



# Chelsea<sup>®</sup> Power Take-Off

PTO General Information



ENGINEERING YOUR SUCCESS.



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## Chelsea PTO Series Information

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**IMPORTANT:** This publication provides general information about our products. Please refer to the Application Catalog and Owner's Manuals for Installation Instructions and Safety Information. Information about our products can also be found on [www.PHTruck.com](http://www.PHTruck.com) and [www.parker.com](http://www.parker.com).

## Chelsea PTO Series Information

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### 221 Series

- Low speed, heavy duty applications on both manual and automatic transmissions
- Available with both a standard housing or a special low-profile housing
- Pressure lube option
- Wide range of pump flanges
- Torque rating up to 250 lbs-ft

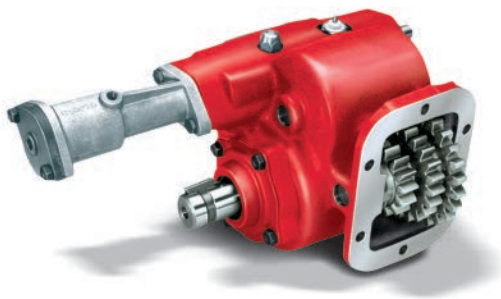
Specifications Chart	Approximate Weight: 30 lbs. [13.6 kg]	
	221*C	221*E
Intermittent Torque Rating lbs-ft [Nm]	250 [339]	250 [339]
HP Rating for Intermittent Service		
At 500 RPM of Output Shaft HP [Kw]	24 [18]	24 [18]
At 1000 RPM of Output Shaft HP [Kw]	48 [36]	48 [36]



### 290 Series

- Deep reach housing design eliminates the need for special adapters
- Torque ratings up to 175 lbs-ft
- Rotatable pump flanges for maximum clearance
- Fifteen (15) output options; four (4) speed ratios; seven (7) shift options

Specifications Chart	Approximate Weight: 37 lbs. [16.8 kg]		
	290*F	290*Q	290*U
Intermittent Torque Rating lbs-ft [Nm]	175 [237]	175 [237]	175 [237]
HP Rating for Intermittent Service			
At 500 RPM of Output Shaft HP [Kw]	17 [12]	17 [12]	17 [12]
At 1000 RPM of Output Shaft HP [Kw]	33 [25]	33 [25]	33 [25]



### 340 Series

- Low-speed forward and reverse
- Removable cover plate for adjusting backlash
- Shift options include air and lever
- Variety of input gears to cover most applications

Specifications Chart	Approximate Weight: 32 lbs. [15 kg]
	340*F
Intermittent Torque Rating lbs-ft [Nm]	200 [271]
HP Rating for Intermittent Service	
At 500 RPM of Output Shaft HP [Kw]	19 [14]
At 1000 RPM of Output Shaft HP [Kw]	38 [28]

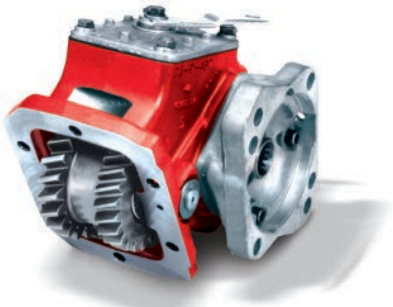




**442 Series**

- Engineered to work with virtually all existing transmission applications
- Economical workhorse features a cast iron housing
- Slip fit idler pin for easy serviceability
- Easy to set backlash

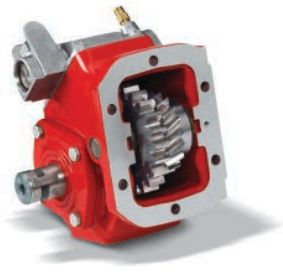
Specifications Chart	Approximate Weight: 28 lbs. [12.7 kg]											
	442 *A	442 *B	442 *C	442 *F	442 *H	442 *L	442 *Q	442 *R	442 *S	442 *U	442 *W	442 *X
Intermittent Torque Rating lbs-ft [Nm]	250 [339]	250 [339]	250 [339]	250 [339]	250 [339]	250 [339]	225 [305]	225 [305]	200 [271]	195 [264]	175 [237]	140 [190]
HP Rating for Intermittent Service												
At 500 RPM of Output Shaft HP [Kw]	24 [18]	24 [18]	24 [18]	24 [18]	24 [18]	24 [18]	21 [16]	21 [16]	19 [14]	19 [14]	17 [12]	13 [10]
At 1000 RPM of Output Shaft HP [Kw]	48 [36]	48 [36]	48 [36]	48 [36]	48 [36]	48 [36]	43 [32]	43 [32]	38 [28]	37 [28]	33 [25]	27 [20]



**447 Series**

- Eliminates adjacent gear interference inside transmission/PTO opening
- One-piece input gear
- Pressure lube option available
- No adapter plate required

Specifications Chart	Approximate Weight: 21 lbs. [9.5 kg]			
	447*Q	447*S	447*U	447*W
Intermittent Torque Rating lbs-ft [Nm]	225 [305]	200 [271]	195 [264]	175 [237]
HP Rating for Intermittent Service				
At 500 RPM of Output Shaft HP [Kw]	21 [16]	19 [14]	19 [14]	17 [12]
At 1000 RPM of Output Shaft HP [Kw]	43 [32]	38 [28]	38 [28]	33 [25]



## 660 Series

- Flexible design works with most popular transmission applications
- Deep mount housing option available for Mack applications
- Designed for higher torque applications such as pneumatic blowers
- Torque ratings up to 375 lbs-ft

Specifications Chart	Approximate Weight: 28.2 lbs. [12.8 kg]				
	660*F	660*H	660*Q	660*R	660*S
*Intermittent Torque Rating lbs-ft [Nm]	375 [508]	375 [508]	375 [508]	350 [475]	325 [441]
HP Rating for Intermittent Service					
At 500 RPM of Output Shaft HP [Kw]	36 [27]	36 [27]	36 [27]	33 [25]	31 [23]
At 1000 RPM of Output Shaft HP [Kw]	71 [53]	71 [53]	71 [53]	67 [50]	62 [46]
At 1500 RPM of Output Shaft HP [Kw]	107 [80]	107 [80]	107 [80]	100 [75]	93 [69]
*Above 1500 RPM: Call for Approval					

PTO Options Chart – Mechanical PTOs		221	290	340
<b>Lubrication</b>				
P	Pressure Lube	x		
X	No Pressure Lube	x	x	x
<b>Shifting</b>				
G	Air Shift (Opposite Output)			x
H	No Shift Assembly	x		
P	12V Elec/Air Shift	x	x	
C	Special Shift Control & Bracket Kit	x		
M	Constant Mesh	x		
A	Air Shift (Same Side as Output)			x
A	Air Shift	x	x	
S	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/ Neutral Spring Return	x	x	
T	Air Shift w/ PTO/Dump Pump Combo Valve w/o Kick Out w/ Neutral Spring Return	x	x	
U	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/o Neutral Spring Return	x	x	
V	Air Shift w/o Installation Kit	x	x	x
W	Wire Shift	x	x	
X	Wire Shift w/o Cable & Knob	x		
Y	Lever Shift			x
<b>Output</b>				
AK	SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	
XE	SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)	x	x	
XK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	
XQ**	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x		
AF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	
AZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x		
GA	Greaseable SAE B 2-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x		
GB	Greaseable SAE B 4-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x		
GK	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x		
GQ**	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x		
GF	Greaseable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x		
GR	Greaseable Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x		
RC	Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)	x	x	
RD	Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x		
RA	Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	
RF	Rotatable SAE B 2-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	
RE	Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x	x	x
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x	x	
XX***	1-1/4" Tapered Output Shaft w/ Keyway	x	x	
XY	ISO 7653 Pump Mount DIN 5462 Shaft	x	x	

\*\* XQ/GQ same as XK/GK except flange rotated 90°

\*\*\* Order companion (379824) separately

**NOTE:** Always check current price book for available options

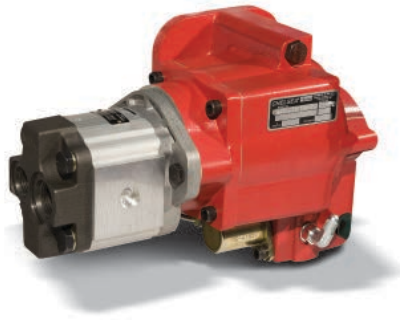


PTO Options Chart – Mechanical PTOs		442	447	660
<b>Lubrication</b>				
P	Pressure Lube	x	x	x
X	No Pressure Lube	x	x	x
<b>Shifting</b>				
H	No Shift Assembly	x	x	x
P	12V Elec/Air Shift	x	x	x
C	Special Shift Control & Bracket Kit	x	x	x
M	Constant Mesh	x	x	x
A	Air Shift	x	x	x
S	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/ Neutral Spring Return	x	x	x
T	Air Shift w/ PTO/Dump Pump Combo Valve w/o Kick Out w/ Neutral Spring Return	x	x	x
U	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/o Neutral Spring Return	x	x	x
V	Air Shift w/o Installation Kit	x	x	x
W	Wire Shift	x	x	x
X	Wire Shift w/o Cable & Knob	x	x	x
D	Eaton Procision 12V Elec/Air	x		
E	Hydraulic Shift (Eaton Procision)	x		
<b>Output</b>				
AK	SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
SQ	SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x		
XE	SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)	x	x	x
XK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
XQ**	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
AF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	x
AZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x	x	x
GA	Greaseable SAE B 2-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x	x	x
GH	Greaseable SAE B 2-Bolt Rotatable Flange, SAE BB Shaft (1" - 15T)			x
GB	Greaseable SAE B 4-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x	x	x
GK	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
GQ**	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
GF	Greaseable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	x
GZ	Greaseable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)			x
GR	Greaseable Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x	x	x
GY	Greaseable ISO 7653 Pump Mount DIN 5462 Shaft			x
RC	Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)	x	x	x
RD	Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
RA	Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
RF	Rotatable SAE B 2-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	x
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
RE	Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	x
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x	x
RY	Rotatable ISO 7653 Pump Mount DIN 5462 Shaft	x	x	x
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x	x	x
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x	x	x
XV	1410 Series Companion Flange			x
XX***	1-1/4" Tapered Output Shaft w/ Keyway	x	x	x
XY	ISO 7653 Pump Mount DIN 5462 Shaft	x	x	x

