

# Let Allison Help Your Fleet Carry A Lower Total Cost Of Ownership

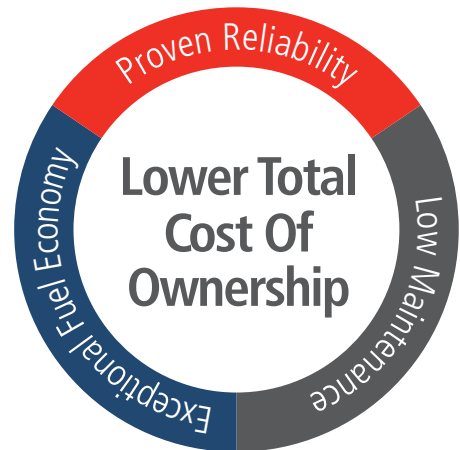


Highway Series™



# Exceptional Value

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<sup>1</sup> than a comparable competitively-equipped vehicle.



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



3000 HS



4000 HS, 4500 HS

## 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-highway applications.

<sup>1</sup> Results may vary depending on your operating conditions. See your local Allison representative to find the potential productivity gains for your particular business.



## 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

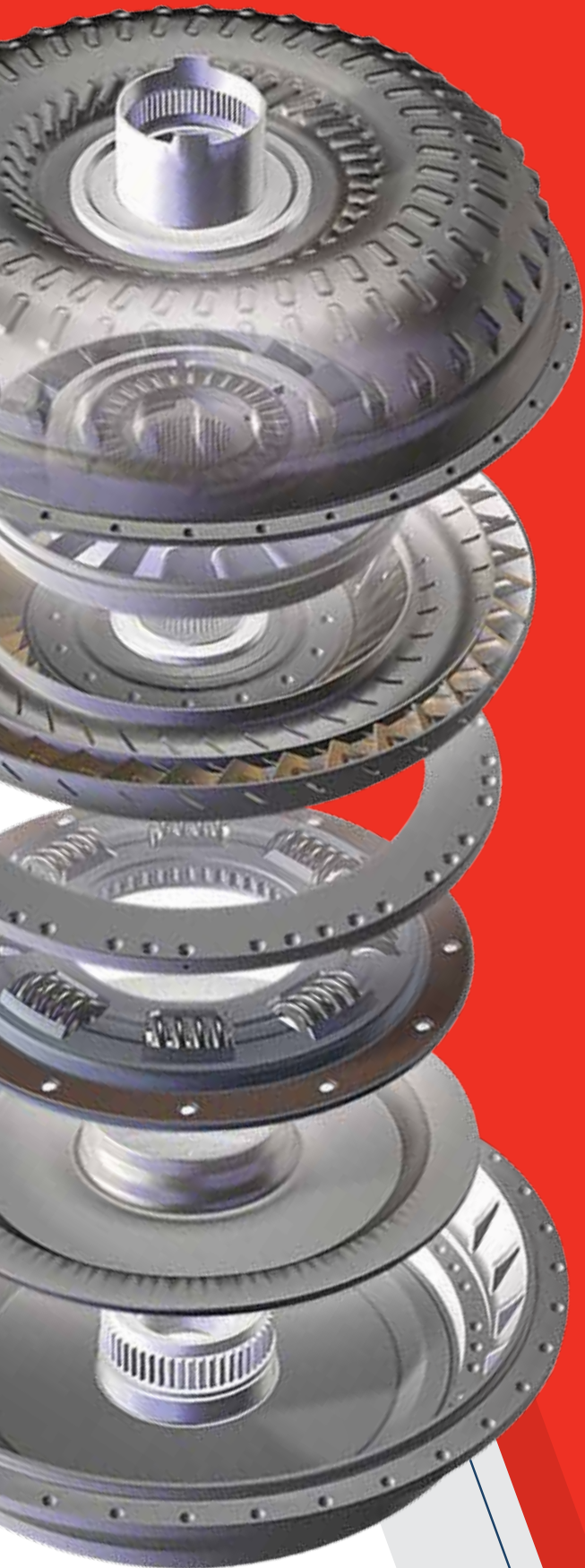
This provides an alert when the transmission's fluid filter(s) need to be replaced. It helps extend filter change intervals to reduce routine maintenance downtime and saves you money in the long run, all the while providing maximum protection for the transmission.



### 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.



# The Power Of The Torque Converter

Allison's torque converter 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. An Allison fully automatic transmission increases power while a manual or automated manual transmission (AMT) loses power with every shift. An Allison Automatic eliminates power interrupts so you can accomplish more, even with a smaller engine.

## Automatic Versus Manual And Automated Manual

While the manual clutch pedal is gone in an automated manual transmission (AMT), a mechanical clutch still facilitates the vehicle's launch. This mechanical clutch will wear and eventually burn out and need traditional maintenance and replacement, which means a vehicle spends more time being repaired and less time on the road.

