

Chelsea® 281 Series

Hydraulic PowerShift 10-Bolt PTO for
Allison 3000/4000 Family Transmissions



Overview:

The 281 Series PTO is evidence that Parker Chelsea is constantly investing in developing the world's greatest solutions to solve industry challenges. Chelsea's 281 Series features a ductile iron bearing cap which is 117% stronger than its predecessor. It features an o-ring sealing configuration between the housing and bearing cap to improve clamp load. The thickness of the steel discs within the clutch pack have also been increased by 80%. All of these improvements are focused on reducing the damaging vibrational effects caused by today's and future engine designs.

Over the years, Parker Chelsea has cultivated this PTO design into what it is today. With its improved durability, versatility, power, and ease of maintenance & installation, the 281 Series cannot be beat.

Applications:

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

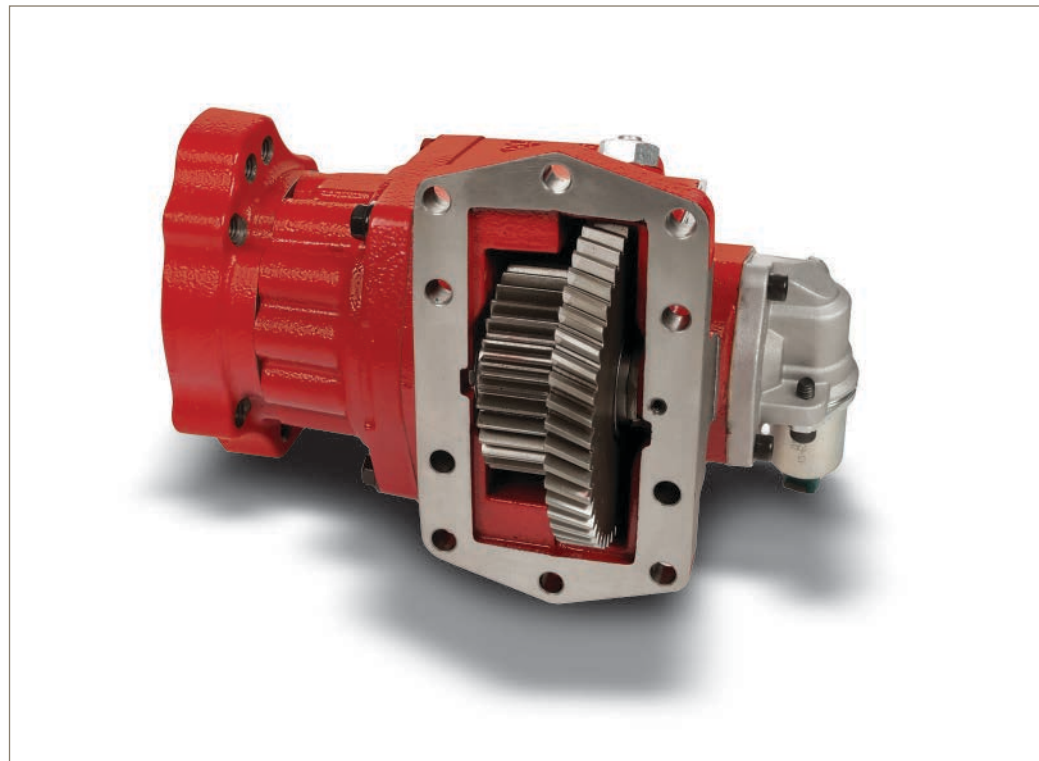
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Product Features and Benefits:

- Ductile Iron Bearing Cap – 117% stronger than gray iron.
- Improved Seal – O-ring sealing configuration to reduce vibrational effects and improve clamp load.
- Enhanced Clutch Pack – 80% thicker steel disks in the clutch pack to resist premature tooth wear.
- Torque – Single, continuous duty torque rating.
- Clearance – Rotatable cast iron flanges to improve pump clearance.
- Positive Stop for Driveline Outputs – Eliminates oil seal damage from coupling.
- Wet Spline Lubrication Option – Provides 7 to 10 times greater shaft life.
- Speeds – Nine speed ratios including low and high-speeds.
- SmartStart – Reduces shock load at start-up for certain applications.
- Insurance – Electronic Overspeed Control (EOC) protects driven equipment.

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281 SERIES POWER TAKE-OFF MODEL NUMBER DESIGNATOR & SPECIFICATIONS

2 8 1 G B FJ P - B 5 X D

Basic Model
281

Mounting Option

G = Standard 10-Bolt Mount
w/ Metric Studs

Gear Ratio

3 & 5 Arr.

B = 22/50
C = 25/47
D = 28/44
G = 31/41
K = 33/39
M = 35/37
P = 37/35
S = 39/33
T = 41/31

8 Arr.

B = 22/53
C = 25/50
D = 28/47
G = 31/44
M = 35/40
P = 37/38
S = 39/36
T = 42/33

Input Option

FJ = Allison
KV = Caterpillar

NOTE: For more details, see Application Catalog
(Transmission Model Number required)

Lube Option

Pressure

P = Pressure Lube
R = Valve Cap Rotated 120°
S = Valve Cap Rotated 240°

Wet Spline

⁵**W** = Wet Spline
^{5, 45}**V** = Valve Cap Rotated 120° w/ Wet Spline
⁵**Y** = Valve Cap Rotated 240° w/ Wet Spline

Output Option

Driveline Output

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

Pump Mount

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

Assembly Arrangement

3 = Gear forward, Shaft rear, Left Side bulge up,
Right Side bulge down
5 = Gear forward, Shaft rear, Right Side bulge up,
Left Side bulge down
8 = Gear forward, Shaft rear, both sides bulge straight up

Shift Option

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

⁵ Automatically Pressure Lubed.