\*\* XQ/GQ same as XK/GK except flange rotated 90°

\*\*\* Order companion (379824) separately

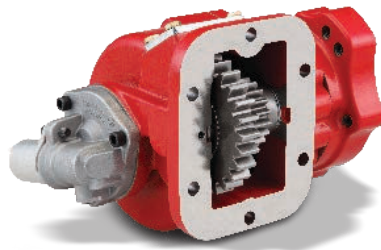
**NOTE:** Always check current price book for available options



### 252 Series

- 12V Hydraulic Shift
- Lightweight housing design
- Weather tight electrical connectors
- Integrated cartridge valve
- Compact size
- Torque up to 120 lbs-ft

Specifications Chart	Approximate Weight: 25 lbs. [11 kg]	
	252*D	252*M
Intermittent Torque Rating lbs-ft [Nm]	120 [163]	50 [68]
HP Rating for Intermittent Service		
At 500 RPM of Output Shaft HP [Kw]	11 [9]	5 [4]
At 1000 RPM of Output Shaft HP [Kw]	23 [17]	10 [7]

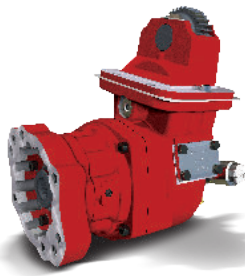


### 272 Series Air or Hydraulic

- Elec/Air or Elec/Hyd 12/24V shifting
- Integral and remote shift options available
- Continuous torque rating of 300 lbs-ft
- Electronic Overspeed Control
- Internal self-adjusting shaft brake option (patent #7159701)
- Smart Start option available

(Supersedes 230/231, 270/271, and 236 Series)

Specifications Chart	Approximate Weight: 49 lbs. [22 kg]								
	272*A	272*B	272*C	272*D	272*G	272*K	272*M	272*P	272*S
Intermittent & <b>Continuous</b> Torque Rating lbs-ft [Nm]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]
HP Rating for Intermittent & <b>Continuous</b> Service									
At 500 RPM of Output Shaft HP [Kw]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]
At 1000 RPM of Output Shaft HP [Kw]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]



### 272-Ford Series

- FORD TorqueShift® Transmission
- Multiple ratios available
- Smart Start option available
- Intermittent torque rating up to 300 lbs-ft
- Electronic Overspeed Control
- Fits F650/750 platforms ONLY

Specifications Chart	Approximate Weight: 55 lbs. [25 kg]						
	272F*C	272F*D	272F*G	272F*K	272F*M	272F*P	272F*S
Intermittent Torque Rating lbs-ft [Nm]	300 [407]	300 [407]	300 [407]	300 [407]	274 [371]	246 [333]	220 [298]
HP Rating for Intermittent Service							
At 500 RPM of Output Shaft HP [Kw]	29 [21]	29 [21]	29 [21]	29 [21]	26 [19]	23 [17]	21 [16]
At 1000 RPM of Output Shaft HP [Kw]	57 [43]	57 [43]	57 [43]	57 [43]	52 [39]	47 [35]	42 [31]

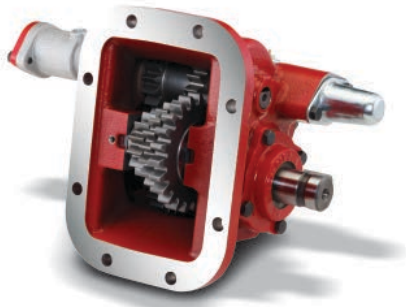
PTO Options Chart – PowerShift PTOs		252	272	272F
<b>Lubrication</b>				
P	Pressure Lube	x	x	x
R	Pressure Lube Valve Body Rotated 120°		x	
S	Pressure Lube Valve Body Rotated 240°		x	
W	Wet Spline - Hydraulic Shift Only, HV Input		x	
X	No Pressure Lube		x	
V	Wet Spline Valve Body Rotated 120° - Hydraulic Shift Only, HV Input		x	
Y	Wet Spline Valve Body Rotated 240° - Hydraulic Shift Only, HV Input		x	
<b>Shifting</b>				
B	12V Elec/Hyd	x	x	x
D	24V Elec/Hyd		x	
E	12V Elec/Hyd w/o Installation Kit		x	x
N	24V Elec/Hyd w/o Installation Kit		x	
K	12V Elec/Hyd w/ EOC		x	x
L	24V Elec/Hyd w/ EOC		x	
G	12V Elec/Hyd Remote Valve w/o EOC		x	
H	24V Elec/Hyd Remote Valve w/o EOC		x	
A	Manual Air Shift		x	
V	Manual Air Shift w/o Installation Kit		x	
R	12V Elec/Air Shift w/ EOC - Remote		x	
4	24V Elec/Air Shift w/ EOC - Remote		x	
J	12V Elec/Air Shift w/ EOC		x	
3	24V Elec/Air Shift w/ EOC		x	
P	12V Elec/Air Shift - Remote		x	
Q	24V Elec/Air Shift - Remote		x	
1	12V Elec/Air Shift		x	
2	24V Elec/Air Shift		x	
<b>Output</b>				
AD	SAE A 2-Bolt Flange, SAE AH Shaft (3/4" - 11T)	x		
XE	SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)	x		
RE	Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)		x	x
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B (7/8" - 13T)		x	x
RF	Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)		x	x
RZ	Rotatable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)		x	x
RS	Rotatable SAE C 2 or 4-Bolt Flange, SAE C (1-1/4" - 14T)		x	x
RY	Rotatable ISO 7653 Pump Mount DIN 5462 Shaft		x	x
AB	DIN 120 Flange		x	
AC	DIN 100 Flange		x	
BD	Shaft Brake - 1-1/4" Round w/ 5/16" Key		x	
BV	Shaft Brake - 1410 Series Companion Flange		x	
SD	Smart Start - Rd Standard Shaft (1-1/4" - 5/16" Key)		x	x
SV	Smart Start - 1410 Series Companion Flange		x	x
XB	1" Round Shaft w/ 1/4" Key	x		
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)		x	x
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)		x	x
XV	1410 Series Companion Flange		x	x

Continued on Next Page

**NOTE:** Always check current price book for available options

PTO Options Chart – PowerShift PTOs		252	272	272F
<b>Output (Continued)</b>				
P37	Hyd. Pump 3.7 GPM @ 1000 RPM	x		
P42	Hyd. Pump 4.2 GPM @ 1000 RPM	x		
P71	Hyd. Pump 7.1 GPM @ 1000 RPM	x		
P82	Hyd. Pump 8.2 GPM @ 1000 RPM	x		
1121	Hyd. Pump 2.1 GPM @ 1000 RPM	x		
1126	Hyd. Pump 2.6 GPM @ 1000 RPM	x		
1137	Hyd. Pump 3.7 GPM @ 1000 RPM	x		
1462	Hyd. Pump 6.2 GPM @ 1000 RPM	x		

**NOTE:** Always check current price book for available options



### 348 Series

- Single low-speed forward and reverse
- Removable cover plate for adjusting backlash
- Shift options include air and lever
- Variety of input gears to cover most applications
- Integral 8-Bolt housing to reduce potential leak points

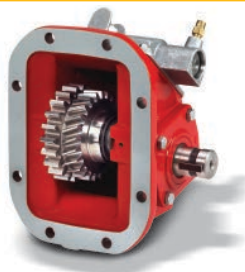
Specifications Chart	Approximate Weight: 32 lbs. [15 kg]	
	348*F	
Intermittent Torque Rating lbs-ft [Nm]	200 [271]	
HP Rating for Intermittent Service		
At 500 RPM of Output Shaft HP [Kw]	19 [14]	
At 1000 RPM of Output Shaft HP [Kw]	38 [28]	



### 489 Series

- 442 Series family, but with an 8-Bolt mounting flange
- No adapter plate needed
- Less installation time, less expense, and reduced leak points
- Wide range of shifter options and pump flanges
- Greaseable and rotatable flanges available

Specifications Chart	Approximate Weight: 30 lbs. [13.6 kg]										
	489 *A	489 *C	489 *F	489 *H	489 *L	489 *Q	489 *R	489 *S	489 *U	489 *W	489 *X
Intermittent Torque Rating lbs-ft [Nm]	250 [339]	250 [339]	250 [339]	250 [339]	250 [339]	225 [305]	225 [305]	200 [271]	195 [264]	175 [237]	140 [190]
HP Rating for Intermittent Service											
At 500 RPM of Output Shaft HP [Kw]	24 [18]	24 [18]	24 [18]	24 [18]	24 [18]	21 [16]	21 [16]	19 [14]	19 [14]	17 [12]	13 [10]
At 1000 RPM of Output Shaft HP [Kw]	48 [36]	48 [36]	48 [36]	48 [36]	48 [36]	43 [33]	43 [33]	38 [28]	37 [28]	33 [25]	27 [20]

