



Table of Contents

Section

4

Powertrain

Engine Cooling Charts	4-2
PTO Selection Guide	
Sizing, Mounting, Locations, Output & Drive Options	4-3
Power/Torque Calculations & Application Recommendations	4-4
Speed Control Via Engine	4-5
Engagement and Disengagement Control	4-6
DD13 GHG17 Curve	4-7
PTO Compatibility Criteria	4-8
Transmission PTO Compatibility Matrix	
4700 SF/SB - Allison	4-9
4700 SF/SB - Eaton Fuller	4-10
4800/4900SB AWD - Allison & Eaton Fuller	4-11
4900SB - Allison & Eaton Fuller	4-12
4900SF - Allison & Eaton Fuller	4-13
4900XD - Allison & Eaton Fuller	4-14
4900SF/SB - Allison & Eaton Fuller With Front Frame Extension	4-15
6900XD - Allison & Eaton Fuller	4-16

This guide is to be used as a reference document only. Please consult your Western Star CAE representative on specific spec'ing needs as the information contained in this document can change without notice.

Engine Cooling Charts



Cooling Chart

Radiator Size & Configuration						Model													Engine					
Radiator Description	Data Code	Manufacturer	DC 370-015 Water To Oil Cooler (Manual Trans)	Allison Transmission	FEPTO	WST 6900SA 141	WST 6900SA TND 141	WST 4900EX 132	WST 4900FA 123	WST 4900SA 123	WST 4900SA SV 123	WST 4900SA BFLY 123	WST 4900SA TND 123	WST 4900FA 109	WST 4900FA TND 109	WST 4900SA SV 109	WST 4900SA SV TND 109	WST 4900SA AWD 109	WST LowMax	DD13	DD15	DD16	ISX/SIG	
Aluminum Core / Crimped Tank Radiators																								
1375	266-098	Modine	N	Y	Y				X RC	X RC	X RC			X RC	X RC	X RC	X RC	X RC			X			
1625	266-082	Modine	Y	N	N														X				X	
1600	266-1A0	Modine	Y	Y	N						X					X				X	X	X	X	
1700	266-1AW	Modine	Y	Y	N			X	X					X						X	X	X	X	
Copper Brass Core / Bolted Tank Radiators																								
1570	266-080	Modine	N	Y	Y				X RC	X RC		X RC	X RC								X	X	X	X
1750	266-1AE	Modine	N	Y	N			X	X		X RC										X	X	X	X
1875	266-1AF	Modine	N	Y	N				X RC	X RC											X	X	X	X
Glacier Copper Brass Core / Bolted Tank Radiators																								
1710GC	266-1AA	Copper Core	N	Y	Y	X															X	X	X	
1845GC	266-1AB	Copper Core	N	Y	N	X	X														X	X	X	

RC = Raised Cab

PTO Selection Guide

Sizing, Mounting, Locations, Output & Drive Options

1. PTO Sizing And Mounting Pads

attachment pads:





Transmission Type	PTO Pad Type	Available Intermittent Torque Capacity
Allison 3K/4K	10- bolt	250 lb ft - 565 lb ft
Detroit DT12	SAE - B pad	300 lb ft
	SAE 6 - bolt	200 lb ft - 250 lb ft
Eaton Ultrashift	SAE- 8 bolt	500 lb ft - 750 lb ft

Intermittent Operation - 5 minutes out of every 15 minutes
 Continuous Operation - 70% of Intermittent torque capacity
 Continuous Operation - 80% of Intermittent torque capacity

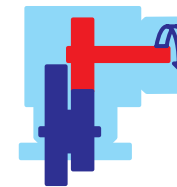
2. PTO Pad Locations On Transmissions

Allison:	3000 family	Side / Side	10-bolt
		Side / Top	10-bolt
Eaton Autoshift:	4000 family	Side / Top	10-bolt
		Side / Top	SAE – 6 bolt
		Bottom	SAE – 8 bolt
Detroit DT-12:		Rear	
		Rear	

3. PTO Output Types

	SAE B-Pad: 2 and 4 bolt pad SAE BB-Pad: 2 and 4 bolt pad as B-pad	7/8" 13 tooth internal spline 1" 15 tooth internal spline
	1 1/4" round shaft with woodruff key	
	SAE C-pad: 2 or 4 bolt	1 1/2" 10 tooth internal spline
	1410 Flange:	1 1/2" 10 tooth external spline

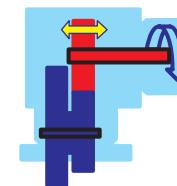
4. PTO Drive Options



Constant drive: Used on engine driven Allison trans, but offers no means of disengagement.



Clutch drive: Primarily used on engine driven Allison trans to give "hot shift" capability and can be engaged at will.



Manual engagement: Used on Eaton side mount PTO's. Internal gear movement or dog clutch is used for drive engagement by either cable, air or electric.



