

3500 Series

RATINGS

Model ⁽¹⁾		Input Torque Gross N•m (lb-ft)	Input Power Gross ⁽²⁾ Kw (hp)	Turbine Torque Net ⁽³⁾ N•m (lb-ft)	GVW kg (lbs)	GCW kg (lbs)
3500	General	1166 (860)	224 (300)	1925 (1420)	n/a	n/a
	Refuse, Concrete Mixer	1166 (860)	224 (300)	1925 (1420)	27,216 (60,000)	n/a
	Fire Truck, Emergency	1335 (985)	246 (330)	2034 (1500)	n/a	n/a
	Dock Spotter, Tow Tractor	1166 (860)	224 (300)	1925 (1420)	n/a	36,288 (80,000)
	Ag Spreader, Sprayer, Blower, Feedlot Truck	1288 (950)	235 (315)	1966 (1450)	n/a	n/a
3500 ORS	Articulated Dump	1100 (811)	224 (300)	1925 (1420)	44,500 (98,100)	n/a
	Rigid Dump	1100 (811)	224 (300)	1925 (1420)	44,500 (98,100)	n/a
	Off-Road	CONTACT YOUR ALLISON REPRESENTATIVE FOR DETAILS				
3500 SP	Specialty / Military	1335 (985)	246 (330)	2034 (1500)	n/a	n/a

(1). Models including vocational designations (ie: ORS, OFS, SP, MH) are for global markets. All other models within this document are targeted for non North American markets only.
 (2). Gross Power rating as defined by ISO 1585 or SAE J1995. (3). Turbine Torque limit based on ISCAAN standard deductions.

DRIVETRAIN INTERFACES

Acceptable full-load engine governed speed	2000 – 2800 rpm
Acceptable engine idle speed range (with transmission in Drive)	500 – 820 rpm
Maximum output shaft speed at 105 km/hr (65 mi/hr) – retarder-equipped models only	3600 rpm

MOUNTING

To Engine	SAE No.2
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-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

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

Range

First	4.59 : 1
Second	2.25 : 1
Third	1.54 : 1
Fourth	1.00 : 1
Fifth	0.75 : 1
Sixth	0.65 : 1
Reverse	-5.00 : 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	
			With Shallow Oil Sump (Standard)	With Deep Oil Sump (Optional)
Basic Model	740 mm (29 in)	243 kg (535 lbs)	283 mm (11.5 in)	328 mm (12.9 in)
With PTO Drive Provision	846 mm (33.2 in)	260 kg (575 lbs)	283 mm (11.5 in)	328 mm (12.9 in)
With Retarder	740 mm (29 in)	280 kg (615 lbs)	283 mm (11.5 in)	328 mm (12.9 in)
With PTO Drive Provision and Retarder	846 mm (33.2 in)	300 kg (655 lbs)	283 mm (11.5 in)	328 mm (12.9 in)

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

ENGINE-DRIVEN POWER TAKE-OFF PROVISION

Mounting pad positions viewed from rear	Drive gear rating with one PTO N•m (lb-ft)	Drive gear rating with two PTOs N•m (lb-ft)	PTO Drive Gear	Drive
4 o'clock and 8 o'clock (Standard)	660 (485)	930 (685)	68 tooth	Engine
1 o'clock and 8 o'clock (Optional)	660 (485)	930 (685)	83 tooth	Engine
Fire and Emergency	910 (670)	930 (685) ¹		

¹ Intermittent rating to 1068 N•m

OUTPUT RETARDER PROVISION (OPTION)

Type	Capacity		Integral, hydraulic
	Torque	Power	
Level 3	2170 N•m (1600 lb-ft)	447 kW (600 hp)	
Level 2	1760 N•m (1300 lb-ft)	373 kW (500 hp)	
Level 1	1490 N•m (1100 lb-ft)	298 kW (400 hp)	

OIL SYSTEM

Allison approved fluids: TES 295, TES 389 and DEXRON®-VI

Capacity, excluding external circuits

With Deep Oil Sump	27 litres (29 quarts)
With Shallow Oil Sump	25 litres (26 quarts)

Main circuit oil filter	Replaceable element, integral
Cooler circuit oil filter	Replaceable element, integral
Electronic oil level sensor (OLS)	Standard

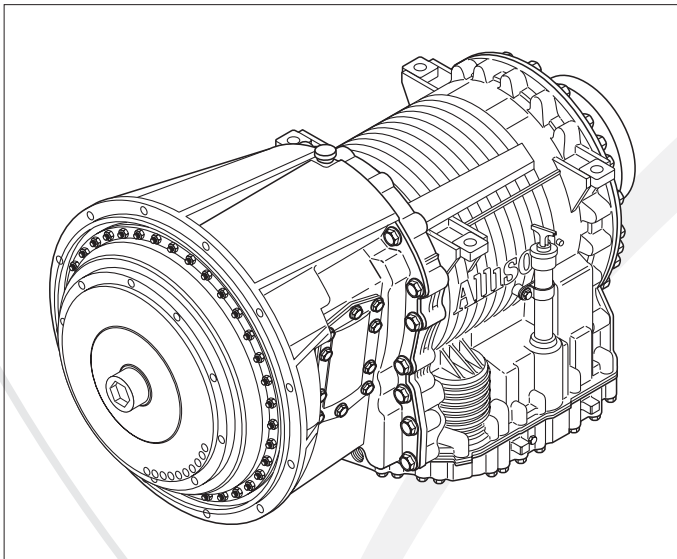
SPEEDOMETER PROVISION

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

3500 Series
With PTO and Shallow Oil Sump



3500 Series
With Retarder, PTO and Deep Oil Sump