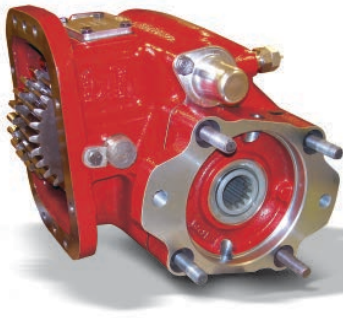


### 680 Series

- Excellent coverage for transmissions with 8-Bolt openings
- Deep mount housing option for Mack applications
- Designed for higher torque applications like blowers and high pressure hydraulics
- Wide range of shift and output options

Specifications Chart	Approximate Weight: 28.2 lbs. [12.8 kg]				
	680*F	680*H	680*Q	680*R	680*S
*Intermittent Torque Rating lbs-ft [Nm]	375 [508]	375 [508]	375 [508]	350 [475]	325 [441]
HP Rating for Intermittent Service					
At 500 RPM of Output Shaft HP [Kw]	36 [27]	36 [27]	36 [27]	33 [25]	31 [23]
At 1000 RPM of Output Shaft HP [Kw]	71 [53]	71 [53]	71 [53]	67 [50]	62 [46]
At 1500 RPM of Output Shaft HP [Kw]	107 [80]	107 [80]	107 [80]	100 [75]	93 [69]

\*Above 1500 RPM: Contact Chelsea Technical for Approval



**823 Series**

- Most robust PTO in the industry
- Torque ratings up to 750 lbs-ft
- Lever shift standard
- Inspection cover for adjusting backlash
- Popular pump mounts available
- Seven (7) output options; four (4) shift options
- Wet Spline available

Specifications Chart	Approximate Weight: 76 lbs. [34.5 kg]						
	823*B	823*D	823*G	823*J	823*M	823*R	823*T
Intermittent Torque Rating lbs-ft [Nm]	750 [919]	750 [919]	750 [919]	750 [919]	750 [919]	550 [734]	500 [644]
HP Rating for Intermittent Service							
At 500 RPM of Output Shaft HP [Kw]	71 [53]	71 [53]	71 [53]	71 [53]	71 [53]	52 [38]	47 [35]
At 1000 RPM of Output Shaft HP [Kw]	143 [107]	143 [107]	143 [107]	143 [107]	143 [107]	104 [43]	95 [37]



**863 Series**

- Designed to fit transmissions with 8-Bolt openings
- Capable of up to 500 lbs-ft of intermittent torque
- Designed for maximum duty reversible applications such as large-capacity winches
- Lever shift is standard

Specifications Chart	Approximate Weight: 96 lbs. [44 kg]
	863*B
Intermittent Torque Rating lbs-ft [Nm]	500 [678]
HP Rating for Intermittent Service	
At 500 RPM of Output Shaft HP [Kw]	48 [36]
At 1000 RPM of Output Shaft HP [Kw]	95 [71]



**880 Series**

- Wide coverage for tough applications
- Speed ratios for high and low speed applications
- Removable shift cover for adjusting backlash
- Torque ratings up to 500 lbs-ft

Specifications Chart	Approximate Weight: 63 lbs. [28.6 kg]							
	880*B	880*D	880*G	880*J	880*M	880*Q	880*R	880*T
Intermittent Torque Rating lbs-ft [Nm]	500 [678]	500 [678]	500 [678]	500 [678]	500 [678]	450 [610]	400 [542]	350 [475]
HP Rating for Intermittent Service								
At 500 RPM of Output Shaft HP [Kw]	48 [36]	48 [36]	48 [36]	48 [36]	48 [36]	43 [32]	38 [28]	33 [25]
At 1000 RPM of Output Shaft HP [Kw]	95 [71]	95 [71]	95 [71]	95 [71]	95 [71]	86 [64]	76 [57]	67 [50]



PTO Options Chart – Mechanical PTOs		348	489	680	823	863	880
<b>Lubrication</b>							
P	Pressure Lube		x	x	x	x	x
X	No Pressure Lube	x	x	x	x	x	x
W	Wet Spline				x		
<b>Shifting</b>							
G	Air Shift (Opposite Output)	x					
P	12V Elec/Air Shift		x	x			x
C	Special Shift Control & Bracket Kit		x	x			
M	Constant Mesh		x	x	x		x
A	Air Shift		x	x	x		x
A	Air Shift (Same Side as Output)	x					
S	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/ Neutral Spring Return		x	x			
T	Air Shift w/ PTO/Dump Pump Combo Valve w/o Kick Out w/ Neutral Spring Return		x	x			
U	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/o Neutral Spring Return		x	x			
V	Air Shift w/o Installation Kit	x	x	x	x		x
W	Wire Shift		x	x			
X	Wire Shift w/o Cable & Knob		x	x			
Y	Lever Shift	x			x	x	x
H	No Shift Assembly		x	x			x
D	12V Elec/Air Shift Eaton Endurant		x				x
Q	24V Elec/Air Shift Eaton Endurant		x				
<b>Output</b>							
XG	Non Standard SAE A 2-Bolt Flange, Non Standard Shaft (3/4" - 3/16" Key) Long						
AK	SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			
XU	SAE C 2-Bolt Flange, SAE C Shaft (1-1/4" - 14T)				x, w		
SQ	SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x				
XS	SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)				x, w		
XE	SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)		x	x			
XK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			x
XQ**	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			
AF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)		x	x			x
AZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)		x	x			x
XS	SAE C 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)						x
GA	Greaseable SAE B 2-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)		x	x			
GH	Greaseable SAE B 2-Bolt Rotatable Flange, SAE BB Shaft (1" - 15T)			x			
GU	Greaseable SAE C 2-Bolt Flange, SAE C Shaft (1-1/4" - 14T)				x		
GB	Greaseable SAE B 4-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)		x	x			
GS	Greaseable SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)				x		x
GK	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			
GQ**	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			
GF	Greaseable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)		x	x			
GZ	Greaseable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)			x			
GR	Greaseable Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)		x	x			
GY	Greaseable ISO 7653 Pump Mount DIN 5462 Shaft			x			
RC	Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)		x	x			
RD	Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			
RA	Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			

\*\* XQ/GQ same as XK/GK except flange rotated 90°

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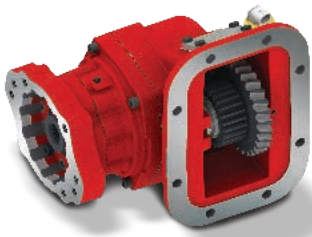
w = Wet Spline Option

**NOTE:** Always check current price book for available options

PTO Options Chart – Mechanical PTOs		348	489	680	823	863	880
<b>Output (Cont'd)</b>							
RE	Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)		x	x			
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)		x	x			
RF	Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)		x	x			
RY	Rotatable ISO 7653 Pump Mount DIN 5462 Shaft		x	x			
AB	DIN 120				x		
AC	DIN 100				x		
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x	x	x			
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)		x	x			
XV	1410 Series Companion Flange			x	x	x	x
XX***	1-1/4" Tapered Output Shaft w/ Keyway		x	x			
XY	ISO 7653 Pump Mount DIN 5462 Shaft		x	x			x

\*\*\* Order companion (379824) separately

**NOTE:** Always check current price book for available options



(Supersedes 238 Series)

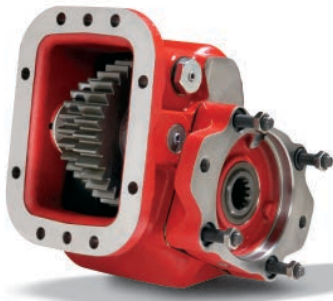
## 282 Series

- Elec/Hyd or Elec/Air 12 & 24 Volt shifting
- Integral or remote shift air valve options available
- Continuous torque rating of 300 lbs-ft
- Electronic Overspeed Control
- Internal self-adjusting shaft brake option (patent #7159701)

### Specifications Chart

Approximate Weight: 49 lbs. [22 kg]

	282*B	282*C	282*D	282*G	282*K	282*M	282*P	282*S	282*T
Intermittent & <b>Continuous</b> Torque Rating lbs-ft [Nm]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]	300 [407]
HP Rating for Intermittent & <b>Continuous</b> Service									
At 500 RPM of Output Shaft HP [Kw]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]	29 [21]
At 1000 RPM of Output Shaft HP [Kw]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]	57 [43]



## 852 Series - Hydraulic

- Designed for heavy duty applications
- Three speed ratios
- Three output options
- Pressure lubrication standard
- Intermittent torque rating of 500 lbs-ft

### Specifications Chart

Approximate Weight: 88 lbs. [40 kg]

	852*B	852*G	852*J
Intermittent Torque Rating lbs-ft [Nm]	500 [678]	500 [678]	500 [678]
HP Rating for Service			
At 500 RPM of Output Shaft HP [Kw]	48 [36]	48 [36]	48 [36]
At 1000 RPM of Output Shaft HP [Kw]	95 [71]	95 [71]	95 [71]



## 885 Series - Pneumatic

- Designed for heavy duty applications such as pneumatic blowers
- Rugged cast iron housing
- Four speed ratios to choose from
- Pressure lubrication available

