

4500/4600 Series

RATINGS

		Input Torque Gross N•m (lb-ft)		Input Power Gross ¹ Kw (hp)	Turbine Torque Net ² N•m (lb-ft)	GCW/GVW kg (lbs)
4500	General	1st gear 2237 (1650)	Gears 2 - 6 2400 (1770)	410 (550)	3322 (2450)	n/a
	Highway	2237 (1650)	2400 (1770)	410 (550)	3525 (2600)	n/a
	Fire Truck, Emergency, Crash Truck	2400 (1770)	2508 (1850)	447 (600)	3525 (2600)	n/a
	Heavy Equipment Transport	2237 (1650)	2508 (1850)	447 (600)	3525 (2600)	n/a
	Refuse Vehicles	2102 (1550)		373 (500)	3322 (2450)	n/a
	Ag Spreader, Sprayer, Blower, Feedlot Truck	2237 (1650)	2400 (1770)	410 (550)	3525 (2600)	n/a
4500 ORS	Articulated Dump	Gears 1 - 2 2102 (1550)	Gears 3 - 6 2203 (1625)	358 (480)	3322 (2450)	68,500 (151,017)
	Rigid Rear Dump	2102 (1550)		358 (480)	3322 (2450)	57,000 (125,663)
	Off-Road	CONTACT YOUR ALLISON REPRESENTATIVE FOR DETAILS				
4500 OFS	Oil Field Series	1st gear 2237 (1650)	Gears 2 - 6 2508 (1850)	410 (550)	3525 (2600)	n/a
4500 SP	Specialty Vehicles	1st gear 2237 (1650)	Gears 2 - 6 2508 (1850)	447 (600)	3525 (2600)	n/a
	Military Combat	2400 (1770)	2508 (1850)	447 (600)	3525 (2600)	n/a
	Military Support and Tactical	Gears 1 - 2 2400 (1770)	Gears 3 - 6 2508 (1850)	447 (600)	3525 (2600)	n/a
4600 ORS	Articulated Dump	2102 (1550)	2305 (1700)	358 (480)	3322 (2450)	81,000 (178,574)

1. Gross Power rating as defined by ISO 1585 or SAE J1995. 2. Turbine Torque limit based on ISCAAN standard deductions.

DRIVETRAIN INTERFACES

Acceptable full-load engine governed speed	1700 – 2300 rpm
Acceptable engine idle speed range (with transmission in Drive)	500 – 820 rpm

MOUNTING

To Engine	SAE No.1
In Chassis	Rear support available (required for some installations)

TORQUE CONVERTER

Type	One stage, three element, polyphase. Includes standard integral damper which is operational in lockup.
Model	Stall Torque Ratio
TC-521	2.42
TC-531	2.34
TC-541	1.90
TC-551	1.79
TC-561	1.58

MECHANICAL RATIOS (Gear ratios do not include torque converter multiplication)

Range	
First	4.70 : 1
Second	2.21 : 1
Third	1.53 : 1
Fourth	1.00 : 1
Fifth	0.76 : 1
Sixth	0.67 : 1
Reverse	-5.55 : 1

CONTROL SYSTEM

Description	Allison 4th Generation Electronic Controls with closed loop adaptive shifts
Shift Sequences	[C = Converter mode (lockup clutch disengaged); L = Lockup mode (lockup clutch engaged)] Option 1: 1C-[1L]-2C-2L-3L-4L Option 2: 1C-[1L]-2C-2L-3L-4L-5L Option 3: 1C-[1L]-2C-2L-3L-4L-5L-6L
TCM must be calibrated for "1L" option. Second-gear-start calibrations are not available for all vehicle applications.	
Driver-to-Transmission Interface	Cab-mounted shift selector, pushbutton or lever with two-digit display (range selected and range attained)
Communication Protocol - Engine/Vehicle Systems Interface	SAE J1939, SAE J1587, ISO 9141, IESCAN

PHYSICAL DESCRIPTION

	Length*	Dry weight	Depth below transmission centerline
Basic Model	793 mm (31.2 in)	377 kg (535 lbs)	335 mm (13.2 in)
With PTO Drive Provision	866 mm (34 in)	405 kg (575 lbs)	335 mm (13.2 in)
With Retarder	793 mm (31.2 in)	411 kg (615 lbs)	335 mm (13.2 in)
With PTO Drive Provision and Retarder	866 mm (34 in)	439 kg (655 lbs)	335 mm (13.2 in)

*Approximate length from engine housing to output flange (depending on output flange type)

ENGINE-DRIVEN POWER TAKE-OFF PROVISION

PTO drive	Engine-driven helical gear		
PTO mounting pads	Ten-bolt, 1 o'clock and 8 o'clock positions (as viewed from rear)		
PTO drive gear ratio	1 o'clock position	1.00 x engine speed	
	8 o'clock position	1.00 x engine speed	
PTO drive gear rating (continuous operation)	Using one PTO:	928 N•m (685 lb-ft)	
	Total using two PTO's:	1593 N•m (1175 lb-ft)	
PTO Drive Gear	97 tooth		

OUTPUT RETARDER PROVISION (OPTION)

Type	Capacity		Integral, hydraulic
	Torque	Power	
Level 3	2710 N•m (2000 lb-ft)	447 kW (600 hp)	
Level 2	2170 N•m (1600 lb-ft)	447 kW (600 hp)	
Level 1	1760 N•m (1300 lb-ft)	373 kW (500 hp)	

OIL SYSTEM

Oil type	Transynd™, DEXRON®-III
Capacity, excluding external circuits	
With Deep Oil Sump	41 litres (43 quarts)
With Shallow Oil Sump	38 litres (40 quarts)
Main circuit oil filter	Replaceable element, integral
Cooler circuit oil filter	Replaceable element, integral
Electronic oil level sensor (OLS)	Standard

SPEEDOMETER PROVISION

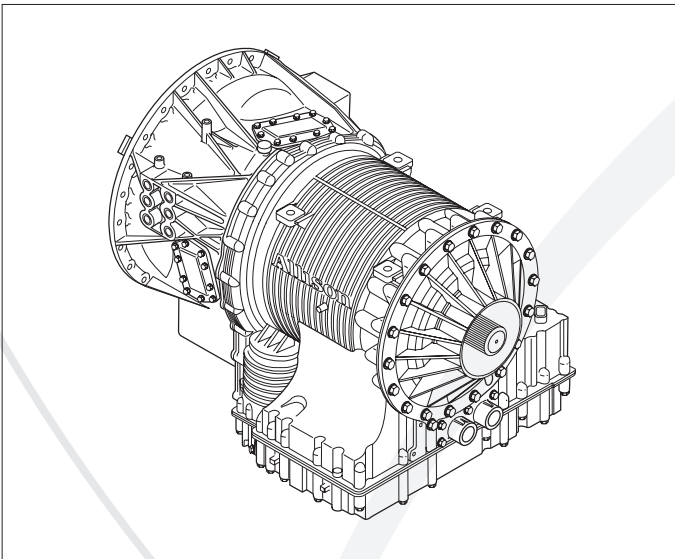
Description	Non-zero-crossing square wave
	8, 16 or 40 pulses per revolution of transmission output shaft
Location	Electronic output from TCM

TACHOGRAPH PROVISION

Tone wheel	4 or 6-tooth
Mounting	M18 x 1.5 metric thread
Location	Transmission rear cover or retarder housing

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With PTO and Shallow Oil Sump



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With PTO and Retarder

