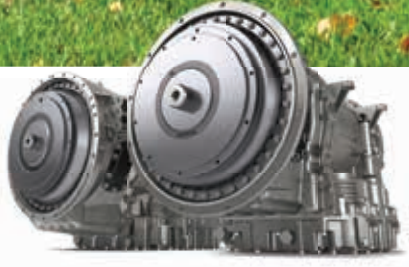
Allison Transmission®

Refuse



Pick Up Your Fleet's Bottom Line

Faster Acceleration =
Higher Average Speeds =
More Loads Per Day

Allison Automatics Help You Make More Stops and Lift More Bins

Our transmissions are the preferred choice of sanitation departments around the world because they make fleets more productive. They provide superior acceleration when compared to an automated manual transmission (AMT), enabling roll-offs and traditional collection trucks to collect more trash in the same amount of time.

Our Continuous Power Technology™ delivers more power to the wheels than other transmission technologies. This allows for superior launch with up to a 14% higher average speed. An Allison fully automatic transmission eliminates power interrupts while a manual or AMT loses power with every shift.

Up To

90%

Noise Reduction

Compared to a Diesel-Powered Vehicle

The Most Powerful Take-Off

Allison's Power Take-Off (PTO) can be driven at engine speed. Our Transmission Control Module commands how and when the PTO engages and monitors operating conditions—minimizing potential damage and hazards, making operation easier for drivers.

Allison + Natural Gas—A Perfect Fit

Allison Automatics get the most out of medium- and heavy-duty vehicles equipped with natural gas engines—both compressed (CNG) and liquefied natural gas (LNG). This allows these vehicles to maximize performance while using the cleaner and quieter natural gas engine.

Our torque converter's superior control at low speed and multiplication of engine torque give natural gas engines superior launch, while our electronic controls and gearbox designs allow for full-power shifting.

Experience the Allison Difference

Allison's Continuous Power Technology™ does not require torque interrupts during range shifts with CNG and LNG engines. This is something that has proved impossible for manual and automated manual transmissions, which require torque cuts to near-zero output during shifts.

To compensate for the lower power and torque per cylinder displacement associated with CNG and LNG engines, Allison's torque converter keeps vehicles from suffering the throttle-response delays seen with manuals or AMTs.

Allison Transmission® **FUELSENSE® 2.0 WITH DYNACTIVE® SHIFTING**

Get Max Performance + Fuel Economy for Your fleet

FuelSense® 2.0 provides impressive fuel savings for the demanding duty-cycles of refuse applications. This innovative technology solution uses a unique set of software and electronic controls to deliver quantifiable fuel savings of up to 6%, all while maintaining the traditional Allison advantages of quality, reliability, durability and productivity.

Through a set of proprietary software enhancements, FuelSense® 2.0 provides your refuse fleet with an infinitely variable combination of shift points. Packages come standard with DynActive® Shifting, Acceleration Rate Management and the ability to add Neutral at Stop.

Get the Best Reliability + Power on the Market

Refuse collection requires the ability to handle heavy loads and withstand heavy start-stop duty-cycles, every day. You can't afford to lose any trucks or time. Allison's torque converter reliably and smoothly multiplies engine torque, delivering more power to the wheels. By multiplying the engine power, drivers get increased performance, faster acceleration and greater operational flexibility.

Mack MR 4000 Series™

How Fleets Go Further with Allison

Outstanding Value

Allison's high-quality, ultra-reliable automatic transmissions provide peace of mind—refuse fleet owners don't have to worry about the increased repairs, downtime and maintenance of AMT vehicles. The most uptime means the industry's best total cost of ownership.

Optional Integral Retarder

Our fully automatic transmissions provide industry-leading ease of operation versus the stress and rougher ride of an AMT vehicle due to our optional integral retarder, which takes the load off the service brakes, reducing heat and fade.

Start-Stop Fuel Economy

Since our torque converter supports the engine during vehicle startability, Allison-equipped vehicles deliver peak fuel efficiency.