### Specifications Chart

Approximate Weight: 88 lbs. [40 kg]

	885*B	885*G	885*J	885*M
Intermittent Torque Rating lbs-ft [Nm]	500 [678]	500 [678]	500 [678]	500 [678]
HP Rating for Intermittent Service				
At 500 RPM of Output Shaft HP [Kw]	48 [36]	48 [36]	48 [36]	48 [36]
At 1000 RPM of Output Shaft HP [Kw]	95 [71]	95 [71]	95 [71]	95 [71]

PTO Options Chart – PowerShift PTOs		282	852	885
<b>Lubrication</b>				
P	Pressure Lube	x	x	x
R	Pressure Lube Valve Body Rotated 120°	x		
S	Pressure Lube Valve Body Rotated 240°	x		
W	Wet Spline	x		
X	No Pressure Lube	x		x
V	Wet Spline Valve Body Rotated 120°	x		
Y	Wet Spline Valve Body Rotated 240°	x		
<b>Shifting</b>				
A	Manual Air Shift	x		x
B	12V Elec/Hyd	x	x	
D	24V Elec/Hyd	x	x	
E	12V Elec/Hyd w/o Installation Kit	x		
N	24V Elec/Hyd w/o Installation Kit	x		x
K	12V Elec/Hyd w/ EOC	x	x	
L	24V Elec/Hyd w/ EOC	x	x	
G	12V Elec/Hyd Remote Valve w/o EOC	x		
H	24V Elec/Hyd Remote Valve w/o EOC	x		
V	Manual Air Shift w/o Installation Kit	x		
R	12V Elec/Air Remote w/ EOC	x		
J	12V Elec/Air w/ EOC	x		x
P	12V Elec/Air Remote	x		x
Q	24V Elec/Air Remote	x		x
F	No Valve		x	
1	12V Elec/Air	x		
2	24V Elec/Air	x		
3	24V Elec/Air w/ EOC	x		
4	24V Elec/Air Remote w/ EOC	x		
<b>Output</b>				
XU	SAE C 2-Bolt, SAE C Shaft (1-1/4" - 14T)		x	
XS	SAE C 4-Bolt, SAE C Shaft (1-1/4" - 14T)		x	
XS	SAE C 2 or 4-Bolt, SAE C Shaft (1-1/4" - 14T)			x
RE	Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)	x		
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x		
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x		
RF	Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x		
RZ	Rotatable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x		
RS	Rotatable SAE C 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x		
RY	Rotatable ISO 7653 Pump Mount DIN 5462 Shaft	x		
AB	DIN 120	x		
AC	DIN 100	x		
BD	Shaft Brake - Rd Standard Shaft (1-1/4" - 5/16" Key)	x		
BV	Shaft Brake - 1410 Series Companion Flange	x		
SD	Smart Start - Rd Standard Shaft (1-1/4" - 5/16" Key)	x		
SV	Smart Start - 1410 Series Companion Flange	x		
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x		
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x		
XV	1410 Series Companion Flange	x	x	x

**NOTE:** Always check current price book for available options



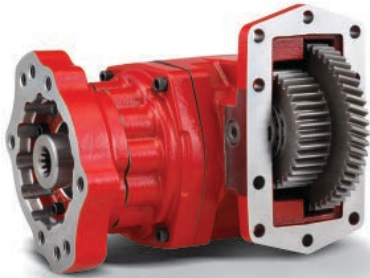
### 267 Series

- Ideal for applications requiring continuous power (non-shiftable)
- SuperTorque™ gears available for 20% higher intermittent torque ratings
- Wet Spline design virtually eliminates spline fretting
- No backlash to set

#### Specifications Chart

Approximate Weight: 35 lbs. [16 kg]

	267*B	267*D	267*G	267*S	267SB	267SD	267SG	267SS
Intermittent Torque Rating lbs-ft [Nm]	335 [454]	335 [454]	300 [407]	250 [339]	402 [545]	402 [545]	360 [488]	265 [359]
HP Rating for Intermittent Service								
At 500 RPM of Output Shaft HP [Kw]	32 [24]	32 [24]	29 [21]	24 [18]	38 [29]	38 [29]	34 [26]	25 [19]
At 1000 RPM of Output Shaft HP [Kw]	64 [48]	64 [48]	57 [43]	48 [36]	77 [57]	77 [57]	69 [51]	50 [38]



### 287 Series

- Ideal for applications requiring continuous power (non-shiftable)
- Wet Spline output options to eliminate spline fretting
- Rotatable flange options
- No backlash to set

#### Specifications Chart

Approximate Weight: 44 lbs. [20 kg]

	287*B	287*C	287*D	287*G	287*K	287*M	287*P	287*S	287*T
<b>Continuous*</b> Torque Rating lbs-ft [Nm]	300 [407]	410 [556]	390 [529]	360 [488]	340 [461]	318 [431]	290 [393]	265 [359]	240 [325]
HP Rating for <b>Continuous</b> Service									
At 500 RPM of Output Shaft HP [Kw]	29 [21]	39 [29]	37 [28]	34 [26]	32 [24]	30 [23]	28 [21]	25 [19]	23 [17]
At 1000 RPM of Output Shaft HP [Kw]	57 [43]	78 [58]	74 [56]	69 [51]	65 [48]	61 [45]	55 [41]	50 [38]	46 [34]



### 877 Series

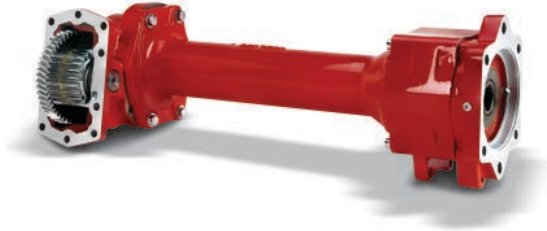
- Ideal for applications requiring continuous power (non-shiftable)
- Continuous torque capacity up to 670 lbs-ft [908 Nm]
- Wet Spline output options to eliminate spline fretting
- Compact housing height reduces clearance issues

#### Specifications Chart

Approximate Weight: 56 lbs. [25 kg]

	877*A	877*B	877*C	877*D	877*E	877*F	877*K	877*G	877*H	877*J
<b>Continuous*</b> Torque Rating lbs-ft [Nm]	670 [908]	630 [854]	590 [800]	550 [746]	485 [658]	430 [583]	404 [548]	380 [515]	355 [481]	335 [454]
HP Rating for <b>Continuous</b> Service										
At 500 RPM of Output Shaft HP [Kw]	64 [48]	60 [45]	56 [42]	52 [39]	46 [35]	41 [31]	38 [29]	36 [27]	34 [25]	32 [24]
At 1000 RPM of Output Shaft HP [Kw]	128 [95]	120 [90]	112 [84]	105 [78]	92 [69]	82 [61]	77 [58]	72 [54]	68 [51]	64 [48]

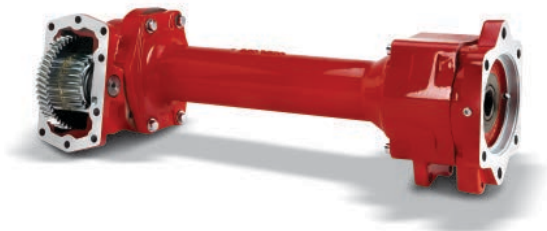
\*Continuous Torque Ratings are good for both Intermittent and Continuous applications.



**897 Series**

- Allison 3000/4000 Family transmissions
- Moves the PTO output flange to the rear of the transmission
- Continuous torque ratings up to 670 lbs-ft
- Installs in two pieces for simplified installation
- Solid 1-piece output shaft
- Available for most cooler/retarder installations
- All pump outputs are Wet Spline to eliminate spline fretting

Specifications Chart	Approximate Weight: 86 lbs. [39 kg]							
	897*A	897*B	897*C	897*D	897*E	897*F	897*G	897*H
<b>Continuous</b> Torque Rating lbs-ft [Nm]	670 [908]	630 [854]	590 [800]	550 [746]	485 [658]	430 [583]	380 [515]	355 [481]
HP Rating for <b>Continuous</b> Service								
At 500 RPM of Output Shaft HP [Kw]	64 [48]	60 [45]	56 [42]	52 [39]	46 [35]	41 [31]	36 [27]	34 [25]
At 1000 RPM of Output Shaft HP [Kw]	128 [95]	120 [90]	112 [84]	105 [78]	92 [69]	82 [61]	72 [54]	68 [51]



**899 Series**

- Allison 4700/4800 Series transmissions
- Moves the PTO output flange to the rear of the transmission
- Continuous torque ratings up to 670 lbs-ft
- Installs in two pieces for simplified installation
- Solid 1-piece output shaft
- Available for most cooler/retarder installations
- All pump outputs are Wet Spline to eliminate spline fretting

Specifications Chart	Approximate Weight: 86 lbs. [39 kg]							
	899*A	899*B	899*C	899*D	899*E	899*F	899*G	899*H
<b>Continuous*</b> Torque Rating lbs-ft [Nm]	670 [908]	630 [854]	590 [800]	550 [746]	485 [658]	430 [583]	380 [515]	355 [481]
HP Rating for <b>Continuous</b> Service								
At 500 RPM of Output Shaft HP [Kw]	64 [48]	60 [45]	56 [42]	52 [39]	46 [35]	41 [31]	36 [27]	34 [25]
At 1000 RPM of Output Shaft HP [Kw]	128 [95]	120 [90]	112 [84]	105 [78]	92 [69]	82 [61]	72 [54]	68 [51]

\*Continuous Torque Ratings are good for both Intermittent and Continuous applications.