Rear drive: Clutch engagement for Eaton rear location (Thru Shaft) or Detroit DT12 to give drive off counter shaft



PTO Selection Guide

Power/Torque Calculations & Application Recommendations

5. hydraulic Systems, Power/Torque Calculations:

$$HP = \frac{GPM \times P}{E \times 1714}$$

GPM = Gallons/Minute
P = Pressure (psi)
E = Efficiency (use 0.85)
RPM = Pump speed

$$Torque = \frac{Power \times RPM}{5252}$$

6. PTO Application Recommendations

PTO Application	Detroit DT12	Eaton Rear Throughshaft	Eaton 6 bolt	Eaton 8 bolt	Allison 10 bolt Med Duty	Allison 10 bolt Heavy Duty	Rear Engine PTO	Split Shaft
Dump	Green	Green	Green		Green			
Dump Large >20 yards				Green		Green		
Aerial	Green	Green	Green		Green			
Walking Floor	Green	Green	Green					
Auger				Green		Green		
Screw Discharge (feedlot)				Green		Green		
Bulk Feed	Green	Green	Green		Green			
Sewer Vacuum				Green		Green	Green	
Concrete Mixer Small				Green		Green		
Concrete Mixer Large							Green	
Concrete Pump								Green
Blower Unit (small)	Green	Green	Green		Green			
Blower Unit (Large)				Green		Green	Green	
Fire pump <1000 gpm				Green		Green		Green
Fire pump >1000 gpm								Green
Refuse			Green	Green	Green	Green	Green	
Generator				Green		Green	Green	Green
Snow Plow	Green	Green	Green		Green			
Wrecker	Green	Green	Green					
Winch >30,000 capacity				Green		Green		



PTO Selection Guide

Speed Control Via Engine

7. PTO Speed Control Via Engine

Cummins and Detroit both offer ENGINE speed control via the PTO governor.

PTO Feature	DD13/15/16		Cummins ISL	
	Range	Default	Range	Default
Power Take Off (PTO)	Enable/Disable	Enabled (cpC 2/9)	Enable/Disable	Enabled
PTO Maximum Vehicle Speed	0-79 mph	5 mph	0-15 mph	6 mph
PTO Maximum Engine Speed	600-2100 rpm	2100 rpm	600-2500 rpm	2500 rpm
PTO Minimum Engine Speed	500-2100 rpm	600 rpm	600-2500 rpm	600 rpm
PTO Set Switch Engine Speed	600-2100 rpm	600 rpm	600-2500 rpm	850 rpm
PTO Resume Switch Engine Speed	600-2100 rpm	600 rpm	600-2500 rpm	900 rpm
PTO Additional Speed Switch Engine Speed	Up to 3 fixed speeds	1 Fixed Speed	600-2500 rpm	1000 rpm
PTO Accelerator Override	Enable/Disable	Disabled	Enable/Disable	Disabled
PTO Accelerator Override Maximum Engine speed	600-2100 rpm	1400 rpm	600-2500 rpm	2500 rpm
PTO Service Brake Override	Enable/Disable	Enabled	Enable/Disable	Enabled
PTO Clutch Override	Enable/Disable	Disabled	Enable/Disable	Enabled
PTO Maximum Engine Load	100% (Max Torque)	100% (Max Torque)	100-2500 ft-lbs/800 ft-lbs	
PTO Engine Speed Switch Ramp Speed	25-2500 rpm/s	250 rpm/s	100-2500 rpm/sec	250 rpm/sec
PTO Ignore VSS	Enable/Disable	Enabled	Enable/Disable	Disable

PTO Switch (FEPTO/REPTO) or Trans PTO feedback Switch Required wired feedback to CPC pin 2/9 or multiplex PTO switch position via J1939 PGN when work is being performed.

- Disables the Auto Elevate feature
- Disables DPF regeneration unless PTO Dosing (79V-001) is enabled
- Removes California Clean Idle limitation of 900rpm for adjusted idle with cruise control switches (+/-)
- Allows VSG (PTO Mode) operation for remote throttle pedals/ hand throttles

Vehicle Speed Signal Evaluation in Case of Split Shaft PTO VSS Evaluation in Case of Split Gear PTO is a feature that is STANDARD beginning with CPC4 R36 software. This feature prevents the vehicle odometer from accruing miles, the speedometer from displaying a false road speed, and undesired warning buzzer operation while the PTO is engaged and the vehicle is not moving (Road Speed = 0). For this feature to be active, the following conditions must be met:

- Park Brake is applied
- Remote PTO is active
- ABS front wheel speed < 5 km/h (3.1 mph)

J1939 Engine Throttle Commands

TSC1 PTO (Multiplexed PTO Control using TSC1 Interface) - Beginning with CPC R36 level software, PTO speed control can be achieved with specific J1939 messages using the TSC1 interface. Refer to section "Communications - SAE J1939 Data Link". Dealer/Distributor changeable parameters can limit the maximum engine speed and allow for neutral and/or park brake interlocks.

J1939 PTO – Power Takeoff Information (PGN 65264) - Ability to multiplex PTO switch (SPN 979), increment + (SPN 981), and decrement – (SPN982). The PTO controls operate similar to cruise switches, only from a body controller, the functionality of the dashboard mounted cruise control switches is maintained.



PTO Selection Guide

Engagement and Disengagement Control

8. PTO Engagement and Disengagement Control

Allison mandates PTO control via the transmission control module.

PTO Speed Parameter		Default Value	Allowable Speed Rating
Enguagement	Max Engine speed	900 rpm	500 - 2600 rpm
	Max Output Speed	250 rpm	50 - 6000 (rpm/Output Shaft)
Operation	Max Engine speed	4000 rpm	375 - 5000 rpm
	Max Output Speed	300 rpm	60 - 6000 (rpm/Output Shaft)

Engagement is set as follows (if required)

Based on Engine speed using DTNA Sales Code

85E TCU-PTO:MAX ENG SPD ENGAGEMENT

Based on Drive Shaft speed using DTNA Sales Code

85G TCU-PTO:MAX O/P SPD ENGAGEMENT

Note that the default is ONLY 250 rpm and must be raised if engagement is required at higher road speed.