Smart Controls

Allison transmissions have brains in addition to muscle. Allison's latest electronic Input/Output control technology and software packages provide precisely the performance and efficiency features needed to get your job done on time and under budget.

Relentless Innovation

Allison Transmission is leading the charge in innovative propulsion solutions. Our eGen Power™ fully integrated zero emission electric axle is a powerful option with unprecedented capabilities, perfect for fleets headed down the path to full electrification.

Rugged Duty Series™ Ratings

Model	Ratio	Park Pawl	With Torque Management			Without Torque Management			Max GVW	Max GCW
			Gross Input Power	Gross Input Torque	Net Turbine Torque	Gross Input Power	Gross Input Torque	Net Turbine Torque		
			hp (kW)	hp (kW)	hp (kW)	hp (kW)	hp (kW)	hp (kW)	hp (kW)	hp (kW)
2500[1]	Wide	No	300 (224)	565 (766)	950 (1288)	300 (224)	550 (746)	850 (1152)	24,200 (11,000)	24,200 (11,000)
3000	Close		370 (276)	1250[2,3] (1695)[2,3]	1600 (2169)	370 (276)	1100 (1491)	1600 (2169)	62,000 (28,123)	–
3500	Wide					330 (246)	860 (1166)	1420 (1925)	–	–
4000	Close					500 (373)	1550 (2102)	2450 (3322)	–	–
4500	Wide					500 (373)	1550 (2102)	2450 (3322)	–	–
4700	Deep					500 (373)	1550 (2102)	2450 (3322)	–	–

1 Available with xFE. 2 Requires Allison Transmission engine-transmission combination approval. Only available in gears three through six. 3 Check with your OEM to ensure offerings.

Gear Ratios Torque Converter Multiplication Not Included

Model	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Reverse	2nd Reverse
2500[1]	3.51:1	1.90:1	1.44:1	1.00:1	0.74:1	0.64:1[2]	–	-5.09:1	–
3000	3.49:1	1.86:1	1.41:1	1.00:1	0.75:1	0.65:1	–	-5.03:1	–
3500	4.59:1	2.25:1	1.54:1	1.00:1	0.75:1	0.65:1	–	-5.00:1	–
4000	3.51:1	1.91:1	1.43:1	1.00:1	0.74:1	0.64:1	–	-4.80:1	–
4500	4.70:1	2.21:1	1.53:1	1.00:1	0.76:1	0.67:1	–	-5.55:1	–
4700	7.63:1[2]	3.51:1	1.91:1	1.43:1	1.00:1	0.74:1	0.64:1	-4.80:1	-17.12:1[3]

1 Available with xFE. 2 Check with you OEM to ensure offerings. 3 SEM/LRTP or LRTP only is required.

Optional Retarder Provision Integral, Hydraulic Type

Model	Level	Torque Capacity	Power Capacity
		lb-ft (N•m)	hp (kW)
3000	High	1600 (2170)	600 (447)
	Medium	1300 (1763)	500 (373)
	Low	1100 (1490)	400 (298)
	Very Low	811 (1100)	N/A
	Ultra Low	553 (750)	N/A
4000[1]	High	2000 (2712)	600 (447)
	Medium	1600 (2170)	600 (447)
	Low	1300 (1763)	500 (373)