PTO Options Chart – Constant Mesh PTOs		267*	287	877	897	899
<b>Lubrication</b>						
P	Pressure Lube	x	x	x		
R	Pressure Lube Valve Body Rotated 120°		x			
S	Pressure Lube Valve Body Rotated 240°		x			
Y	Wet Spline Valve Body Rotated 240°		x			
V	Wet Spline Valve Body Rotated 120°		x			
W	Wet Spline	x	x	x	x	x
<b>Shifting</b>						
M	Constant Mesh	x	x	x	x	x
<b>Output</b>						
AK	SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x, w				
CS	SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)				w (3)	w (3)
ZS	SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)				w	w
DA	SAE D 4-Bolt Flange, SAE D Shaft (1-3/4" - 13T)				w (5)	w (5)
XE	SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)	x				
XK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x				
XQ	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x				
AF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x, w			w (5)	w (5)
CF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)				w (3)	w (3)
AZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x			w (5)	w (5)
CZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)				w (3)	w (3)
XS	SAE C 2 or 4-Bolt, SAE C Shaft (1-1/4" - 14T)				w (5)	w (5)
GA	Greaseable SAE B 2-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x				
GB	Greaseable SAE B 4-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x				
GK	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x				
GQ	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x				
GF	Greaseable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x				
GR	Greaseable Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x				
RC	Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)	x				
RD	Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x				
RA	Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x				
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x, w			
RE	Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x				
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	x			
RF	Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x	x	x, w		
RZ	Rotatable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)		x, w	x, w		
RS	Rotatable SAE C 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x	x, w	x, w		
RY	Rotatable ISO 7653 Pump Mount DIN 5462 Shaft	x, w	x	x, w		
AB	DIN 120 Flange		x	x	x	x
AC	DIN 100 Flange		x	x	x	x
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x	x			
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x				
XV	1410 Series Companion Flange		x	x	x (5)	x (5)
XX	1-1/4" Tapered Output Shaft w/ Keyway	x				
XY	ISO 7653 Pump Mount DIN 5462 Shaft	x			w (3)	w (3)

\* Any 267 Series using a 3 Arrangement requiring a SAE B Output must use the XQ or AK Output Option due to interference between the XK Flange and the Pressure Lube Fitting.

(3) = 3 Assembly Arrangement

(5) = 5 Assembly Arrangement

w = Wet Spline Option

**NOTE:** Always check current price book for available options



### 280 Series 3 & 5 Assembly Hydraulic

- 12V or 24V Hydraulic shift
- Continuous Torque up to 390 lbs-ft
- Wet Spline output options to eliminate spline fretting
- Industry first rotatable Wet Spline
- Smart Start available for Hi-Torque start-up
- Electronic Overspeed Control (EOC) protects driven equipment

Specifications Chart	Approximate Weight: 49 lbs. [22 kg]								
	280*B	280*C	280*D	280*G	280*K	280*M	280*P	280*S	280*T
<b>Continuous</b> Torque Rating lbs-ft [Nm]	300 [407]	390 [529]	390 [529]	360 [488]	340 [461]	318 [431]	290 [393]	265 [359]	240 [325]
HP Rating for <b>Continuous</b> Service									
At 500 RPM of Output Shaft HP [Kw]	29 [21]	37 [28]	37 [28]	34 [26]	32 [24]	30 [23]	28 [21]	25 [19]	23 [17]
At 1000 RPM of Output Shaft HP [Kw]	57 [43]	74 [56]	74 [56]	69 [51]	65 [48]	61 [45]	55 [41]	50 [38]	46 [34]



### 280 Series 8 Assembly Hydraulic

- 12V or 24V Hydraulic shift
- Continuous torque up to 390 lbs-ft
- Wet Spline output options to eliminate spline fretting
- Smart Start available for Hi-Torque start-up
- Electronic Overspeed Control (EOC) protects driven equipment

Specifications Chart	Approximate Weight: 49 lbs. [22 kg]								
	280*B	280*C	280*D	280*G	280*M	280*P	280*S	280*T	
<b>Continuous</b> Torque Rating lbs-ft [Nm]	300 [407]	390 [529]	390 [529]	360 [488]	318 [431]	290 [393]	265 [359]	240 [325]	
HP Rating for <b>Continuous</b> Service									
At 500 RPM of Output Shaft HP [Kw]	29 [21]	37 [28]	37 [28]	34 [26]	30 [23]	28 [21]	25 [19]	23 [17]	
At 1000 RPM of Output Shaft HP [Kw]	57 [43]	74 [56]	74 [56]	69 [51]	61 [45]	55 [41]	50 [38]	46 [34]	

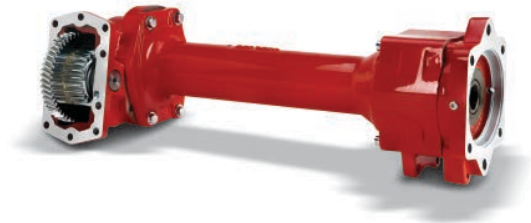


### 870 Series Hydraulic

- 12V or 24V Hydraulic shift
- Continuous Torque capacity up to 670 lbs-ft [908 Nm]
- Compact housing height reduces clearance issues
- Wet Spline output options to eliminate spline fretting
- Remote mount valve solves installation interference problems
- Electronic Overspeed Control (EOC) protects driven equipment
- Smart Start available for Hi-Torque start-up

Specifications Chart	Approximate Weight: 56 lbs. [25 kg]								
	870*A	870*B	870*C	870*D	870*E	870*F	870*G	870*H	870*J
<b>Continuous</b> Torque Rating lbs-ft [Nm]	670 [908]	630 [854]	590 [800]	550 [746]	485 [658]	430 [583]	380 [515]	355 [481]	335 [454]
HP Rating for <b>Continuous</b> Service									
At 500 RPM of Output Shaft HP [Kw]	64 [48]	60 [45]	56 [42]	52 [39]	46 [35]	41 [31]	36 [27]	34 [25]	32 [24]
At 1000 RPM of Output Shaft HP [Kw]	128 [95]	120 [90]	112 [84]	105 [78]	92 [69]	82 [61]	72 [54]	68 [51]	64 [48]

## 890 Series Hydraulic



- 12V or 24V Hydraulic shift
- Allison 3000/4000 Family transmissions
- Moves the PTO output flange to the rear of the transmission
- Continuous torque ratings up to 670 lbs-ft
- Installs in two pieces for simplified installation
- Solid 1-piece output shaft
- All pump outputs are Wet Spline to eliminate spline fretting

### Specifications Chart

Approximate Weight: 97 lbs. [44 kg]

	890*A	890*B	890*C	890*D	890*E	890*F	890*G	890*H
<b>Continuous</b> Torque Rating lbs-ft [Nm]	670 [908]	630 [854]	590 [800]	550 [746]	485 [658]	430 [583]	379 [513]	356 [482]
HP Rating for <b>Continuous</b> Service								
At 500 RPM of Output Shaft HP [Kw]	64 [48]	60 [45]	56 [42]	52 [39]	46 [35]	41 [31]	36 [27]	34 [25]
At 1000 RPM of Output Shaft HP [Kw]	128 [95]	120 [90]	112 [84]	105 [78]	92 [69]	82 [61]	72 [53]	68 [50]

## 892 Series Hydraulic



- 12V or 24V Hydraulic shift
- Allison 4700/4800 Series transmissions
- Moves the PTO output flange to the rear of the transmission
- Continuous torque ratings up to 670 lbs-ft
- Installs in two pieces for simplified installation
- Solid 1-piece output shaft
- All pump outputs are Wet Spline to eliminate spline fretting

### Specifications Chart

Approximate Weight: 97 lbs. [44 kg]

	892*A	892*B	892*C	892*D	892*E	892*F
<b>Continuous</b> Torque Rating lbs-ft [Nm]	670 [908]	630 [854]	590 [800]	550 [746]	485 [658]	430 [583]
HP Rating for <b>Continuous</b> Service						
At 500 RPM of Output Shaft (HP) [Kw]	64 [48]	60 [45]	56 [42]	52 [39]	46 [35]	41 [31]
At 1000 RPM of Output Shaft (HP) [Kw]	128 [95]	120 [90]	112 [84]	105 [78]	92 [69]	82 [61]