The value of OUTPUT SHAFT SPEED (RPM) is equivalent to ROAD SPEED (MPH) via the following formula:

$$\text{Output Shaft Speed (rpm)} = \frac{\text{Tire Size (rev/mile)} \times \text{Axle Ratio} \times \text{Road Speed (mph)}}{60}$$

Disengagement is set as follows:

Based on Engine speed using DTNA Sales Code

85F TCU-PTO:MAX ENG SPD OPERATION

Note that pump speed limits must be set relative to ENGINE SPEED with the following formula:

$$\text{Engine Speed (rpm)} = \frac{\text{Pump Speed (rpm)}}{\text{PTO Speed Ratio}}$$

DD13 GHG17 Curve

GHG17 Engine changes have a big impact vehicle performance with the introduction of “downsped” engine ratings. To improve fuel economy the engine speed at which peak torque and peak power occur is being lowered. With these new features it is necessary to reevaluate the pre GHG17 power train configurations to ensure the equipment performs under these low speed outputs:

- Axle Ratios
- Torque Converters
- Transmission Shift Maps
- Engine Ratings

The new GHG17 engines spin the engine slower and work it harder. The ability to operate the engine on an alternate PTO operating curve. This solution is currently only available for stationary PTO operation.

There are a series of interlocks that will be required in order for the PTO Mode curve to be activated:

- The engine PTO Power Curve parameter must be enabled; (the official parameter name within CPC04T software is “PTO Power Enable”).
- Park brake must be set.
- Dashboard PTO switch must be engaged.
- Wheel speed sensor must be indicating road speed below 5 mph.

For “live drive” PTO operation above 900 RPM see page 4-? for programming and modification requirements.

Adjusted Idle (non-work mode)

- Idle governor
- Driver is allowed to fast idle the engines, but work is not necessarily being performed
- Engine remains on the idle governor
- Limited to Clean Idle limitation of 900 rpm

PTO Mode (work mode)

- PTO governor (full fuel working governor)
- Operator can set desired engine speed to perform the task at hand, work is being performed
- Requires usage of PTO switch
- CPC pin 2/9 grounded (J1939 PTO switch info received)
- Allow VSG operation up to maximum RPM

PTO Dash Switch:

- Required when work is being performed
- Disables the Auto Elevate feature
- Disables DPF regeneration unless PTO Dosing is enabled
- Removes California Clean Idle limitation of 900rpm
- Allows VSG operation for remote throttle pedals/ hand throttles

