

# Chelsea® 280 Series

PowerShift Hydraulic 10-Bolt



## Overview:

The 280 Series is a PTO design utilizing the best of our technology and innovations from our current Hot Shift PTOs. The 280 Series combines our 277 and 278 Series into one model of PTO. It features a single continuous duty torque rating - No more intermittent rating. Pump clearance issues have been improved with rotatable cast iron flanges, and the Wet Spline Lubrication option provide 7 to 10 times greater shaft life. A broader coverage of speed ratios expanded from 5 ratios to 9 ratios and includes lower and higher speeds that were never available in the past. The standard output shaft features a new positive stop for driveline outputs that eliminates oil seal damage by the driveline coupling. Three positions for the integrated solenoid valve, plus a remote mount option provides maximum clearance under the truck. The pressure lube hose will be included with the 280 Series. No need to order separately. Versatility, power, ease of maintenance and installation make the 280 Series the best choice for fire & rescue, vacuum, truck cranes, and refuse truck requirements.



- Fire & Rescue
- Pumper Cleaner
- Truck Cranes
- Refuse

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## Product Features and Benefits:

- **Torque** – Features a single continuous duty torque rating.
- **Power** – Best in class torque ratings.
- **Clearance** – Interference issues have been reduced with rotatable cast iron flanges.
- **Positive Stop** – Driveline outputs; eliminates oil seal damage from coupling.
- **Protection** – Wet Spline Lubrication option provide 7 to 10 times greater shaft life.
- **Speeds** – Broader coverage of speed ratios expanded from 5 ratios to 9 ratios.
- **Outputs** – Lower and higher speeds now available.
- **Hose Included** – No need to order separately.
- **Smart Start** – Option available to reduce shock load at start-up for certain applications.



ENGINEERING YOUR SUCCESS.

# 280 SERIES POWER TAKE-OFF MODEL NUMBER DESIGNATOR & SPECIFICATIONS

**280 G B FJ P - B 5 XD**

**Basic Model**  
280

**Mounting Option**  
G = Metric Studs

**Gear Ratio**

<b>3 &amp; 5 Arr.</b>	<b>8 Arr.</b>
B = 22/50	B = 22/53
C = 25/47	C = 25/50
D = 28/44	D = 28/47
G = 31/41	G = 31/44
K = 33/39	K = N/A
M = 35/37	M = 35/40
P = 37/35	P = 37/38
S = 39/33	S = 39/36
T = 41/31	T = 42/33

**Input Option**  
FJ = Allison  
KV = CAT  
**NOTE:** For more details, see Application Catalog.  
(Transmission Model Number required.)

**Lube Option**

**Pressure**  
P = Pressure Lube  
<sup>45</sup>R = Valve Cap Rotated 120°  
S = Valve Cap Rotated 240°

**Wet Spline**  
W = Wet Spline  
<sup>45</sup>V = Valve Cap Rotated 120° w/ Wet Spline  
Y = Valve Cap Rotated 240° w/ Wet Spline

<sup>15</sup> The remote mount solenoid option can not utilize the EOC option.  
<sup>21</sup> Includes Installation Kit, Console Sold Separately.  
<sup>45</sup> Available on Shift Option B, D, K, L, M, N, S & T.  
<sup>46</sup> Available with Rotated Valve.  
<sup>47</sup> Available with Wet Spline.

**Output Option**

**Driveline Output**

XD = Rd Standard Shaft (1-1/4" - 5/16" Key)  
XV = 1410 Series Companion Flange  
BV = Drag Brake - 1410 Series Companion Flange  
BD = Drag Brake - Rd Standard Shaft (1-1/4" - 5/16" Key)  
SD = Smart Start - Rd Standard Shaft (1-1/4" - 5/16" Key)  
SV = Smart Start - 1410 Series Companion Flange  
AB = DIN 120 Flange  
AC = DIN 100 Flange  
SB = Smart Start - DIN 120 Flange  
SC = Smart Start - DIN 100 Flange

**Pump Mount**

RB = Rotatable SAE B 4-Bolt Flange, SAE B Shaft (7/8" - 13T)  
<sup>47</sup> RK = Rotatable SAE B 2 or 4-Bolt Flange, SAE B Shaft (7/8" - 13T)  
<sup>47</sup> RF = Rotatable SAE B 2 or 4-Bolt Flange, SAE BB Shaft (1" - 15T)  
<sup>47</sup> RZ = Rotatable SAE B 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)  
<sup>47</sup> RS = Rotatable SAE C 2 or 4-Bolt Flange, SAE C Shaft (1-1/4" - 14T)  
<sup>47</sup> RY = Rotatable ISO 7653 Pump Mount DIN 5462 Shaft  
XR = Chelsea Special (Cloverleaf), SAE B Shaft (7/8" - 13T)

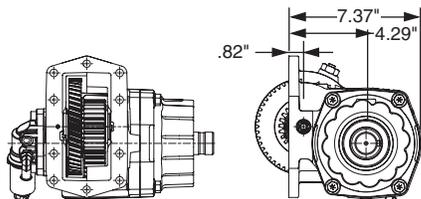
**Assembly Arrangement**

3 = Right side - bulge down  
Left side - bulge up  
5 = Left side - bulge down  
Right side - bulge up  
8 = Both sides - no offset

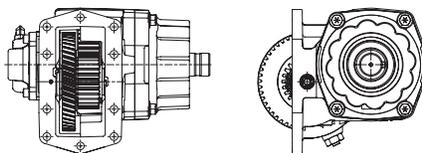
**Shift Option**

**Hydraulic**

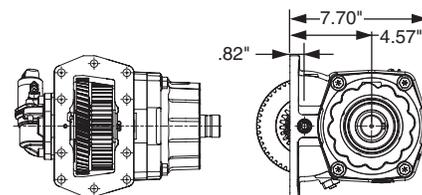
<sup>46</sup>B = 12V Elec/Hyd  
<sup>46</sup>D = 24V Elec/Hyd  
<sup>46</sup>E = 12V Elec/Hyd w/o Installation Kit  
<sup>46</sup>N = 24V Elec/Hyd w/o Installation Kit  
<sup>46</sup>K = 12V Elec/Hyd w/ EOC  
<sup>46</sup>L = 24V Elec/Hyd w/ EOC  
<sup>15</sup>G = 12V Elec/Hyd Remote Valve w/o EOC  
<sup>15</sup>H = 24V Elec/Hyd Remote Valve w/o EOC  
<sup>21</sup> <sup>46</sup>S = 12V Elec/Hyd w/ Air Shift PTO/Dump Pump Combo Valve, w/ Kick Out, w/ Neutral Spring Return  
<sup>21</sup> <sup>46</sup>T = 12V Elec/Hyd w/ Air Shift PTO/Dump Pump Combo Valve, w/o Kick Out, w/ Neutral Spring Return



Assembly 3



Assembly 5



Assembly 8

## 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
Continuous 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 Continuous Duty									
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]