

Be More Productive In Any Environment With Allison



Rugged Duty Series™



Working Harder And Smarter

Your trucks and drivers work hard in tough conditions, day in, day out. Increase performance and productivity to a whole new level by specifying Allison Rugged Duty Series™ fully automatic transmissions.

Our patented Continuous Power Technology™ delivers smoother, seamless, full-power shifts, superior acceleration and startability. Each shift is made automatically when appropriate, allowing drivers to precisely manage performance and exercise superior vehicle control.

Allison Automatics perform better than manual or automated manual transmissions (AMTs) that lose power and torque every time they shift, resulting in inefficient operation and less productivity. Faster acceleration means more work accomplished, which means more to your bottom line.

On-Pavement

Full-power shifts mean shorter trip times. Manuals require relentless shifting and shifting with an AMT can often be delayed and unpredictable—especially in traffic. Neither can compare to Allison's superior vehicle control and continuous power to the wheels.

Off-Road

Allison Automatics provide smooth, effortless shifting and precise traction control. While manuals and AMTs cause the drive wheels to hop and cause damage to the drivetrain, Allison Automatics achieve just the right amount of traction for load and ground conditions—dirt, mud, sand or gravel. They can take whatever you throw at them and still deliver.

More Control With 2nd Reverse¹

Allison offers a second “deep reverse” in addition to the standard reverse to provide greater control and engine braking during operation on steep grades. 2nd Reverse will also enable more maneuverability when operating in confined spaces. When a vehicle is in 2nd Reverse, it has a slow creep capability with high engine speeds. With a mechanical ratio of -17.12:1², it will have an effective torque converter multiplied ratio up to 32.5:1. 2nd Reverse provides overall better performance and enhanced applicability for a variety of applications.

¹ Available on 4700 and RDS models. ² SEM/LRTP or LRTP only is required.





1000 RDS, 1350 RDS, 2100 RDS,
2200 RDS, 2300 RDS, 2350 RDS,
2500 RDS, 2550 RDS



3000 RDS, 3500 RDS



4000 RDS, 4500 RDS, 4700 RDS

Proven Reliability And Durability

Our customers' ability to perform and produce is directly tied to the vehicles and equipment used to do the work. Allison transmissions are designed to deliver unrivaled reliability and durability while helping to protect vehicle driveline. By engineering and manufacturing reliable, fully automatic transmissions and propulsion systems, our customers experience reduced downtime and get more work done. That's why Allison Automatics are the preferred choice for on-/off-highway, rugged duty applications.

Lower Cost Of Operation

When you factor in all life-cycle costs (vehicle purchase price, fuel, tires, preventive maintenance, component repair, driver wages and retail resale value)—along with the increased productivity—an Allison Automatic-equipped vehicle costs less per mile to operate than a comparable competitively-equipped vehicle. Calculate the life-cycle costs and savings for your vehicle using the Allison Advantage Calculator at allisontransmission.com.

ENGINE	hp (kW)	TORQUE	lb-ft (N•m)
	165–600 (123–447)		420–1850 (569–2508)
GVW	lbs (kg)		
	14,000—unlimited (6,350—unlimited)		

FUELSENSE® 2.0

with DynActive™ Shifting

Features

FuelSense® 2.0 presents new and upgraded FuelSense® features to provide even more precise balancing of fuel economy and performance:

DynActive™ Shifting—This new innovative shift scheduling uses an algorithm to choose the most efficient shift point, based on your specifications, vehicle and environmental parameters. Older shifting technologies use shift schedules with fixed shift points.

Neutral at Stop—This feature trims fuel consumption and emissions by reducing or eliminating the load on the engine when the vehicle is stopped. There are two versions of Neutral at Stop:

- **Standard** – Provides partial (first-level) neutral at stop.
- **Premium** – Provides full neutral at stop and a new, low-speed coasting capability.

Both versions lock the output while stopped to prevent rollback.

Acceleration Rate Management—A feature that mitigates aggressive driving by automatically controlling engine torque. Newly updated, in addition to five levels of control, it provides more precision by limiting vehicle acceleration to a customized calibrated rate.

Shifting Performance

Thanks to Allison's patented torque converter design, you will enjoy full power shifts. Manuals and AMTs with mechanical clutches lose power every time they shift. An Allison fully automatic transmission, on the other hand, doesn't lose power when it shifts, resulting in a smoother transition between gears.

Allison's Continuous Power Technology™ provides more power to the wheels, which translates to minimal power loss and seamless shifts. Allison fully automatic transmissions allow vehicles to accelerate faster and run at higher average speeds, shortening delivery times and covering more ground. This can provide your fleet with the ability to make more runs, increasing your productivity and profits.