PTO Options Chart – PowerShift PTOs		280	870	890	892
<b>Lubrication</b>					
P	Pressure Lube	X	X		
R	Pressure Lube Valve Body Rotated 120°	X	X		
S	Pressure Lube Valve Body Rotated 240°	X	X		
V	Wet Spline Valve Body Rotated 120°	X	X		
Y	Wet Spline Valve Body Rotated 240°	X	X		
W	Wet Spline	X	X	X	X
<b>Shifting</b>					
B	12V Elec/Hyd	X	X	X	X
D	24V Elec/Hyd	X	X	X	X
E	12V Elec/Hyd w/o Installation Kit	X	X		
N	24V Elec/Hyd w/o Installation Kit	X	X		
K	12V Elec/Hyd Valve - Remote w/ EOC	X	X	X	X
L	24V Elec/Hyd Valve - Remote w/ EOC	X	X	X	X
G	12V Elec/Hyd - Remote w/o EOC	X	X	X	X
H	24V Elec/Hyd - Remote w/o EOC	X	X	X	X
S	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/ Neutral Spring Return	X			
T	Air Shift w/ PTO/Dump Pump Combo Valve w/o Kick Out w/ Neutral Spring Return	X			
<b>Output</b>					
CS	SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)			w (3)	w (3)
ZS	SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)			x	x
DA	SAE D 4-Bolt Flange, SAE D Shaft (1-3/4" - 13T)			w (5)	w (5)
AF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)			w (5)	w (5)
CF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)			w (3)	w (3)
AZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)			w (5)	w (5)
CZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)			w (3)	w (3)
XS	SAE C 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)			w (5)	w (5)
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x, w			
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x			
RF	Rotatable SAE B 2 or 4-Bolt Flange SAE BB Shaft (1" - 15T)	x	x, w		
RZ	Rotatable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x, w	x, w		
RS	Rotatable SAE C 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x, w	x, w		
RY	Rotatable ISO 7653 Pump Mount DIN 5462 Shaft	x	x, w		
AB	DIN 120 Flange	x	x	x	x
AC	DIN 100 Flange	x	x	x	x
BB	Shaft Brake - DIN 120 Flange		x		
BC	Shaft Brake - DIN 100 Flange		x		
BD	Shaft Brake - Rd Standard Shaft (1-1/4" - 5/16" Key)	x			
BV	Shaft Brake - 1410 Series Companion Flange	x	x		
SB	Smart Start - DIN 120	x	x		
SC	Smart Start - DIN 100	x	x		
SD	Smart Start - Rd Standard Shaft (1-1/4" - 5/16" Key)	x			
SV	Smart Start - 1410 Series Companion Flange	x	x		
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x			
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x			
XV	1410 Series Companion Flange	x	x	x (5)	x (5)
XY	ISO 7653 Pump Mount DIN 5462 Shaft			w (3)	w (3)

(3) = 3 Assembly Arrangement

(5) = 5 Assembly Arrangement

w = Wet Spline Option

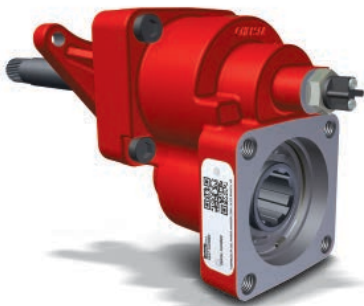
**NOTE:** Always check current price book for available options



### 511 Series

- Air Shift
- Continuous torque rating of 590 lbs-ft [800 Nm]
- Rear mount design requires less mounting space and simplifies installation
- No gear backlash to set, simplifies installation
- Wet Spline outputs available to eliminate spline fretting

Specifications Chart	Approximate Weight: 4.2 lbs. [1.9 kg]	
	511*R	
Intermittent & <b>Continuous</b> Torque Rating lbs-ft [Nm]	590 [800]	
HP Rating for Intermittent & <b>Continuous</b> Service		
At 500 RPM of Output Shaft HP [Kw]	56 [42]	
At 1000 RPM of Output Shaft HP [Kw]	112 [84]	



### 523 Series

- Air Shift
- Continuous torque rating of 258 lbs-ft [350 Nm]
- Rear mount design requires less mounting space and simplifies installation
- No gear backlash to set, simplifies installation
- Wet Spline outputs available to eliminate spline fretting

Specifications Chart	Approximate Weight: 12 lbs. [5.4 kg]	
	523*T	523*V
Intermittent & <b>Continuous</b> Torque Rating lbs-ft [Nm]	258 [350]	258 [350]
HP Rating for Intermittent & <b>Continuous</b> Service		
At 500 RPM of Output Shaft HP [Kw]	25 [18]	25 [18]
At 1000 RPM of Output Shaft HP [Kw]	49 [37]	49 [37]



### 541 Series

- Thrushaft® design for Eaton® Fuller® transmissions
- Three speed ratios available
- Two shift options available
- Direct mount pump flanges or driveshaft output options
- Continuous torque up to 400 lbs-ft

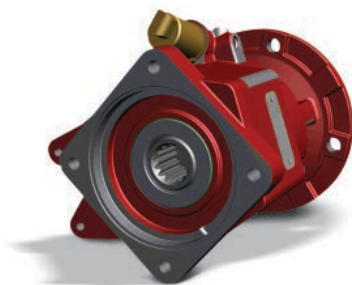
Specifications Chart	Approximate Weight: 12 lbs. [5.4 kg]		
	541*L	541*M	541*N
<b>Continuous</b> Torque Rating lbs-ft [Nm]	400 [542]	350 [475]	300 [407]
HP Rating for <b>Continuous</b> Duty			
At 500 RPM of Output Shaft HP [Kw]	38 [28]	33 [25]	29 [21]
At 1000 RPM of Output Shaft HP [Kw]	76 [57]	67 [50]	57 [43]

PTO Options Chart – Rear Mount PTOs		511	523	541
<b>Input Gear Designator</b>				
AA	ZF	X	X	
AB	Eaton & Iveco 2845.6	X	X	
AC	ZF-AS Tronic Meritor Freedomline™	X	X	
AG	Volvo V7		X	
AH	ZF	X	X	
AQ	ZF	X	X	
AR	Eaton	X	X	
AS	Volvo/Mack	X	X	
AU	Fuller			X
BD	Fuller			X
BJ	Fuller			X
LG	Eaton	X	X	
LQ	Eaton Procision		X	
<b>Lubrication</b>				
X	Non Wet Spline	X	X	X
W	Wet Spline	X	X	X
<b>Shifting</b>				
H	No Shift Kit	X	X	
P	12V Elec/Air Shift	X	X	
Q	24V Elec/Air Shift	X	X	
F	ZF-AS Tronic Meritor Freedomline™	X	X	
A	Air Shift	X	X	X
V	Volvo I-Shift/Mack mDrive Kit	X	X	
D	Eaton Procision		X	
Y	Lever Shift			X
<b>Output</b>				
XK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	X	W	X
XV	1410 Series Companion Flange	X	X	X
XY	ISO 7653 Pump Mount DIN 5462 Shaft	W	X, W	

w = Wet Spline Option

**NOTE:** Always check current price book for available options





## 590 Series Hydraulic

- 12V or 24V Hydraulic shift
- Reduced installation time over side mounted PTOs
- No backlash to set
- Excellent clearance for direct mounted pumps
- Heavy Duty torque rating of 650 lbs-ft
- PTO/Pump Support Bracket included
- Superior power to weight ratio

Specifications Chart	Approximate Weight: 50 lbs. [22.8 kg]
	<b>590*R</b>
* <b>Continuous</b> Torque Rating lbs-ft [Nm]	650 [881]
HP Rating for <b>Continuous</b> Service	
At 500 RPM of Output Shaft HP [Kw]	62 [46]
At 1000 RPM of Output Shaft HP [Kw]	124 [93]
*For the 590 Series, 650 lbs-ft Torque Rating is for both Intermittent and Continuous, all Output Options.	

PTO Options Chart – Rear Mount PTOs		590
<b>Inut Gear Designator</b>		
FJ	Allison TC10	x
<b>Lubrication</b>		
W	Wet Spline	x
<b>Shifting</b>		
B	12V Elec/Hyd	x
D	24V Elec/Hyd	x
<b>Output</b>		
CS	SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x
CK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
CF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x
CZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x
XV	1410 Series Companion Flange	x
XY	ISO 7653 Pump Mount DIN 5462 Shaft	x

w = Wet Spline Option

**NOTE:** Always check current price book for available options



### 249 Series – 6-Bolt

- 12V Hydraulic shift
- Ford TorqShift® 6R140 Transmissions
- Noise suppression system
- Single hose connection and integrated actuation valve
- Intermittent torque rating of 200 lbs-ft
- Pump flows up to 18 GPM at 1200 engine RPM
- PTO output speed of 124% of engine

Specifications Chart	Approximate Weight: 28 lbs. [12.7 kg]
	<b>249*M</b>
Intermittent Torque Rating (lbs-ft) [Nm]	200 [271]
HP Rating for Intermittent & Continuous Service	
At 1200 RPM of Output Shaft HP [Kw]	Up to 60 [45]



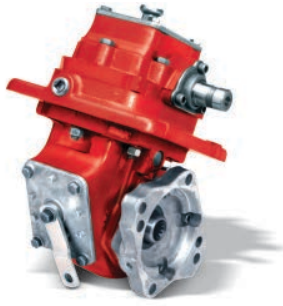
### 249V Series – 6-Bolt

- 12V Hydraulic shift
- Ford TorqShift® 6R140 Transmissions
- Noise suppression system
- Integral Denison Vane Pump with Pump flows up to 31 GPM at 1200 engine RPM
- Single hose connection and integrated actuation valve
- Intermittent torque rating of 200 lbs-ft

Specifications Chart	Approximate Weight: 54 lbs. [24.5 kg]
	<b>249V*M</b>
Intermittent Torque Rating (lbs-ft) [Nm]	200 [271]
HP Rating for Intermittent & Continuous Service	
At 1200 RPM of Output Shaft HP [Kw]	Up to 60 [45]