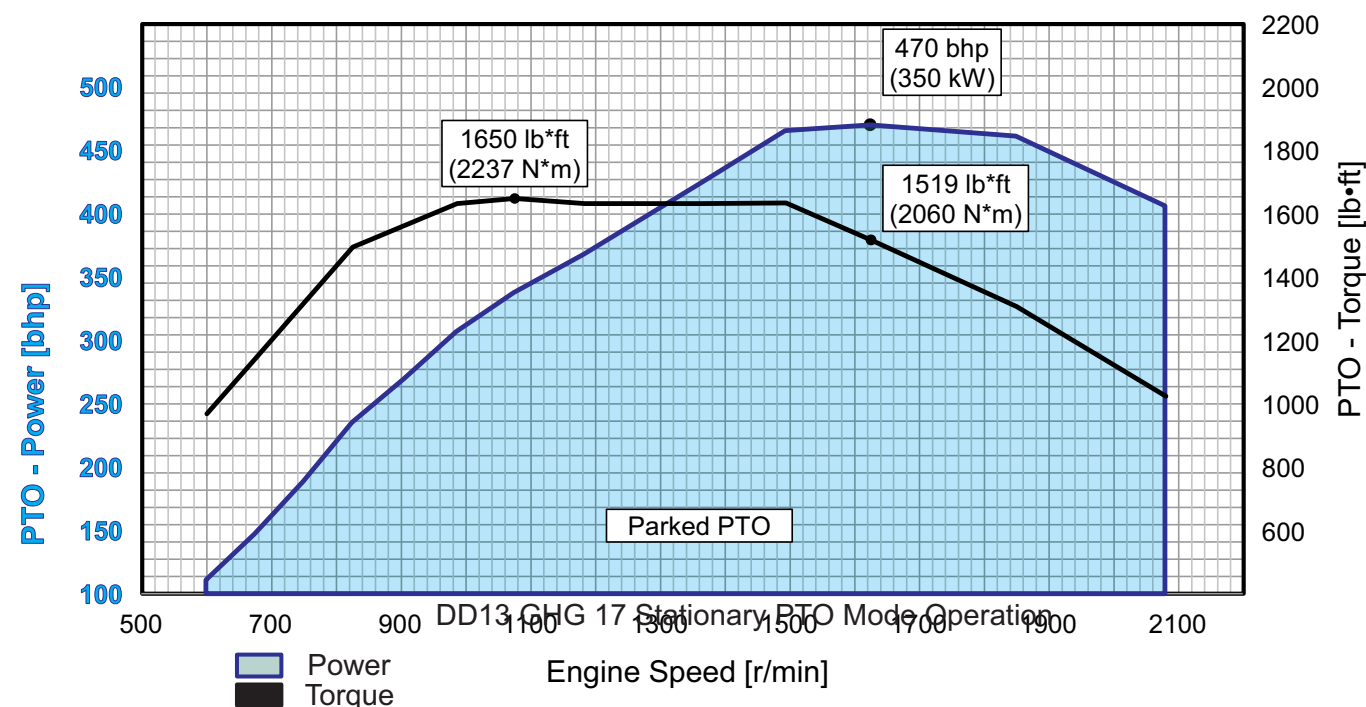
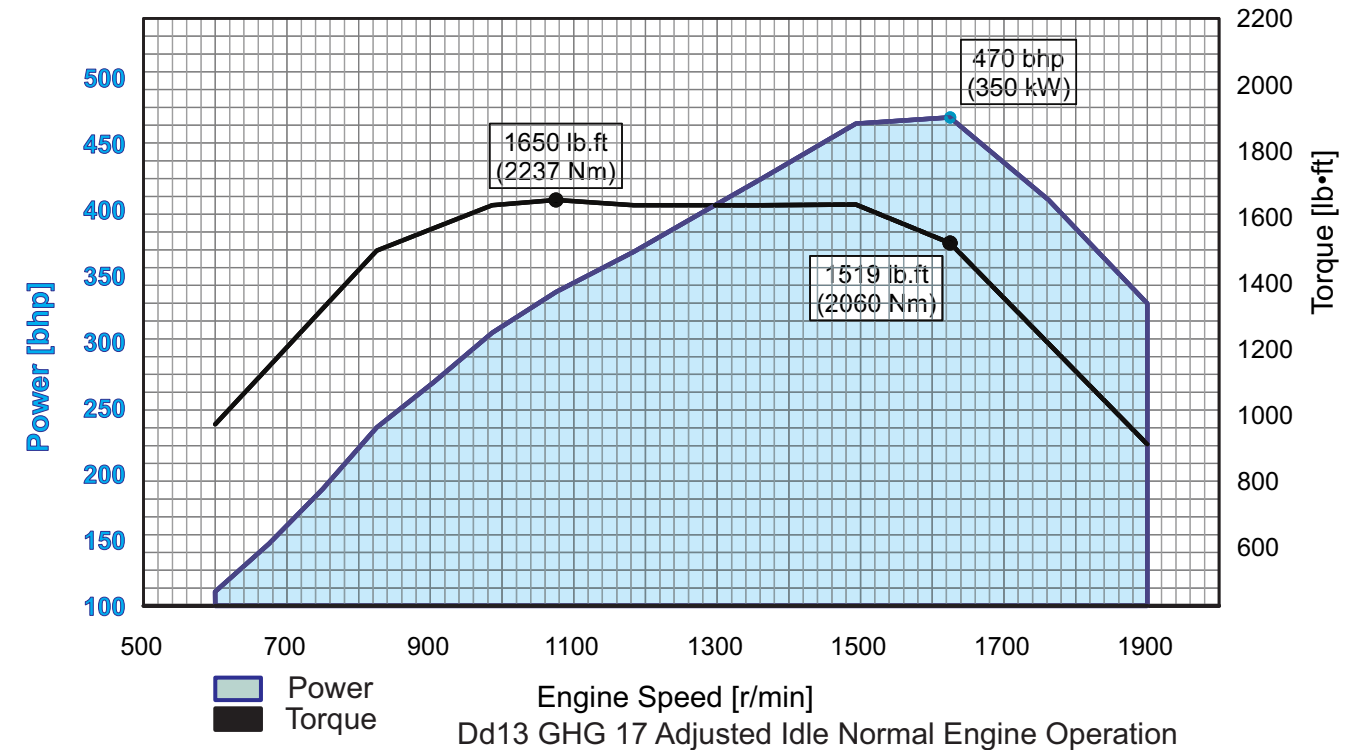


Model: D471.928 - Truck

Engine Family: DD13

Rating: 470bhp @ 1625r/min - 1650lb*ft @ 1075r/min

Certification: GHG17





Western Star Bodybuilder Book: Revision 3.1

PTO Compatibility Criteria

Transmission mounted PTO's- Guidelines

The guideline charts are intended as aid to dealers, they provide PTO selection guidance on which PTO models will install in specific Western Star chassis, it does not:

- Replace the application guidelines or approval requirements provided by the transmission manufacturers
- Replace the application guidelines or approval requirements provided by the PTO manufacturers
- Provide an assurance that there will clearance for PTO driven equipment such as pumps and driveshafts, size and configuration of driven equipment must be considered when selecting the PTO model to be used.

PTO models reviewed were based on recommendations provided by Chelsea and Muncie as being commonly used and include rear-drive configurations only.

These include the following models:

Muncie: CD05, CD10, CS24/25, CS6, CS8, CS10/11, HS24, TG6, TG8, 828

Chelsea: 221, 236, 238, 267, 269, 277, 278, 340, 442, 489, 823, 859, 867, 870, 877, 880, 890

Manual transmission rear mount PTO's are not included.

Clearance Criteria:

Acceptable installation clearance is defined as 13mm of clearance with 2 degrees of engine rotation about the engine crankshaft. In some cases additional clearance is required such as when considering front suspension components. The clearance review is also restricted to the basic PTO housing and does not include the different mounting flanges and orientations available as this is highly variable.