Manual and automated manual transmissions do not benefit from engine torque multiplication because engine torque must be controlled or limited to extend the life of the starting clutch, which limits vehicle performance.

Allison Automatics are unique because our patented torque converter experiences very little wear and our transmissions require only periodic fluid and filter changes to maintain peak performance. When maintenance is required, the Allison is easy to service, which gets your vehicle back on the road as soon as possible.

# FUELSENSE<sup>®</sup> 2.0

with DynActive™ Shifting

## Features

FuelSense<sup>®</sup> 2.0 presents new and upgraded FuelSense<sup>®</sup> 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.

## Time To Shift

Allison Automatics save time with every shift. The more severe your duty-cycle, the more time you save, leading to increased productivity. On vehicles with manual or automated manual transmissions (AMTs), there could be up to 1,500 shifts per day. The resulting power interrupts associated with those shifts (estimated at 1 – 3 seconds per shift<sup>1</sup>) could cost you over an hour of driving time per day, decreasing your productivity.

## Startability

Say goodbye to the hesitation that is so common on launch with manual and automated manual transmissions (AMTs). With its Continuous Power Technology™, an Allison can use the full torque from the engine and multiply it with our patented torque converter. This produces more power to the wheels, allowing your vehicle to get rolling faster and smoother, regardless of what you haul.

<sup>1</sup> Based on comparative data log tests of automated manual transmissions (AMTs).

# The Natural Choice For Natural Gas

Allison Automatics are ideal for natural gas engines that have to endure the heavy start-stop duty cycles of urban distribution vehicles. Allison's Continuous Power Technology™, featuring full-power shifts and a patented torque converter, provides the best performance and most efficient use from natural gas powered vehicles.

With an Allison Automatic, natural gas engines are simply more responsive. Allison's torque converter technology multiplies engine torque to significantly improve startability and launch. Compared to manual and automated manual transmissions, Allison Automatics enable more responsive acceleration, higher productivity and greater efficiency.

Allison Automatics enable more responsive acceleration, higher productivity and greater efficiency in natural gas powered vehicles.





## Increase Control, Safety And Driver Pool

Allison's torque converter is more than a superior launching device. It provides drivers with greater low-speed control. Whether trucks are on a steep grade, navigating narrow city streets or inching back into loading docks, Allison Automatics provide the responsiveness that AMTs and manuals simply can't deliver. Rollback is virtually nonexistent with an Allison transmission.

Behind the wheel, the increased control allows drivers to stay more alert and be more in tune with the vehicle, leading to better safety records. This increased control and safety also broadens the pool for new drivers. An Allison fully automatic transmission means drivers can be more easily trained because they don't have to be familiar with manual transmissions. Even experienced drivers will benefit from more precise, safer handling and improved comfort that an Allison Automatic offers.

## RATINGS

MODEL	SERIAL NUMBER	RATIO	PARK PAWL	MAX INPUT POWER <sup>1</sup>	MAX INPUT TORQUE <sup>1</sup>	MAX INPUT TORQUE w/SEM TORQUE LIMITING <sup>1,2</sup>	MAX TURBINE TORQUE <sup>3</sup>
				hp (kW)	lb-ft (N•m)	lb-ft (N•m)	lb-ft (N•m)
1000 HS	6310	Close Ratio	Yes	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
1000 HS xFE	6310	Close Ratio	Yes	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
1350 HS	6310	Close Ratio	Yes	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
1350 HS xFE	6310	Close Ratio	Yes	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2100 HS	6310	Close Ratio	No	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2100 HS xFE	6310	Close Ratio	No	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2200 HS	6310	Close Ratio	Yes	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2200 HS xFE	6310	Close Ratio	Yes	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2300 HS <sup>5</sup>	6310	Close Ratio	No	365 <sup>4</sup> (272) <sup>4</sup>	N/A	510 <sup>4</sup> (691) <sup>4</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2350 HS <sup>7</sup>	6310	Close Ratio	Yes	340 <sup>4</sup> (254) <sup>4</sup>	575 (780)	660 <sup>4</sup> (895) <sup>4</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2350 HS <sup>7</sup> xFE	6310	Close Ratio	Yes	340 <sup>4</sup> (254) <sup>4</sup>	575 (780)	660 <sup>4</sup> (895) <sup>4</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2500 HS	6310	Wide Ratio	No	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2500 HS xFE	6310	Wide Ratio	No	340 <sup>4,7</sup> (254) <sup>4,7</sup>	575 (780)	660 <sup>4,7</sup> (895) <sup>4,7</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2550 HS <sup>7</sup>	6310	Wide Ratio	Yes	340 <sup>4</sup> (254) <sup>4</sup>	575 (780)	660 <sup>4</sup> (895) <sup>4</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
2550 HS <sup>7</sup> xFE	6310	Wide Ratio	Yes	340 <sup>4</sup> (254) <sup>4</sup>	575 (780)	660 <sup>4</sup> (895) <sup>4</sup>	950 <sup>4</sup> (1288) <sup>4</sup>
3000 HS	6510	Close Ratio	N/A	370 (276)	1100 (1491)	1250 <sup>4,6</sup> (1695) <sup>4,6</sup>	1600 (2169)
4000 HS	6610	Close Ratio	N/A	565 (421)	1770 (2400)	1850 <sup>8</sup> (2508) <sup>8</sup>	2600 (3525)
4500 HS	6610	Wide Ratio	N/A	565 (421)	1650 (2237)	1850 <sup>8</sup> (2508) <sup>8</sup>	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 with VORTEC 8.1L gasoline powered engine applications. 6 Requires Allison Transmission engine-transmission combination approval. Only available on Allison 3000 and 4000 HS models. 7 Check with your OEM to ensure offerings. 8 Available in gears three through six.