¹⁵ The remote mount solenoid option can not utilize the EOC option.

²¹ Includes Installation Kit, Console Sold Separately.

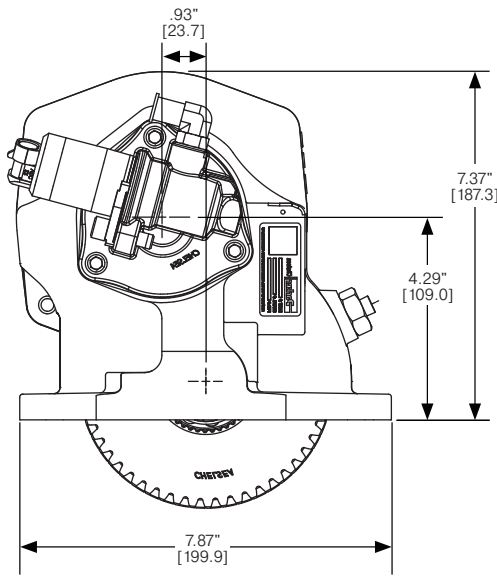
⁴⁵ Available on Shift Option B, D, K, L, E, N, S & T.

⁴⁶ Available with Rotated Valve.

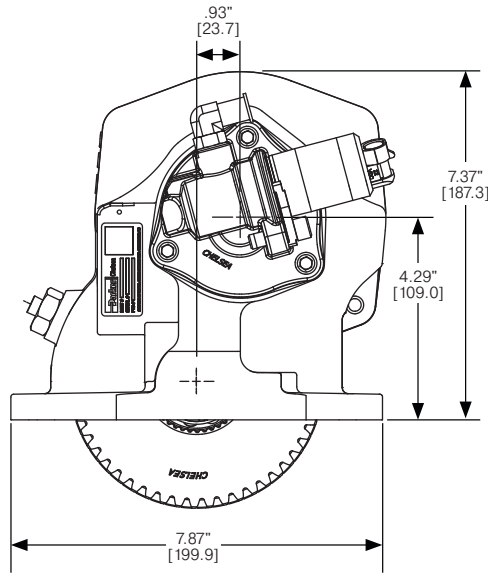
⁴⁷ Available with Wet Spline.

281 SERIES POWER TAKE-OFF SPECIFICATIONS AND TECHNICAL DATA

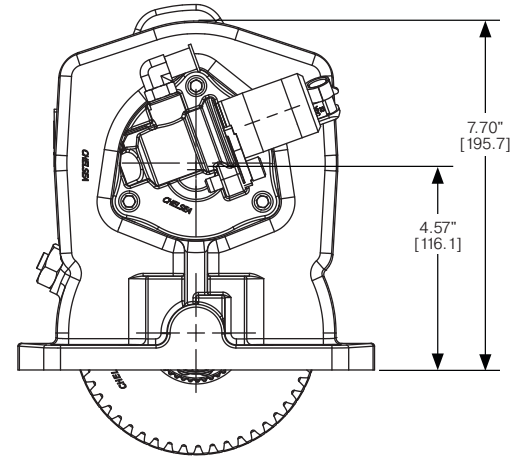
Dimensions – For PTO output information see application catalog



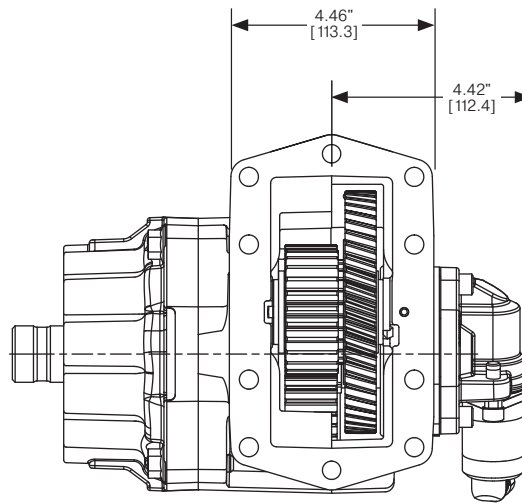
Assembly 3



Assembly 5



Assembly 8



Specifications Chart

Approximate Weight: 50 lbs. [22.7 kg]

	281*B	281*C	281*D	281*G	281*K	281*M	281*P	281*S	281*T
Continuous Torque Rating (lb-ft) [N-m]	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 [22]	37 [28]	37 [28]	34 [25]	32 [24]	30 [22]	28 [21]	25 [19]	23 [17]
At 1000 RPM of Output Shaft (HP) [kW]	57 [43]	74 [55]	74 [55]	69 [51]	65 [48]	61 [45]	55 [41]	50 [37]	46 [34]

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