PTO Options Chart – PowerShift PTOs		249	249V
<b>Lubrication</b>			
X	No Pressure Lube	x	x
<b>Shifting</b>			
B	12V Elec/Hyd	x	x
K	12V Elec/Hyd w/ Electronic Overspeed Control (EOC)	x	x
E	Less Wiring Harness	x	x
<b>Output</b>			
AD	SAE A 2-Bolt Flange, SAE AH Shaft (3/4" - 11T)	x	
SD	Smart Start - Rd Standard Shaft (1-1/4" - 5/16" Key)	x	
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x	
XP	Special SAE A Pilot 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	
08	Hyd. Pump 12.0 GPM @ 1200 Eng. RPM 4 x 2 only	x	
09	Hyd. Pump 14.0 GPM @ 1200 Eng. RPM 4 x 2 only	x	
11	Hyd. Pump 16.0 GPM @ 1200 Eng. RPM 4 x 2 only	x	
15	Hyd. Pump 18.9 GPM @ 1200 Eng. RPM 4 x 2 only	x	
16	Hyd. Pump 2.4 GPM @ 1200 Eng. RPM	x	
26	Hyd. Pump 3.9 GPM @ 1200 Eng. RPM	x	
32	Hyd. Pump 4.7 GPM @ 1200 Eng. RPM	x	
37	Hyd. Pump 5.5 GPM @ 1200 Eng. RPM	x	
42	Hyd. Pump 6.3 GPM @ 1200 Eng. RPM	x	
55	Hyd. Pump 8.2 GPM @ 1200 Eng. RPM	x	
61	Hyd. Pump 9.0 GPM @ 1200 Eng. RPM	x	
71	Hyd. Pump 10.6 GPM @ 1200 Eng. RPM	x	
82	Hyd. Pump 12.2 GPM @ 1200 Eng. RPM	x	
87	Hyd. Pump 12.9 GPM @ 1200 Eng. RPM	x	
V08	08 Cartridge @ 1.61 in <sup>3</sup> /rev		x
V10	10 Cartridge @ 2.08 in <sup>3</sup> /rev		x
V12	12 Cartridge @ 2.26 in <sup>3</sup> /rev		x
V14	14 Cartridge @ 2.81 in <sup>3</sup> /rev		x
V17	17 Cartridge @ 3.56 in <sup>3</sup> /rev		x
V20	20 Cartridge @ 3.89 in <sup>3</sup> /rev		x
V22	22 Cartridge @ 4.29 in <sup>3</sup> /rev		x
V25	25 Cartridge @ 4.84 in <sup>3</sup> /rev		x
VIT	Less Cartridge		x

**NOTE:** Always check current price book for available options



**2442 Series**

- The economical 2442 Series is a manual shift PTO
- Operator must stop the engine before shifting
- Available in seven different speed ratios ranging from 39% to 123% of engine speed
- Eleven shift options available; twenty-five output options

Specifications Chart	Approximate Weight: 69 lbs. [31 kg]						
	2442*F	2442*L	2442*Q	2442*S	2442*U	2442*W	2442*X
Percent of Engine Speed	39%	50%	54%	74%	89%	104%	123%
Intermittent Torque Rating lbs-ft [Nm]	250 [339]	250 [339]	225 [305]	170 [230]	140 [190]	120 [163]	100 [136]
HP Rating for Intermittent Service							
At 500 RPM of Output Shaft HP [Kw]	24 [18]	24 [18]	21 [16]	16 [12]	13 [10]	11 [9]	10 [7]
At 1000 RPM of Output Shaft HP [Kw]	48 [36]	48 [36]	43 [32]	32 [24]	27 [20]	23 [17]	19 [14]

PTO Options Chart – Crank Shaft PTO		2442
<b>Shifting</b>		
H	No Shift Assembly	x
P	12V Elec/Air	x
C	Heavy Duty Bracket Less Cable	x
M	Constant Mesh	x
A	Air Shift	x
S	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/ Neutral Spring Return	x
T	Air Shift w/ PTO/Dump Pump Combo Valve w/o Kick Out w/ Neutral Spring Return	x
U	Air Shift w/ PTO/Dump Pump Combo Valve w/ Kick Out w/o Neutral Spring Return	x
V	Air Shift Less Installation Kit	x
W	Cable Shift	x
X	Less Cable & Knob	x
<b>Output</b>		
AK	SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
SQ	SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
XE	SAE A 2 or 4-Bolt Flange, SAE A Shaft (5/8" - 9T)	x
XK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
XQ**	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
AF	SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x
AZ	SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x
GA	Greaseable SAE B 2-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x
GB	Greaseable SAE B 4-Bolt Rotatable Flange, SAE B Shaft (7/8" - 13T)	x
GK	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
GQ**	Greaseable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
GF	Greaseable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x
GR	Greaseable Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x
RC	Rotatable SAE A 2-Bolt Flange, SAE A Shaft (5/8" - 9T)	x
RD	Rotatable SAE A 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
RA	Rotatable SAE B 2-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
RF	Rotatable SAE B 2-Bolt Flange, SAE BB Shaft (1" - 15T)	x
RB	Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
RE	Rotatable SAE B 4-Bolt Flange, SAE BB Shaft (1" - 15T)	x
RK	Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x
RY	Rotatable ISO 7653 Pump Mount DIN 5462 Shaft	x
XD	Rd Standard Shaft (1-1/4" - 5/16" Key)	x
XR	Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)	x
XX***	1-1/4" Tapered Output Shaft w/ Keyway	x
XY	ISO 7653 Pump Mount DIN 5462 Shaft	x

\*\* XQ/GQ same as XK/GK except flange rotated 90°

\*\*\* Order companion (379824) separately

**NOTE:** Always check current price book for available options

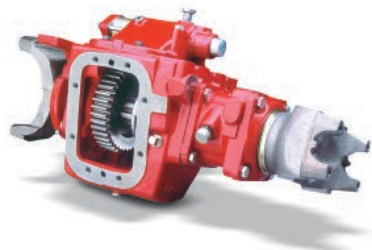




### 901 Series

- Used on medium duty trucks that have applications requiring the torque capacity of an 8-Bolt PTO
- Provides 100% of input speed
- Mount in any orientation with the PTO shaft going to the front or rear of the truck
- Air and lever shift available, along with three direct mount flanges

Specifications Chart	Approximate Weight: 185 lbs. [84 kg]	
	901	
Intermittent Torque Rating lbs-ft [Nm]	500 [678]	
HP Rating for Intermittent Service		
At 500 RPM of Output Shaft HP [Kw]	48 [36]	
At 1000 RPM of Output Shaft HP [Kw]	95 [71]	



### 912 Series

- Three 8-Bolt openings available
- Wide variety of 6-Bolt, 8-Bolt, PowerShift, and Reversible PTOs fit the 912 Series
- Air and lever shift available

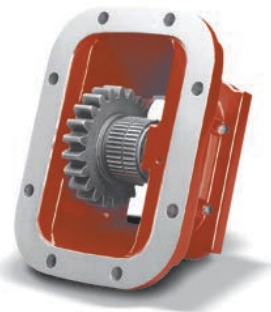
Specifications Chart	Approximate Weight: 130 lbs. [59 kg]	
	912	
<b>w/ Diesel Engine</b>	Max Thru Torque Capacity lbs-ft [Nm]	
Automatic Transmission	13,000 [17,625]	
Manual Transmission	12,000 [16,270]	
<b>w/ Gas Engine</b>		
Automatic Transmission	16,000 [21,693]	
Manual Transmission	15,000 [20,337]	

PTO Options Chart – Split Shaft PTOs		901	912
<b>Shifting</b>			
A	Air Shift	x	x
Y	Lever Shift	x	x
<b>Input-Output Option</b>			
C	1-3/4" - 10T Spline Input-Output	x	
G	2-3/4" w/ 1710 1/2 Rd. Yoke		x
H	2-3/4" w/ 1810 1/2 Rd. Yoke		x
J	2-3/4" Input-Output w/o Yoke		x
M	2-3/4" w/ 1610 Companion Flange		x
P	SPL-170 Yoke		x
S	SPL-250 Yoke		x
<b>PTO Output Option</b>			
XU	SAE C 2-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x	
XS	SAE C 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)	x	
XK	SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)	x	
XV	1410 Series Companion Flange	x	
XX	8-Bolt Apertures Available		x



### 626 Series

- 6-Bolt Adapter for a 6-Bolt Transmission Opening
- Moves the PTO straight out from the transmission
- Uses the same input gears as the 442 and 489 Series
- Uses the same mounting hardware and spacers used to mount a 442 Series to a specific application
- Does not change PTO ratio



### 628 Series

- 6-Bolt Adapter for an 8-Bolt Transmission Opening
- Moves the PTO straight out from the transmission
- Uses the same input gears as the 442 and 489 Series
- Uses the same mounting hardware and spacers used to mount a 489 Series to a specific application
- Does not change PTO ratio



### 630 Series

- 6-Bolt Adapter for a 6-Bolt Transmission Opening
- Moves the PTO down at a 30° angle, helping to eliminate interference problems
- Uses the same input gears as the 442 and 489 Series
- Does not change PTO ratio



### 645 Series

- 6-Bolt Adapter for a 6-Bolt Transmission Opening
- Moves the PTO down at a 45° angle, helping to eliminate interference problems
- Uses the same input gears as the 442 and 489 Series
- Does not change PTO ratio