## TORQUE CONVERTER SPECIFICATIONS

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

## ENGINE SPEEDS

MODEL	FULL LOAD GOVERNED SPEED		IDLE SPEED IN DRIVE		OUTPUT SHAFT SPEED
	Min	Max (rpm)	Min	Max (rpm)	rpm
1000, 1350, 2100/2200/2300, 2350 HS	2200	5000 <sup>1</sup>	500	820	5000
2500, 2550 HS	2200	3800	500	820	4500
3000 HS	1950	2800	500	800	3600 <sup>2</sup>
4000/4500 HS	1700	2300	500	800	-

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

## GEAR RATIOS - TORQUE CONVERTER MULTIPLICATION NOT INCLUDED

MODEL	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH	REVERSE
1000 HS, 1350 HS, 2100 HS, 2200 HS, 2300 HS, 2350 HS	3.10:1	1.81:1	1.41:1	1.00:1	0.71:1	0.61:1 <sup>1</sup>	-4.49:1
2500 HS, 2550 HS	3.51:1	1.90:1	1.44:1	1.00:1	0.74:1	0.64:1 <sup>1</sup>	-5.09:1
3000 HS	3.49:1	1.86:1	1.41:1	1.00:1	0.75:1	0.65:1	-5.03:1
4000 HS	3.51:1	1.91:1	1.43:1	1.00:1	0.74:1	0.64:1	-4.80:1
4500 HS	4.70:1	2.21:1	1.53:1	1.00:1	0.76:1	0.67:1	-5.55:1

1 Check with your OEM to ensure offerings.

## POWER TAKEOFF PROVISION

Not Available on Highway Series



MAX GVW lbs (kg)	MAX GCW lbs (kg)
19,500 (8845)	26,000 (11,800)
19,500 (8845)	26,000 (11,800)
19,500 (8845)	30,000 (13,600)
19,500 (8845)	30,000 (13,600)
26,000 (11,800)	26,000 (11,800)
26,000 (11,800)	26,000 (11,800)
26,000 (11,800)	26,000 (11,800)
26,000 (11,800)	26,000 (11,800)
33,000 (15,000)	33,000 (15,000)
30,000 (13,600)	30,000 (13,600)
30,000 (13,600)	30,000 (13,600)
33,000 (15,000)	33,000 (15,000)
33,000 (15,000)	33,000 (15,000)
30,000 (13,600)	30,000 (13,600)
30,000 (13,600)	30,000 (13,600)
80,000 (36,288)	80,000 (36,288)
—	—
—	—

e in gears three through six.

**OPTIONAL RETARDER PROVISION**  
- INTEGRAL, HYDRAULIC TYPE

BASE MODEL	TORQUE CAPACITY lb ft (N·m)	POWER CAPACITY hp (kW)
<b>3000 HS</b>		
- High	1600 (2170)	600 (447)
- Medium	1300 (1760)	500 (373)
- Low	1100 (1490)	400 (298)
<b>4000 HS</b>		
- High	2000 (2712)	600 (447)
- Medium	1600 (2170)	600 (447)
- Low	1300 (1763)	500 (373)

OIL SYSTEM				
BASE MODEL	CAPACITY <sup>1</sup> quarts (liters)	MAIN CIRCUIT FILTER	LUBE CIRCUIT FILTER	ELECTRONIC OIL LEVEL SENSOR (OLS)
<b>1000 HS</b>		Spin-On Canister	-	-
- Standard Oil Pan	13.7 <sup>2</sup> (13.0) <sup>2</sup>			
- Shallow Oil Sump	11.6 <sup>2</sup> (11.0) <sup>2</sup>			
<b>2000 HS</b>		Spin-On Canister	-	-
- Standard Oil Pan	13.7 <sup>2</sup> (13.0) <sup>2</sup>			
<b>3000 HS<sup>1</sup></b>		Integral	Integral	Standard
- Deep Oil Sump w/o PTO	29 <sup>2</sup> (27.4) <sup>2</sup>			
<b>4000 HS<sup>3</sup></b>		Integral	Integral	Standard
- Deep Oil Sump w/o PTO	48 <sup>2</sup> (45) <sup>2</sup>			