Acceptable clearance is determined by reviewing clearances to the following major components:

- Transmissions
- Suspension components
- Exhaust components (typical EPA2010 options only)
- Underslung crossmembers
- Front cab crossmembers
- Frame rails

The following components are not considered in the clearance review:

- Air lines
- Fuel lines
- Electrical harnesses and components
- Other chassis mounted components not listed above
- PTO external lubrication lines

Note: for Allison 4000 series transmissions with top mounted PTO's, clearance for PTO driven equipment maybe limited by dual exhaust, single lefthand side exhaust systems and rear of transmission crossmembers.

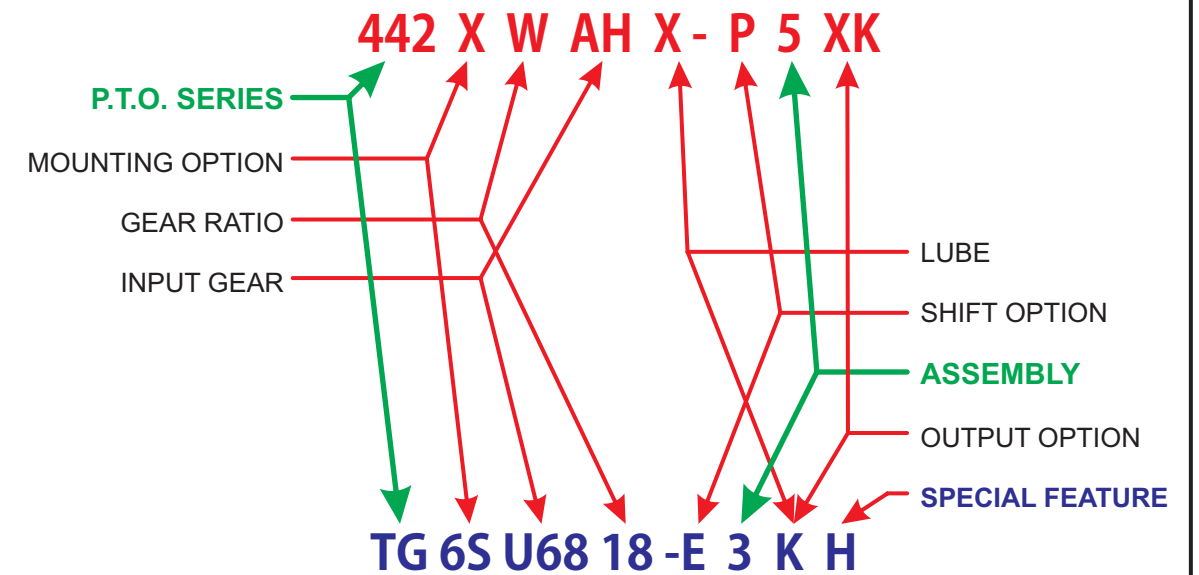
The review was done by vehicle model; only transmissions which have been previously used in a specific model of truck were included, for example, in the Western Star 69xd model only the Eaton RT and Allison 4000 series transmissions were reviewed.

Chelsea and Muncie part numbering systems are shown below for simplification the PTO compatibility guidelines only reference the PTO series and the Assembly shown in green below

CHELSEA Part No System

442 X W AH X - P 5 XK

Listed as 442 - 5 in compatibility charts



MUNCIE Part No System





TG 6S U68 18 - 3 K H

Listed as TG - 3 in compatibility charts

Transmission PTO Compatibility Matrix

4700 SF/SB - Allison

Refer to Page 4-9 for PTO Model Number Descriptions

4700SF/4700SB 110BBC Allison Transmission Mounted PTO Compatibility Matrix					4700SF/4700SB 110BBC Allison Transmission Mounted PTO Compatibility Matrix										
ENGINE	TRANSMISSION	FRT AXLE LOCN	PTO LOCATION	PTO	ENGINE	TRANSMISSION	FRT AXLE LOCN	PTO LOCATION	PTO	NOTES					
 Detroit DD13	ALLISON 3000 SERIES	FORWARD	LHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1 CHELSEA 267-3, 267-5, 277-3, 277-5, 278-3, 278-5, 870-3, 870-5, 877-3, 877-5, 890-5	 ALLISON 3000 SERIES	ALLISON 3000 SERIES	FORWARD	LHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 867-5					
			RHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-3 CHELSEA 267-3, 267-5, 277-3, 277-5, 278-3, 278-5, 859-5, 867-5, 870-3, 870-5, 877-3, 877-5, 890-5				RHS	MUNCIE CD05-1, CD05-3, CS10/11-1, CD10-1, CD10-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 867-5, 859-3, 867-3, 890-5						
		SETBACK	LHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1 CHELSEA 267-3, 267-5, 277-3, 277-5, 278-3, 278-5, 870-3, 870-5, 877-3, 877-5, 890-5			Cummins ISC/ISL W/O REPTO	SETBACK	LHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3 CHELSEA 267-3, 267-5, 277-3, 277-5, 278-3, 278-5		RHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3 CHELSEA 267-3, 267-5, 277-3, 277-5, 278-3, 278-5, 890-5		
			RHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-3 CHELSEA 267-3, 267-5, 277-3, 277-5, 278-3, 278-5, 859-5, 867-5, 870-3, 870-5, 877-3, 877-5, 890-5					LHS	MUNCIE CD05-1, CD05-3, CD10-3, CS10/11/-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-5, 867-5, 870-3, 870-5, 877-3, 877-5, 877-5, 870-5					
		 ALLISON 4000 SERIES	FORWARD	LHS			MUNCIE CD05-3, CD10-3, CS10/11/-3, CS24/25-3, HS24-3 CHELSEA 267-3, 267-5, 877-5, 277-5, 870-5, 890-5	 ALLISON 4000 SERIES	ALLISON 4000 SERIES	FORWARD		LHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5
				LHS			MUNCIE CD05-3, CD10-3 CHELSEA 267-3, 267-5, 877-5, 277-5, 870-5, 890-5					LHS	MUNCIE CD05-3, CD10-3 CHELSEA 267-5		
	SETBACK		TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	Cummins ISC/ISL W/O REPTO	SETBACK	TOP			MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5					
			LHS	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5			TOP			MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3 CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5					

