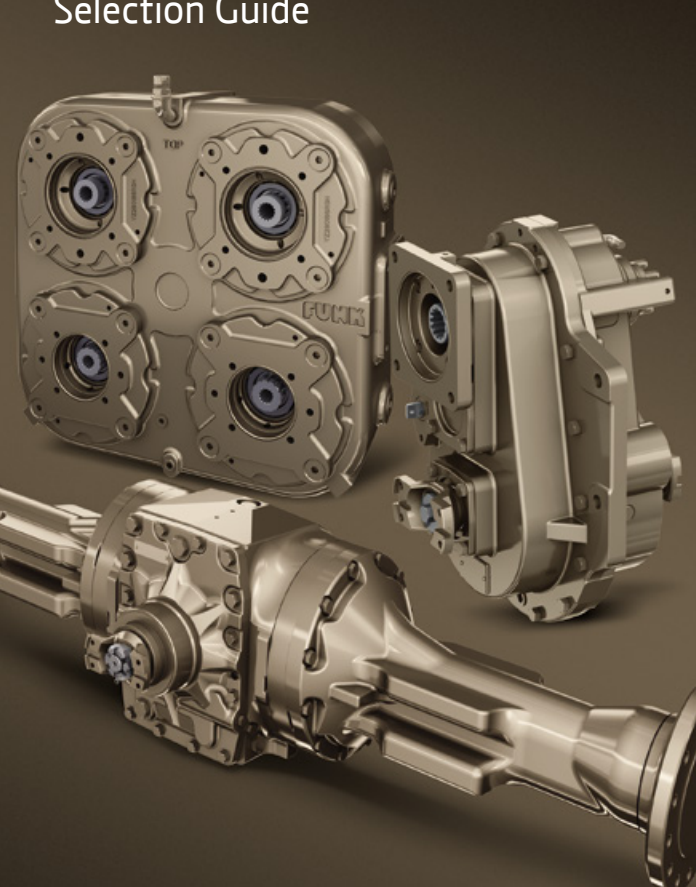
JOHN DEERE

Funk™ Drivetrain Components

Selection Guide



Funk™ Drivetrain Components

Selection Guide

Funk™ drivetrain components

Backed by a reputation of reliability and customer service, John Deere axles and Funk transmissions, pump drives, and planetary drives are designed to operate in a wide range of rugged off-highway conditions.

John Deere delivers an integrated drivetrain system that boosts performance, maximizes uptime, and lowers cost of operation.

Your equipment deserves nothing less

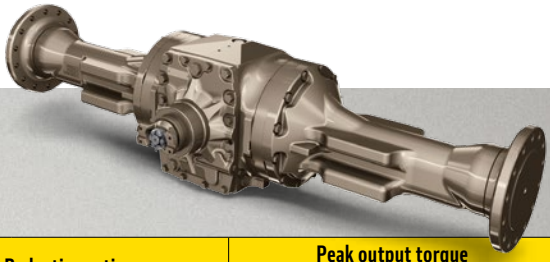
Staying true to our proven heritage, John Deere drivetrain components incorporate over 150 years of off-highway vehicle experience.

Our continued promise is to provide you with an array of robust designs to meet your demanding OEM needs. When you choose John Deere drivetrain components, you know you are getting the best combination of performance, reliability, and durability.

Inboard planetary axles

Model	Peak vertical load	Track width flange to flange
Series 1200	240,000 N (54,000 lb)	1,300 mm (51.18 in) 1,700 mm (66.93 in) 1,953 mm (76.89 in)
Series 1400	300,000 N (67,000 lb)	1,700 mm (66.93 in) 1,953 mm (76.89 in)
Series 1400 SWEDA™	300,000 N (67,000 lb)	2,540 mm (100.00 in)
Series 1600	395,000 N (88,000 lb)	2,094 mm (82.40 in)

Specifications are subject to change.