Startability

Say goodbye to the hesitation that is so common on launch with manual and AMT transmissions. With Continuous Power Technology™, an Allison can use the full torque from the engine and multiply it with our patented torque converter. This produces more rotations per minute (RPMs), allowing a vehicle to launch faster and smoother, regardless of the weight of the trailer.



5th Generation Electronic Controls

This next generation of Allison electronic controls offers a variety of features to further improve fuel economy and maximize transmission protection with advanced prognostics.

Prognostics

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



Oil Life Monitor

Based on the vehicle's duty cycle, this feature determines fluid life and alerts you when a fluid change is required. Not only does it help you get maximum oil life while providing the maximum protection for the transmission, the Oil Life Monitor also saves you money by preventing unnecessary fluid changes.



Filter Life Monitor

This provides an alert when the transmission's fluid filter(s) need to be replaced. It helps extend filter change intervals to reduce routine maintenance downtime and saves you money in the long run, all the while providing maximum protection for the transmission.



Transmission Health Monitor

This prognostic feature determines the condition of the transmission's clutches and alerts you when clutch maintenance is required. It helps avoid costly repairs and downtime by taking the guesswork out of scheduling routine transmission maintenance. And, it ensures your transmission is operating at its maximum performance level.

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

Ratings And Specifications

RATINGS

MODEL	RATIO	PARK PAWL	MAX INPUT POWER ¹	MAX INPUT TORQUE ¹	MAX INPUT TORQUE w/SEM TORQUE LIMITING ^{1,2}	MAX TURBINE TORQUE ³	MAX GVW	MAX GCV
			hp (kW)	lb-ft (N•m)	lb-ft (N•m)	lb-ft (N•m)	lbs (kg)	lbs (kg)
1000 RDS	Close Ratio	Yes	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	19,500 (8845)	26,000 (11,800)
- xFE	Close Ratio	Yes	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	19,500 (8845)	26,000 (11,800)
1350 RDS	Close Ratio	Yes	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	19,500 (8845)	30,000 (13,600)
- xFE	Close Ratio	Yes	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	19,500 (8845)	30,000 (13,600)
2100 RDS	Close Ratio	No	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	26,000 (11,800)	26,000 (11,800)
- xFE	Close Ratio	No	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	26,000 (11,800)	26,000 (11,800)
2200 RDS	Close Ratio	Yes	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	26,000 (11,800)	26,000 (11,800)
- xFE	Close Ratio	Yes	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	26,000 (11,800)	26,000 (11,800)
2300 RDS ⁵	Close Ratio	No	365 ⁴ (272) ⁴	N/A	510 ⁴ (691) ⁴	950 ⁴ (1288) ⁴	33,000 (15,000)	33,000 (15,000)
2350 RDS ⁷	Close Ratio	Yes	340 ⁴ (254) ⁴	575 (780)	660 ⁴ (895) ⁴	950 ⁴ (1288) ⁴	30,000 (13,600)	30,000 (13,600)
- xFE	Close Ratio	Yes	340 ⁴ (254) ⁴	575 (780)	660 ⁴ (895) ⁴	950 ⁴ (1288) ⁴	30,000 (13,600)	30,000 (13,600)
2500 RDS								
- On-/Off-Highway	Wide Ratio	No	340 ^{4,7} (254) ^{4,7}	575 (780)	660 ^{4,7} (895) ^{4,7}	950 ⁴ (1288) ⁴	33,000 (15,000)	33,000 (15,000)
- Refuse	Wide Ratio	No	300 (224)	550 (746)	565 ⁴ (766) ⁴	950 ⁴ (1288) ⁴	24,200 (11,000)	24,200 (11,000)
- xFE	Wide Ratio	No	340 ⁴ (254) ⁴	575 (780)	660 ⁴ (895) ⁴	950 ⁴ (1288) ⁴	24,200 (11,000)	24,200 (11,000)
2550 RDS ⁷	Wide Ratio	Yes	340 ⁴ (254) ⁴	575 (780)	660 ⁴ (895) ⁴	950 ⁴ (1288) ⁴	33,000 (15,000)	33,000 (15,000)
- xFE	Wide Ratio	Yes	340 ⁴ (254) ⁴	575 (780)	660 ⁴ (895) ⁴	950 ⁴ (1288) ⁴	30,000 (13,600)	30,000 (13,600)
3000 RDS								
- On-/Off-Highway	Close Ratio	N/A	370 (276)	1100 (1491)	1250 ^{6,7} (1695) ^{6,7}	1600 (2169)	80,000 (36,288)	80,000 (36,288)
- Mixer	Close Ratio	N/A	370 (276)	1100 (1491)	1250 ^{6,7} (1695) ^{6,7}	1600 (2169)	62,000 (28,123)	—
- Refuse	Close Ratio	N/A	370 (276)	1100 (1491)	1250 ^{6,7} (1695) ^{6,7}	1600 (2169)	62,000 (28,123)	—
- Specialty PTO/HET	Close Ratio	N/A	370 (276)	1250 ⁷ (1695) ⁷	N/A	1700 (2305)	—	—
3500 RDS								
- On-/Off-Highway	Wide Ratio	N/A	330 (246)	860 (1166)	1050 ⁸ (1424) ⁸	1450 ⁴ (1966) ⁴	80,000 (36,288)	80,000 (36,288)
- Mixer/Refuse	Wide Ratio	N/A	330 (246)	860 (1166)	N/A	1420 (1925)	60,000 (27,216)	—
- Specialty PTO	Wide Ratio	N/A	330 (246)	950 (1288)	1050 ⁸ (1424) ⁸	1450 (1966)	—	—
- HET	Wide Ratio	N/A	330 (246)	985 (1335)	1050 ⁸ (1424) ⁸	1450 (1966)	—	—
4000 RDS								
- On-/Off-Highway	Close Ratio	N/A	565 ¹¹ (421) ¹¹	1770 (2400)	1850 ¹⁰ (2508) ¹⁰	2600 (3525)	—	—
- Refuse	Close Ratio	N/A	500 (373)	1550 (2102)	N/A	2450 (3322)	—	—
- Specialty PTO	Close Ratio	N/A	565 (421)	1770 (2400)	N/A	2600 (3525)	—	—
- HET	Close Ratio	N/A	600 (447)	1850 (2508)	N/A	2600 (3525)	—	—
4500 RDS								
- On-/Off-Highway	Wide Ratio	N/A	565 ¹¹ (421) ¹¹	1650 (2237)	1850 ¹⁰ (2508) ¹⁰	2450 (3322)	—	—
- Refuse	Wide Ratio	N/A	500 (373)	1550 (2102)	N/A	2450 (3322)	—	—
- Specialty PTO	Wide Ratio	N/A	565 ¹¹ (421) ¹¹	1650 (2237)	1770 ⁸ (2400) ⁸	2600 (3525)	—	—
- HET	Wide Ratio	N/A	600 ¹¹ (447) ¹¹	1650 (2237)	1850 ⁸ (2508) ⁸	2600 (3525)	—	—
4700 RDS								
- On-/Off-Highway	Widest Ratio	N/A	565 ¹¹ (421) ¹¹	1770 (2400)	1850 ⁹ (2508) ⁹	2600 (3525)	—	—
- Refuse	Widest Ratio	N/A	500 (373)	1550 (2102)	N/A	2450 (3322)	—	—
- HET	Widest Ratio	N/A	600 (447)	1850 (2508)	N/A	2600 (3525)	—	—