**Recommended oil types for all models is Allison Approved TES 295<sup>®</sup> transmission fluid.**

<sup>1</sup> Main and lube circuit filter are integral; electronic oil sensors are standard. <sup>2</sup> Amount of oil necessary to fill a dry transmission.

PHYSICAL DESCRIPTION				
BASE MODEL	LENGTH <sup>1</sup> in (mm)	DEPTH <sup>2</sup> W/DEEP OIL PAN/SUMP in (mm)	DEPTH <sup>2</sup> W/SHALLOW OIL PAN/SUMP in (mm)	DRY WEIGHT lbs (kg)
<b>1000 HS</b>				
- SAE No. 3 mounting	28.01 (711.4)	11.22 (285.1)	10.71 (272.0)	323 (146.5)
- SAE No. 2 mounting	28.39 (721.1)	11.22 (285.1)	10.71 (272.0)	323 (146.5)
<b>2000 HS</b>				
- SAE No. 3 mounting	28.01 (711.4)	11.22 (285.1)	-	323 (146.5)
- SAE No. 2 mounting	28.39 (721.1)	11.22 (285.1)	-	323 (146.5)
<b>3000 HS<sup>3</sup></b>				
- Basic model	28.3 (718.7)	12.90 (327.7)	-	535 (243)
- With retarder only	28.29 (718.5)	12.90 (327.7)	-	615 (279)
<b>4000 HS<sup>4</sup></b>				
- Basic model	30.54 (775.8)	14.75 (374.7)	-	831 (377)
- With retarder only	30.54 (775.7)	14.75 (374.7)	-	906 (411)

<sup>1</sup> Length measured from flywheel housing to end of output shaft. <sup>2</sup> Depth measured below transmission centerline.  
<sup>3</sup> 3000 HS available with deep oil pan only. <sup>4</sup> 4000 HS available with deep oil pan only.





# The **Allison** Promise

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

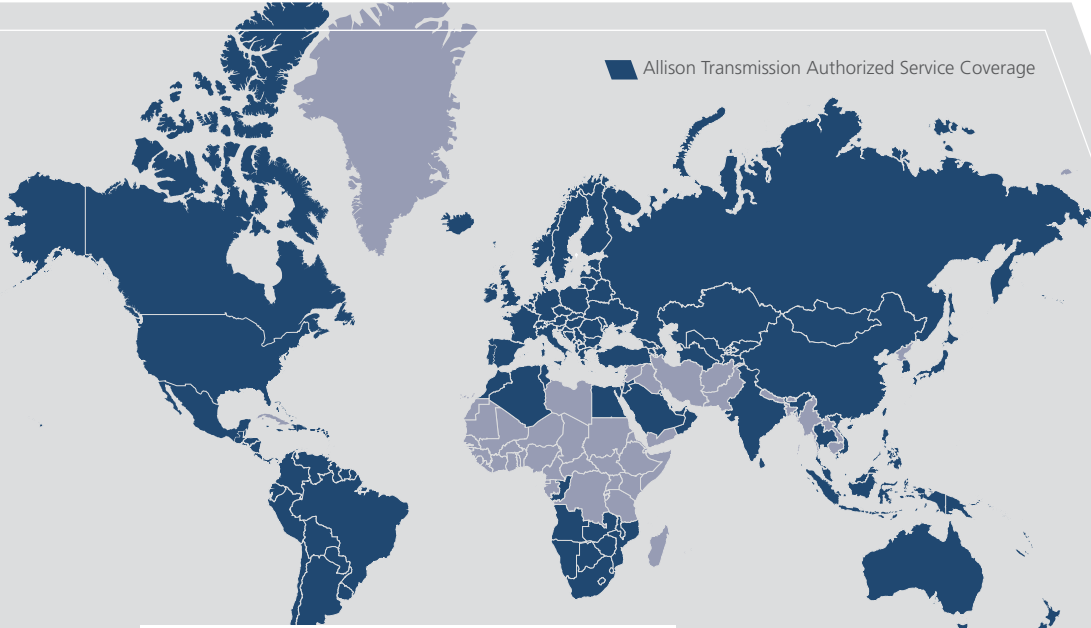
**Quality**

**Customer Focus**

**Integrity**

**Innovation**

**Teamwork**



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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