 8 o'clock	485 (660)	685[2] (930)[2]	Engine
4000 MH	1 and 8 o'clock	685 (930)	1175[2] (1595)[2]	Engine

1 Rating per PTO. 2 Total on drive gear. Minimum 600 rpm idle speed required when dual PTOs are used simultaneously.

OPTIONAL RETARDER PROVISION
– INTEGRAL, HYDRAULIC TYPE

BASE MODEL	TORQUE CAPACITY lb-ft (N • m)	POWER CAPACITY hp (kW)
3000 MH		
– High	1600 (2170)	600 (447)
– Medium	1300 (1760)	500 (373)
– Low	1100 (1490)	400 (298)
4000 MH		
– High	2000 (2710)	600 (447)
– Medium	1600 (2170)	600 (447)
– Low	1300 (1760)	500 (373)

TORQUE CONVERTER SPECIFICATIONS

BASE MODEL	TORQUE CONVERTER	NOMINAL STALL TORQUE
1000 MH	TC-210	2.05
	TC-211	1.91
	TC-221	1.73
	TC-222	1.58
2000 MH	TC-210	2.05
	TC-211	1.91
	TC-221	1.73
	TC-222	1.58
3000 MH	TC-411	2.71
	TC-413	2.44
	TC-415	2.35
	TC-417	2.20
	TC-418	1.98
	TC-419	2.02
	TC-421	1.77
4000 MH	TC-521	2.42
	TC-531	2.34
	TC-541	1.90
	TC-551	1.79
	TC-561	1.58

PHYSICAL DESCRIPTION

BASE MODEL	LENGTH[1] in (mm)	DEPTH[2] w/DEEP OIL PAN/SUMP in (mm)	DEPTH[2] w/SHALLOW OIL PAN/SUMP in (mm)	DRY WEIGHT lbs (kg)
1000 MH				
– SAE No. 3 mounting	28.01 (711.4)	11.22 (284.9)	10.71 (272.0)	330 (150)
– SAE No. 2 mounting	28.39 (721.1)	11.22 (284.9)	10.71 (272.0)	330 (150)
2000 MH				
– SAE No. 3 mounting	28.01 (711.4)	11.22 (284.9)	–	330 (150)
– SAE No. 2 mounting	28.39 (721.1)	11.22 (284.9)	–	330 (150)
3000 MH				
– Basic model	28.29 (718.6)	12.90 (327.8)	11.14 (283.1)	535 (243)
– With PTO only	32.49 (825.4)	12.90 (327.8)	11.14 (283.1)	575 (261)
– With retarder only	28.29 (718.6)	12.90 (327.8)	11.14 (283.1)	615 (279)
– With PTO & retarder	32.49 (825.4)	12.90 (327.8)	11.14 (283.1)	655 (297)
4000 MH				
– Basic model	30.54 (775.8)	14.75 (374.7)	13.17 (334.6)	831 (377)
– With PTO only	33.42 (848.8)	14.75 (374.7)	13.17 (334.6)	893 (405)
– With retarder only	30.54 (775.8)	14.75 (374.7)	13.17 (334.6)	906 (411)
– With PTO & retarder	33.42 (848.8)	14.75 (374.7)	13.17 (334.6)	968 (439)

1 Length measured from flywheel housing to end of output shaft . 2 Depth measured below transmission centerline.

OIL SYSTEM

BASE MODEL	CAPACITY[1] quarts (liters)	MAIN CIRCUIT FILTER	LUBE CIRCUIT FILTER	ELECTRONIC OIL LEVEL SENSOR (OLS)
1000 MH		Spin-On Canister	–	–
– Deep Oil Pan	14.8 (14.0)			
– Shallow Oil Pan	12.7 (12.0)			
2000 MH		Spin-On Canister	–	–
– Deep Oil Pan	14.8 (14.0)			
3000 MH		Integral	Integral	Standard
– Deep Oil Sump w/o PTO	29 (27.4)			
– Shallow Oil Sump w/o PTO	26 (24.6)			
4000 MH		Integral	Integral	Standard
– Deep Oil Sump and PTO	51 (48)			
– Deep Oil Sump	48 (45)			
– Shallow Oil Sump and PTO	43 (41)			
– Shallow Oil Sump	40 (38)			

Recommended oil type for all models is Allison Approved TES 295 transmission fluid.

1 Transmission only. Does not include cooler, hoses or fittings. Amount of oil necessary to fill a dry transmission.

Ask for an Allison. See your dealer for a complete listing of vehicles featuring Allison fully automatic transmissions, or contact your Allison representative. For the representative close to you, visit **www.allisontransmission.com.**

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