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 Only available for VORTEC 8-1L gasoline powered engine applications. ⁶ Requires Allison Transmission engine-transmission combination approval. Only available in gears three through six. ⁷ Check with your OEM to ensure offerings. ⁸ Available in gears two through six. ⁹ Only available in gears four through seven. ¹⁰ Only available in gears three through six. ¹¹ With and without torque limiting.

GEAR RATIOS – TORQUE CONVERTER MULTIPLICATION NOT INCLUDED

MODEL	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH	SEVENTH	REVERSE	2ND REVERSE
1000/1350/2100/ 2200/2300/2350 RDS	3.10:1	1.81:1	1.41:1	1.00:1	0.71:1	0.61:1 ¹	—	-4.49:1	—
2500/2550 RDS	3.51:1	1.90:1	1.44:1	1.00:1	0.74:1	0.64:1 ¹	—	-5.09:1	—
3000 RDS	3.49:1	1.86:1	1.41:1	1.00:1	0.75:1	0.65:1	—	-5.03:1	—
3500 RDS	4.59:1	2.25:1	1.54:1	1.00:1	0.75:1	0.65:1	—	-5.00:1	—
4000 RDS	3.51:1	1.91:1	1.43:1	1.00:1	0.74:1	0.64:1	—	-4.80:1	—
4500 RDS	4.70:1	2.21:1	1.53:1	1.00:1	0.76:1	0.67:1	—	-5.55:1	—
4700 RDS	7.63:1*	3.51:1	1.91:1	1.43:1	1.00:1	0.74:1	0.64:1	-4.80:1	-17.12:1 ²

* Manually selected first gear. ¹ Check with your OEM to ensure offerings. ² SEM/LRTP or LRTP Only is required.