Transmission PTO Compatibility Matrix

4700 SF/SB - Eaton Fuller

Refer to Page 4-9 for PTO Model Number Descriptions

4700SF/4700SB 110BBC Eaton Transmission Mounted PTO Compatibility Matrix						
ENGINE	TRANSMISSION	FRT AXLE LOCN	PTO LOCATION	PTO	NOTES	
Detroit DD13	EATON FULLER RT/RTLO	FORWARD	LHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER	
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3,442-5		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3		
				CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5, 852-3, 852-5		
			LHS	MUNCIE TG6-1, CS6-1		REQUIRES 55 DEGREE ADAPTER
				CHELSEA 221-3,236-3, 340-3, 340-5, 442-5		
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3			
			Chelsea 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5			
		SETBACK	LHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER	
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3,442-5		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3		
				Chelsea 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5		
	LHS		MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 DEGREE ADAPTER		
			CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3,442-5			
	BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3				
		CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5				
	EATON FULLER FO ULTRASHIFT	FORWARD	LHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER	
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3,442-5		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-3, 828-3		
		CHELSEA 238-5, 489-3, 489-5, 880-3, 880-5				
		SETBACK	LHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER	
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3,442-5		
	BOTTOM		MUNCIE TG8-1, TG8-3, CS8-3, 828-3			

4700SF/4700SB 110BBC Eaton Transmission Mounted PTO Compatibility Matrix						
ENGINE	TRANSMISSION	FRT AXLE LOCN	PTO LOCATION	PTO	NOTES	
Cummins ISC/ISL W/O REPTO	EATON FULLER RT/RTLO	FORWARD	LHS	MUNCIE TG6-1, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER	
				CHELSEA 221-3, 236-5, 340-3, 340-5, 442-5		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3		
				CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5, 852-3, 852-5		
			LHS	MUNCIE NOT AVAILABLE		
				CHELSEA NOT AVAILABLE		
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3			
			CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5, 852-3, 852-5			
		EATON FULLER FRO	FORWARD	LHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 DEGREE ADAPTER
					Chelsea 221-3, 221-5, 236-5, 340-3, 340-5, 442-3,442-5	
				BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3	
			CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5, 852-3, 852-5			
	SETBACK		LHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 DEGREE ADAPTER	
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3,442-5		
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3			
	EATON FULLER FO ULTRASHIFT	FORWARD	LHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER	
				CHELSEA 221-3, 236-5, 340-3, 340-5, 442-3,442-5		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-3, 828-3		
		CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5				
		SETBACK	LHS	MUNCIE TG6-1, CS6-1	REQUIRES 55 DEGREE ADAPTER	
				CHELSEA 221-3, 236-3, 340-5, 442-3		
	BOTTOM		MUNCIE TG8-1, TG8-3, CS8-3, 828-3			



Transmission PTO Compatibility Matrix

4800/4900SB AWD - Allison & Eaton Fuller



4800SB AWD (with Front Drive Axle) GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S				
ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES
Detroit DD13	ALLISON 4000 SERIES	LHS	CD05-3	
			CHELSEA 267-3, 277-3	
		TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3	
			CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	
	RHS	MUNCIE TG6-1	REQUIRES 55 DEGREE ADAPTER	
		CHELSEA 221-3, 236-3, 340-5, 442-5	REQUIRES 55 DEGREE ADAPTER	
EATON FULLER RT/RTLO	BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-3, 828-5		
		CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 863-3, 863-2, 880-3, 880-5		

4900SB AWD (with Front Drive Axle) GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S				
ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES
SERIES 60	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3	
			CHELSEA NOT AVAILABLE	
		TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3	
			CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859- 5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	
	EATON FULLER RT/RTLO	RHS	MUNCIE TG6-3, CS6-3	REQUIRES 55 DEGREE ADAPTER
			CHELSEA 221-3, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 49 DEGREE ADAPTER
BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-3, 828-5			
	CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 863-3, 863-2, 880-3, 880-5			

Refer to Page 4-9 for PTO Model Number Descriptions

Transmission PTO Compatibility Matrix

4900SB - Allison & Eaton Fuller

Detroit
DD13

4900SB SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S						
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES	
SETBACK WITH STD SHACKLED FRONT SU	Detroit DD13	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3		
				CHELSEA NOT AVAILABLE		
			TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3		
				CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5		
				RHS	MUNCIE CS6-1	REQUIRES 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
					CHELSEA 236-3	
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3			
			CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5			
		EATON FULLER RT/RTLO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER	
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3		
				CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5		
RHS	MUNCIE CS6-1		REQUIRES 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST			
	CHELSEA 221-3, 236-3					
BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3					
	CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5					