1 High and low now available on all 4000 Series 7 speeds.

2500 RDS

3000 RDS
3500 RDS

4000 RDS
4500 RDS
4700 RDS

Rugged Duty Series™ Physical Description

Base Model	Vocation	Length[1]	Depth[2] w/Deep Oil Pan/Sump	Depth[2] w/Shallow Oil Pan/Sump	Dry Weight
		in (mm)	in (mm)	in (mm)	lbs (kg)
3000					
Basic model	RDS[4]	28.30 (718.7)	12.90 (327.7)	11.14 (283.0)	535 (243)
With PTO only	RDS[4]	32.50 (825.4)	12.90 (327.7)	11.14 (283.0)	575 (261)
With retarder only	RDS[4]	28.29 (718.5)	12.90 (327.7)	11.14 (283.0)	615 (279)
With PTO + retarder	RDS[4]	32.49 (825.4)	12.90 (327.7)	11.14 (283.0)	655 (298)
4000/4500					
Basic model	RDS[5]	30.54 (775.8)	14.75 (374.7)	13.29 (337.6)	831 (377)
With PTO only	RDS[5]	33.41 (848.8)	14.75 (374.7)	13.29 (337.6)	893 (405)
With retarder only	RDS[5]	30.54 (775.8)	14.75 (374.7)	13.29 (337.6)	906 (411)
With PTO + retarder	RDS[5]	33.41 (848.8)	14.75 (374.7)	13.29 (337.6)	968 (439)
4700					
Basic model	RDS	40.61 (1031.5)	14.89 (378.2)	——	1087 (493)
With PTO only	RDS	43.49 (1104.5)	14.89 (378.2)	——	1149 (521)
With retarder only	RDS	40.61 (1031.5)	14.89 (378.2)	——	1162 (527)
With PTO + retarder	RDS	43.49 (1104.5)	14.89 (378.2)	——	1224 (555)

1 Length measured from flywheel housing to end of output shaft. 2 Depth measured below transmission centerline. 3 2000 SP – only 2000 model available with shallow oil pan. 4 3000 HS, RDS, PTS – Available with deep oil pan only. 5 4000 HS, RDS, SP – Available with deep oil pan only.

Standard Power Take-Off 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)	
Side/Side - 2000	3 and 9 o'clock	250(339)	200[2](271)[2]	Turbine
Side/Side - 3000[1]	4 and 8 o'clock	485(660)	685[3,4](930)[3,4]	Engine
Top/Side - 3000	1 and 8 o'clock	485(660)	685[3,4](930)[3,4]	Engine
4000[1]	8 o'clock	685(930)	1175[3,4](1595)[3,4]	Engine

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

Features + Advantages

Transmission Mounted PTOs used with an Allison Transmission can:

- Always be connected to the engine due to the torque converter and power shift technology. Split-Shaft PTOs also provide this benefit.
- Use hydraulic pressure to engage a hot-shift clutch.
- Allow for constant PTO speed at varying low vehicle speed operation due to the torque converter.
- Be used in all gears for mobile operation.

PTO Delete Option
Available on 3000, 3500, 4000 and 4500 RDS.

Oil Level Sensor
At the push of a button, oil levels are displayed on shift selectors for easy identification. Standard 3000, 3500, 4000, 4500 and 4700 RDS.*

Deep Oil Pan/Sump
Standard for all Rugged Duty Series™ models.

Prognostics
Eliminates unnecessary oil and filter changes by monitoring various operating parameters to determine and alert you when a specific maintenance function is required.

2nd Reverse
Allison 2nd Reverse in the 4700 RDS offers a second "deep reverse" in addition to the standard reverse to provide greater control and engine braking during operation on steep grades. It also enables more maneuverability when operating in confined spaces.

DynActive® Shifting
New innovative shift scheduling uses an algorithm to choose the most efficient shift point, based on specs, vehicle and environmental parameters.

Neutral at Stop
Automatically eliminates the load on the engine when the vehicle is at a full stop to save fuel and reduce overall vehicle emissions.

Acceleration Rate Management
Mitigates aggressive driving by controlling engine torque based on the vehicle's grade and load.

*OLS is not available for 4700 RDS with retarder

Notes

A World of Support

From our headquarters in Indianapolis, Indiana, USA, to our 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™.

Our Promise

Provide the most reliable and valued propulsion solutions in the world to enable our customers to work more efficiently.

- 100+ years of engineering advanced propulsion solutions
- Trusted by more than 350 OEMs worldwide
- A strong history of innovation with more than 1,100 patents
- Over seven million fully automatic transmissions delivered

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