ENGINE SPEEDS

MODEL	FULL LOAD GOVERNED SPEED Min-Max (rpm)
1000/1350 RDS	2200-3800 ¹
2100/2200 RDS	2200-3800 ¹
2300 RDS	2200-5000 ¹
2350 RDS	2200-3800 ¹
2500 RDS	2200-3800
2550 RDS	2200-3800
3000/3500 RDS	1900-2800
4000/4500/4700 RDS	1700-2300

¹ Engines with full-load governed speed greater than 3800 rpm require Application Engineering review.

OPTIONAL RETARDER PROVISION
– INTEGRAL, HYDRAULIC TYPE

BASE MODEL	TORQUE CAPACITY lb-ft (N•m)	POWER CAPACITY hp (kW)
3000 RDS		
– High	1600 (2170)	600 (447)
– Medium	1300 (1763)	500 (373)
– Low	1100 (1490)	400 (298)
– Very Low	811 (1100)	500 (373)
– Ultra Low	553 (750)	400 (298)
4000 ¹ RDS		
– High	2000 (2712)	600 (447)
– Medium	1600 (2170)	600 (447)
– Low	1300 (1763)	500 (373)

¹ Only medium-capacity available on 4700 RDS.

TORQUE CONVERTER SPECIFICATIONS

BASE MODEL	TORQUE CONVERTER	NOMINAL STALL TORQUE
1000 RDS	TC-210	2.05
	TC-211	1.91
	TC-221	1.73
	TC-222	1.58
2000 RDS	TC-210	2.05
	TC-211	1.91
	TC-221	1.73
	TC-222	1.58
3000 RDS	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 RDS	TC-521	2.42
	TC-531	2.34
	TC-541	1.90
	TC-551	1.79
	TC-561	1.58
	TC-571	1.62

IDLE SPEED IN DRIVE Min-Max (rpm)	OUTPUT SHAFT SPEED rpm
500-820	5000
500-820	5000
500-820	5000
500-820	5000
500-820	4500
500-820	4500
500-800	3600 ²
500-800	—

² Retarder-equipped models only.

STANDARD POWER TAKEOFF PROVISION – CONTINUOUS OPERATION

BASE MODEL	MOUNTING PAD POSITIONS VIEWED FROM REAR	DRIVE GEAR RATING WITH ONE PTO lb-ft (N•m)	DRIVE GEAR RATING WITH TWO PTOs lb-ft (N•m)	DRIVE
1000 RDS	3 and 9 o'clock	250 (339)	200 ² (271) ²	Turbine
2000 RDS	3 and 9 o'clock	250 (339)	200 ² (271) ²	Turbine
3000 ¹ RDS	side/side 4 and 8 o'clock	485 (660)	685 ^{3,4} (930) ^{3,4}	Engine
	top/side 1 and 8 o'clock	485 (660)	685 ^{3,4} (930) ^{3,4}	Engine
4000 ¹ RDS	1 and 8 o'clock	685 (930)	1175 ^{3,4} (1595) ^{3,4}	Engine

¹ PTO-delete option available. ² Rating is per PTO. ³ Total on the drive gear.
⁴ Minimum 600 rpm idle speed required when dual PTOs are used simultaneously.

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 RDS	– SAE No. 3 mounting	28.01 (711.4)	11.22 (284.9)	323 (146.5)
	– SAE No. 2 mounting	28.39 (721.0)	11.22 (284.9)	323 (146.5)
2000 RDS	– SAE No. 3 mounting	28.01 (711.4)	11.22 (284.9)	323 (146.5)
	– SAE No. 2 mounting	28.39 (721.0)	11.22 (284.9)	323 (146.5)
3000 RDS	– Basic model	28.3 (718.7)	12.90 (327.7)	535 (243)
	– With PTO only	32.49 (825.4)	12.90 (327.7)	575 (261)
	– With retarder only	28.29 (718.6)	12.90 (327.7)	615 (279)
	– With PTO & retarder	32.49 (825.4)	12.90 (327.7)	655 (298)
4000 RDS	– Basic model	30.54 (775.8)	14.75 (374.7)	831 (377)
4500 RDS	– With PTO only	33.41 (848.7)	14.75 (374.7)	893 (405)
	– With retarder only	30.54 (775.8)	14.75 (374.7)	906 (411)
4700 RDS	– With PTO & retarder	33.41 (848.7)	14.75 (374.7)	968 (439)
	– Basic model	40.61 (1031.6)	14.89 (378.2)	1087 (493)
	– With PTO only	43.49 (1104.5)	14.89 (378.2)	1149 (521)
	– With retarder only	40.61 (1031.6)	14.89 (378.2)	1162 (527)
	– With PTO & retarder	43.49 (1104.6)	14.89 (378.2)	1224 (555)