109-AA4 549-998 WITHOUT FRONT FRAME EXTENSION

4900SB SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S					
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES
SETBACK WITH STD SHACKLED FRONT SUSPN	Detroit DD15/16, Cummins ISX WITH 109-AA4 WITHOUT FRONT FRAME EXTENSION 549-998	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3	
				CHELSEA 277-5, 870-5	
			TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3	PTO'S NOT AVAILABLE ON LOWMAX MODEL (CAB DROPPED 5 INCHES)
				CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	
			RHS	MUNCIE CS6-1, TG6-1	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
				CHELSEA 340-5, 442-5	
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3		
			CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5		
		EATON FULLER RT/RTLO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3	
				CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5	
RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3		REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST		
	CHELSEA 221-3, 221-5, 236-3, 236-5, 340-5, 442-3, 442-5				
BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3				
	CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5				
EATON FULLER FR/FRO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST		
		CHELSEA 221-3, 221-5, 236-3, 236-5, 340-5, 442-3, 442-5			
	BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3			
		CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5			
	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST		
		CHELSEA 221-3, 221-5, 236-3, 236-5, 340-5, 442-3, 442-5			
BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3				
	CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5				




Refer to Page 4-9 for PTO Model Number Descriptions


Transmission PTO Compatibility Matrix

4900SF - Allison & Eaton Fuller

Detroit DD13

4900SF/4900EX SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S							
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES		
SETFORWARD WITH STD SHACKLED FRONT SUSPN	 Detroit Dd13	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3, CD10-3, CS10/11-3, CS24/25-3, HS24-3	PTO'S NOT AVAILABLE ON LOWMAX MODEL (CAB DROPPED 5 INCHES)		
				CHELSEA 267-5, 277-5, 870-5			
			TOP	MUNCIE CD05-1, CD05-3, CD10- 1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3			
				CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5			
				RHS		MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
						CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3				
			CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5				
		EATON FULLER FR/FRO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER		
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3			
				CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5			
EATON FULLER FO ULTRASHIFT	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST				
		CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST				
	BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3					
		CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5					

109-AA4 549-998 WITHOUT FRONT FRAME EXTENSION

4900SF/4900EX SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S							
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES		
SETFORWARD WITH STD SHACKLED FRONT SUSPN	 Detroit DD15/16, Cummins ISX WITH 109-AA4 (3.5 DEG POWER ANGLE)	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3, CD10-3, CS10/11-3, CS24/25-3, HS24-3	PTO'S NOT AVAILABLE ON LOWMAX MODEL (CAB DROPPED 5 INCHES)		
				CHELSEA 267-5, 277-5, 870-5			
			TOP	MUNCIE CD05-1, CD05-3, CD10- 1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3			
				CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5			
				RHS		MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
						CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3				
			CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5				
		EATON FULLER FR/FRO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER		
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER		
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3			
				CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5			
EATON FULLER FO ULTRASHIFT	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST				
		CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER, PTOS NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST				
	BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3					
		CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5					

Refer to Page 4-9 for PTO Model Number Descriptions



Transmission PTO Compatibility Matrix

4900XD - Allison & Eaton Fuller

4900XD SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S						
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES	
SETBACK WITH SLIPPED FRONT SUSPN	Detroit SERIES 60 Cummins ISX WITH 109-A06 (2.5 DEG POWER ANGLE)	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3		
				CHelsea NOT AVAILABLE		
			TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3		
				CHelsea 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5		
				RHS	MUNCIE CS6-1, TG6-1	REQUIRES 55 DEGREE ADAPTER
					CHelsea 221-3, 236-3, 340-5	REQUIRES 45 DEGREE ADAPTER
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3			
			CHelsea 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5			
		EATON FULLER RT/RTLO	EATON FULLER FR/FRO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER
					CHelsea 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER
				BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3	
					CHelsea 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5	

4900XD SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S						
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES	
SETBACK WITH SLIPPED FRONT SUSPN	Detroit DD15/16, Cummins ISX WITH 109-AA4 (3.5 DEG POWER ANGLE)	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3		
				CHelsea NOT AVAILABLE		
			TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3		
				CHelsea 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5		
				RHS	MUNCIE NOT AVAILABLE	
					CHelsea 236-3, 340-5	REQUIRES 49 DEGREE ADAPTER, PTO'S NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3			
			CHelsea 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5			
		EATON FULLER RT/RTLO	EATON FULLER FR/FRO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTO'S NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
					CHelsea 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER, PTO'S NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
				BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3	
					CHelsea 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5	

Refer to Page 4-9 for PTO Model Number Descriptions



Transmission PTO Compatibility Matrix

4900SF/SB - Allison & Eaton Fuller With Front Frame Extension 549- WITH FRONT FRAME EXTENSION

4900SF/4900EX SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S					
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES
SET FORWARD WITH STD SHACKLED FRONT SUSPN	Detroit SERIES 60 Cummins ISX WITH FRONT FRAME EXTENSION (2.5 DEG POWER ANGLE)	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3, CD10-1, CD10-3, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-3	
				CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-5, 870-3, 870-5, 890-5	
			TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3	
				CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	
		EATON FULLER RT/RTLO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTO'S NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
				CHELSEA 221-3, 221-5, 236-3, 340-3, 340-5, 442-3, 442-5	
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3	
				CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5	
		EATON FULLER FR/FRO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	REQUIRES 45 OR 55 DEGREE ADAPTER
			BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3	
				CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5	
EATON FULLER FO ULTRASHIFT	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTO'S NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST		
		CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5			
	BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3			
		CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5			