### 626 Gear Chart

Adapter Input Gear				Mounting Information PTO to Adapter		PTO Gear (Packaged Loose w/Adapter)			
Model No.	Part No.	Helix Angle	No. Teeth	Spacer Designator	Stud Kit	PTO Pitch	Part No.	Helix Angle	No. Teeth
626*AB	5-P-1001	Spur	19	7-A-140	7170-3X	—**AB	5-P-1001	Spur	19
626*AH	5-P-1004	Spur	22	7-A-140	7170-3X	—**AH	5-P-1004	Spur	22
626*AR	5-P-1008	Left Hand	21	7-A-187	7170-3X	—**GY	5-P-1184	Right Hand	21
626*BG	5-P-1015	Left Hand	23	7-A-140	7170-3X	—**HB	5-P-1187	Right Hand	23
626*BQ	5-P-1023	Left Hand	25	7-A-200	7170-4X	—**BP	5-P-1022	Right Hand	26
626*DA	5-P-1037	Spur	23	—	—	—**DA	5-P-1037	Spur	23
626*DU	5-P-1050	Left Hand	28	7-A-240	7170-4X	—**HH	5-P-1193	Right Hand	28
626*ES	5-P-1059	Left Hand	22	7-A-062	—	—**HL	5-P-1196	Right Hand	22
626*EV	5-P-1060	Spur	40	7-A-300	7170-4X	—**EV	5-P-1190	Right Hand	40
626*EW	5-P-1061	Left Hand	20	7-A-125	7170-3X	—**HM	5-P-1197	Right Hand	20
626*FN	5-P-1070	Left Hand	26	7-A-300	7170-4X	—**HR	5-P-1201	Right Hand	26
626*HY	5-P-1237	Left Hand	26	7-A-125	328170-94X	—**JB	5-P-1244	Right Hand	26
626*IT	KIT ADAPTER	—	—	—	—	—	—	—	—
626*JK	5-P-1261	Left Hand	24	7-A-187	7170-3X	—**JL	5-P-1262	Right Hand	24
626*JU	5-P-1316	Left Hand	25	7-A-200	7170-4X	—**KA	5-P-1318	Right Hand	25
626*JW	5-P-1319	Left Hand	23	7-A-093	7170-3X	—**KB	5-P-1321	Right Hand	23

### 628 Gear Chart

Adapter Input Gear				Mounting Information PTO to Adapter		PTO Gear (Packaged Loose w/Adapter)			
Model No.	Part No.	Helix Angle	No. Teeth	Spacer Designator	Stud Kit	PTO Pitch	Part No.	Helix Angle	No. Teeth
628*AB	5-P-1001	Spur	19	7-A-140	7170-3X	—**AB	5-P-1001	Spur	19
628*AH	5-P-1004	Spur	22	7-A-165	7170-3X	—**AH	5-P-1004	Spur	22
628*AR	5-P-1008	Left Hand	21	7-A-200	7170-3X	—**GY	5-P-1184	Right Hand	21
628*BG	5-P-1015	Left Hand	23	7-A-165	7170-3X	—**HB	5-P-1187	Right Hand	23
628*DA	5-P-1037	Spur	23	—	328170-76X	—**DA	5-P-1037	Spur	23
628*DU	5-P-1050	Left Hand	28	7-A-270	7170-5X	—**HH	5-P-1193	Right Hand	28
628*EV	5-P-1060	Spur	40	7-A-300	7170-5X	—**EV	5-P-1060	Spur	40
628*IT	KIT ADAPTER	—	—	—	—	—	—	—	—

## 630 Gear Chart

Adapter Input Gear				Mounting Information PTO to Adapter		PTO Gear (Packaged Loose w/Adapter)			
Model No.	Part No.	Helix Angle	No. Teeth	Spacer Designator	Stud Kit	PTO Pitch	Part No.	Helix Angle	No. Teeth
630*AB	5-P-1001	Spur	19	7-A-140	7170-3X	—**AB	5-P-1001	Spur	19
630*AH	5-P-1004	Spur	22	7-A-140	7170-3X	—**AH	5-P-1004	Spur	22
630*AR	5-P-1008	Left Hand	21	7-A-187	7170-3X	—**GY	5-P-1184	Right Hand	21
630*BG	5-P-1015	Left Hand	23	7-A-140	7170-3X	—**HB	5-P-1187	Right Hand	23
630*BQ	5-P-1023	Left Hand	25	7-A-200	7170-4X	—**BP	5-P-1022	Right Hand	26
630*DA	5-P-1037	Spur	23	—	—	—**DA	5-P-1037	Spur	23
630*DU	5-P-1050	Left Hand	28	7-A-240	7170-4X	—**HH	5-P-1193	Right Hand	28
630*ES	5-P-1059	Left Hand	22	7-A-062	—	—**HL	5-P-1196	Right Hand	22
630*EV	5-P-1060	Spur	40	7-A-300	7170-4X	—**EV	5-P-1060	Spur	40
630*EW	5-P-1061	Left Hand	20	7-A-125	7170-3X	—**HM	5-P-1197	Right Hand	20
630*FN	5-P-1070	Left Hand	26	7-A-300	7170-4X	—**HR	5-P-1201	Right Hand	26
630*HY	5-P-1237	Left Hand	26	7-A-125	7170-1X	—**JB	5-P-1244	Right Hand	26
630*IT	KIT ADAPTER	—	—	—	—	—	—	—	—
630*JK	5-P-1261	Left Hand	24	7-A-187	7170-3X	—**JL	5-P-1262	Right Hand	24
630*JU	5-P-1316	Left Hand	25	7-A-200	7170-4X	—**KA	5-P-1318	Right Hand	25
630*JW	5-P-1319	Left Hand	23	7-A-093	7170-3X	—**KB	5-P-1321	Right Hand	23

## 645 Gear Chart

Adapter Input Gear				Mounting Information PTO to Adapter		PTO Gear (Packaged Loose w/Adapter)			
Model No.	Part No.	Helix Angle	No. Teeth	Spacer Designator	Stud Kit	PTO Pitch	Part No.	Helix Angle	No. Teeth
645*AB	5-P-1001	Spur	19	7-A-140	7170-3X	—**AB	5-P-1001	Spur	19
645*AH	5-P-1004	Spur	22	7-A-140	7170-3X	—**AH	5-P-1004	Spur	22
645*AR	5-P-1008	Left Hand	21	7-A-187	7170-3X	—**GY	5-P-1184	Right Hand	21
645*BQ	5-P-1023	Left Hand	25	7-A-200	7170-4X	—**BP	5-P-1022	Right Hand	26
645*DA	5-P-1037	Spur	23	—	—	—**DA	5-P-1037	Spur	23
645*DU	5-P-1050	Left Hand	28	7-A-240	7170-4X	—**HH	5-P-1193	Right Hand	28
645*ES	5-P-1059	Left Hand	22	7-A-062	—	—**HL	5-P-1196	Right Hand	22
645*EV	5-P-1060	Spur	40	7-A-300	7170-4X	—**EV	5-P-1060	Spur	40
645*EW	5-P-1061	Left Hand	20	7-A-125	7170-3X	—**HM	5-P-1197	Right Hand	20
645*FN	5-P-1070	Left Hand	26	7-A-300	7170-4X	—**HR	5-P-1201	Right Hand	26
645*HY	5-P-1237	Left Hand	26	7-A-125	328170-94X	—**HY	5-P-1244	Right Hand	26
645*HV	5-p-1300	Spur	24	7-A-140	328170-94X	—**HV	5-P-1300	Spur	24
645*IT	KIT ADAPTER	—	—	—	—	—	—	—	—
645*JK	5-P-1261	Left Hand	24	7-A-187	7170-3X	—**JL	5-P-1262	Right Hand	24
645*JU	5-P-1316	Left Hand	25	7-A-200	7170-4X	—**KA	5-P-1318	Right Hand	25
645*JW	5-P-1319	Left Hand	23	7-A-093	7170-3X	—**KB	5-P-1321	Right Hand	23



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**5. Claims; Commencement of Actions.** Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 30 days after delivery. Buyer shall notify Seller of any alleged breach of warranty within 30 days after the date the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for an amount due on any invoice) must be commenced within 12 months from the date of the breach without regard to the date breach is discovered.

**6. LIMITATION OF LIABILITY. UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER’S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER’S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.**

**7. User Responsibility.** The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.

**8. Loss to Buyer’s Property.** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer’s property, will be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller’s possession or control.

**9. Special Tooling.** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller’s property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

**10. Buyer’s Obligation; Rights of Seller.** To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer’s behalf all documents Seller deems necessary to perfect its security interest.

**11. Improper use and indemnity.** Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer’s employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller’s use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer’s failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

**12. Cancellations and Changes.** Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller’s written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.

**13. Limitation on Assignment.** Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

**14. Force Majeure.** Seller does not assume the risk and shall not be liable for delay or failure to perform any of Seller’s obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter “Events of Force Majeure”). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller’s reasonable control.

**15. Waiver and Severability.** Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller’s right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

**16. Termination.** Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Seller may immediately terminate this agreement, in writing, if Buyer: (a) commits a breach of any provision of this agreement (b) appointments a trustee, receiver or custodian for all or any part of Buyer’s property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) dissolves or liquidates all or a majority of its assets.

**17. Governing Law.** This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.

**18. Indemnity for Infringement of Intellectual Property Rights.** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (“Intellectual Property Rights”). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller’s obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller’s sole and exclusive liability and Buyer’s sole and exclusive remedy for infringement of Intellectual Property Rights.

**19. Entire Agreement.** This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.

**20. Compliance with Law, U. K. Bribery Act and U.S. Foreign Corrupt Practices Act.** Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the country or countries of the Territory in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act (“FCPA”) and the U.S. Anti-Kickback Act (the “Anti-Kickback Act”), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer shall not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase products or otherwise benefit the business of Seller.

07/14



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