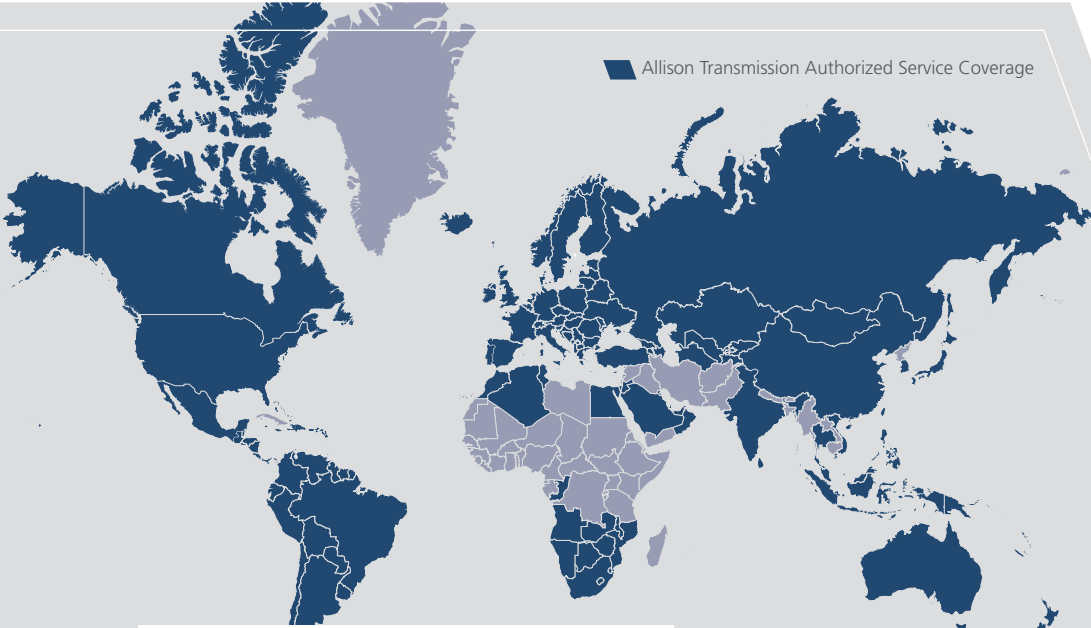
¹ Length measured from flywheel housing to end of output shaft. ² Depth measured below transmission centerline.

OIL SYSTEM

BASE MODEL	CAPACITY ¹ quarts (liters)	MAIN CIRCUIT FILTER	LUBE CIRCUIT FILTER	ELECTRONIC OIL LEVEL SENSOR (OLS)
1000 RDS		Spin-On Canister	—	—
– Standard Oil Deep Sump	13.7 ² (13) ²			
2000 RDS		Spin-On Canister	—	—
– Standard Oil Deep Sump	13.7 ² (13) ²			
3000 RDS		Integral	Integral	Standard
– Deep Oil Sump w/o PTO	29 ² (27.4) ²			
4000/4500 RDS		Integral	Integral	Standard
– Deep Oil Sump and PTO	51 ² (48) ²			
– Deep Oil Sump w/o PTO	48 ² (45) ²			
4700 RDS		Integral	Integral	Standard ³
– Deep Oil Sump and PTO	54 ² (51) ²			
– Deep Oil Sump w/o PTO	51 ² (48) ²			

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

¹ Transmission only. Does not include cooler, hoses or fittings. ² Amount of oil necessary to fill a dry transmission.
³ 4700 RDS retarder model must use 4-inch sump without OLS.



Allison Transmission Authorized Service Coverage

A World Of Support

From our headquarters in Indianapolis, Indiana, USA, to our manufacturing plants in Hungary and India, to approximately 1,400 Allison Authorized Distributors and Dealers around the globe, you are never far from the products, training, service and support you demand.

Our support starts from the moment an Allison transmission is specified. We work with you to ensure that the model and ratings fit your engine to create a tailored package of powerful performance and reliable efficiency. When you need parts or service, you can count on global access to factory-trained specialists and Allison Genuine Parts™.

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Information or specifications subject to
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allisontransmission.com

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