549- WITH FRONT FRAME EXTENSION

4900SB SINGLE NON DRIVE FRONT AXLE GUIDELINE CHART-TRANSMISSION MOUNTED PTO'S					
AXLE LOCN	ENGINE	TRANSMISSION	PTO LOCATION	PTO	NOTES
SETBACK WITH STD SHACKLED FRONT SUSPN	Detroit SERIES 60 Cummins ISX WITH FRONT FRAME EXTENSION (2.5 DEG POWER ANGLE)	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3, CD10-3	
				CHELSEA 277-5, 890-5, 867-3, 867-5	
			TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3	
				CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	
		EATON FULLER RT/RTLO	RHS	MUNCIE CS6-1	REQUIRES 45 DEGREE ADAPTER, PTO'S NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST
				MUNCIE CS6-1, TG6-1	
				CHELSEA 221-3, 236-3	
				CHELSEA 221-3, 236-3, 340-5, 442-3	
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3		
			CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5		
		EATON FULLER FR/FRO	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER
				CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5	
BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-1, 828-3				
	CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5				
EATON FULLER FO ULTRASHIFT	RHS	MUNCIE TG6-1, TG6-3, CS6-1, CS6-3	REQUIRES 45 OR 55 DEGREE ADAPTER, PTO'S NOT AVAILABLE WITH OPTION 235-076, HORZ INBOARD EXHAUST		
		CHELSEA 221-3, 221-5, 236-3, 236-5, 340-3, 340-5, 442-3, 442-5			
	BOTTOM	MUNCIE TG8-1, TG8-3, 828-1, 828-3			
		CHELSEA 238-3, 238-5, 489-3, 489-5, 880-3, 880-5			

Refer to Page 4-9 for PTO Model Number Descriptions

Transmission PTO Compatibility Matrix

6900XD - Allison & Eaton Fuller



Transmission Mounted PTO Compatibility Matrix				
MODEL	TRANSMISSION	PTO LOCATION	PTO Make and Model	NOTES
SINGLE NON-DRIVE FRONT AXLE	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3 CHELSEA NOT AVAILABLE	
		TOP	MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS24/25-1, HS24-1, HS24-3, CS41-1	STANDARD FRONT CAB CROSSMEMBER
			CHELSEA 267-3, 267-5, 277-3, 277-5, 278-3, 278-5, 870-3, 877-3	
			MUNCIE CS10/11-3, CS41-3 CHELSEA 859-5, 867-3, 867-5, 870-5, 877-5	REQUIRES FRONT CAB CROSSMEMBER WITH PTO CLEARANCE OPTION (STD WITH DD15/16)
SINGLE DRIVEN FRONT AXLE	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3 CHELSEA NOT AVAILABLE	
		TOP	MUNCIE NOT AVAILABLE CHELSEA NOT AVAILABLE	STANDARD FRONT CAB CROSSMEMBER
			MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3	REQUIRES FRONT CAB CROSSMEMBER WITH PTO CLEARANCE OPTION (STD WITH DD15/16)
			CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	
TANDEM NON-DRIVE FRONT AXLE	ALLISON 4000 SERIES	LHS	MUNCIE CD05-3 CHELSEA NOT AVAILABLE	
		TOP	MUNCIE NOT AVAILABLE CHELSEA NOT AVAILABLE	STANDARD FRONT CAB CROSSMEMBER
			MUNCIE CD05-1, CD05-3, CD10-1, CD10-3, CS10/11-1, CS10/11-3, CS24/25-1, CS24/25-3, HS24-1, HS24-3, CS41-1, CS41-3	REQUIRES FRONT CAB CROSSMEMBER WITH PTO CLEARANCE OPTION (STD WITH DD15/16)
			CHELSEA 267-3, 267-5, 269-3, 269-5, 277-3, 277-5, 278-3, 278-5, 859-3, 859-5, 867-3, 867-5, 870-3, 870-5, 877-3, 877-5	
SINGLE NON-DRIVE FRONT AXLE	EATON FULLER RT/RTLO	RHS	MUNCIE NOT AVAILABLE CHELSEA 221-3, 236-3, 340-5	REQUIRES 55 DEGREE ADAPTER
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-3 CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5	
SINGLE DRIVEN FRONT AXLE	EATON FULLER RT/RTLO	RHS	MUNCIE CS6-1 CHELSEA NOT AVAILABLE	REQUIRES 55 DEGREE ADAPTER
		BOTTOM	MUNCIE TG8-1, TG8-3, CS8-1, CS8-3, 828-3 CHELSEA 238-3, 238-5, 489-3, 489-5, 823-3, 823-5, 880-3, 880-5	
TANDEM NON-DRIVE FRONT AXLE	EATON FULLER RT/RTLO	RHS	MUNCIE TG6-1, CS6-1 CHELSEA NOT AVAILABLE	REQUIRES 55 DEGREE ADAPTER, TG6 W/CABLE SHIFT ONLY
		BOTTOM	MUNCIE NOT AVAILABLE CHELSEA NOT AVAILABLE	

Refer to Page 4-9 for PTO Model Number Descriptions