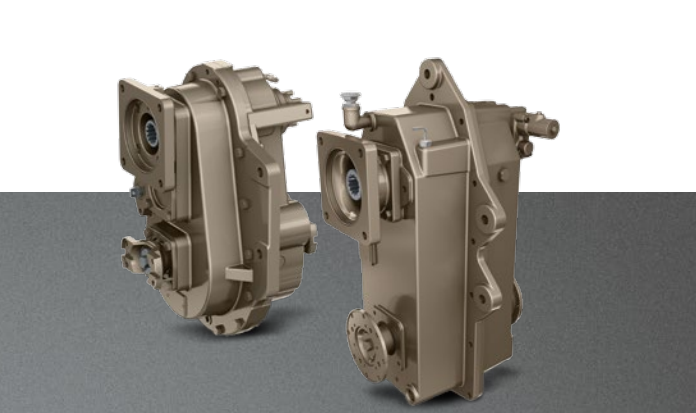


Reduction ratios		Peak output torque per axle shaft
15	Min. 4.333:1 Max. 33.429:1	35,000 Nm (310,000 in-lb)
12	Min. 16.208:1 Max. 32.914:1	47,400 Nm (420,000 in-lb)
3	Min. 27.927:1 Max. 30.578:1	47,400 Nm (420,000 in-lb)
1	22.5:1	67,700 Nm (600,000 in-lb)

HMD transmissions

Model	Speeds	Max input power	Max input no load speed	Max input torque
18000	2	149 kW (200 hp)	4000 rpm	949 Nm (700 lb-ft)
12700	4	104 kW (140 hp)	2500 rpm	407 Nm (300 lb-ft)
33000	4	101 kW (135 hp)	2400 rpm	407 Nm (300 lb-ft)
23000	3, 4	75 kW (100 hp)	3000 rpm	271 Nm (200 lb-ft)
HS17000	2	93 kW (125 hp)	4300 rpm	1,017 Nm (750 lb-ft)

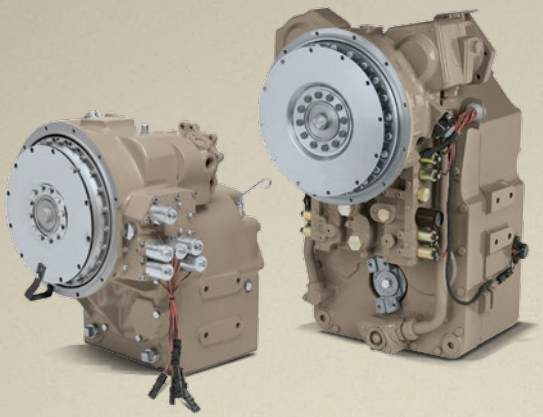
Specifications are subject to change.



Motor adapters	Output fittings	Parking brake
SAE C, D	5C, 6C, 7C yokes or companion flange	Disc
SAE C, D	Adapts to Spicer 1500 and 1600 series, and Mechanics 7C U-joint flange yoke	Drum
SAE C, D	Adapts to Spicer 1500 and 1600 series, and Mechanics 7C U-joint flange yoke	Drum
SAE C, D	Spicer 3-1-2181	Band
SAE C, D	6C, 7C yokes or companion flange	N/A

⚠ ***WARNING VEHICLE RUNAWAY HAZARD***
A transmission is not a braking system. Install transmission only if there is a braking system capable of stopping vehicle with dead engine, disengaged transmission, or loss of hydrostatic retardation. Otherwise, vehicle may roll freely, resulting in loss of control or serious or fatal injury.

Powershift transmissions



Model	Input power	Max input no load speed	Max input torque	Drop	Mounting options
DF150	112 kW (150 hp)	3000 rpm	1,288 Nm (950 lb-ft)	500 mm (19.68 in)	Engine, midship, or remote
DF250	186 kW (250 hp)	2600 rpm	1,898 Nm (1,400 lb-ft)	550 mm (21.65 in)	Engine, midship, or remote
2000 Series	168 kW (225 hp)	3000 rpm	1,627 Nm (1,200 lb-ft)	244.6 mm (9.63 in) short drop 473.2 mm (18.63 in) long drop	Engine, midship, or remote

Specifications are subject to change.

DFR engine-mounted PTO

The front housing of our DF150 and DF250 products is our DFR engine-mounted PTO, which can also be purchased as a stand-alone product. The DFR mounts to the engine and can be used to power the transmission, as well as a variety of external equipment.

Ratings
- Max input power: 224 kW (300 hp)
- Max input no load speed: 3000 rpm

Engine housing
- SAE 2 or 3

Options
- Direct-drive or converter
- Dual pump drive pads with a variety of yoke and flange outputs

Gearings	Pump drives	Options
Constant mesh, in-line, high-contact ratio ground gears; 8 forward, 4 reverse speeds	Full range of SAE mounting options	– Magnetic pulse generator for speedometer – Internal engine-side axle disconnect – Caliper and disc or integral spring-applied, pressure-released parking brake – Torque converter or direct drive
Constant mesh, in-line, high-contact ratio ground gears; 11 forward, 4 reverse speeds	Full range of SAE mounting options	– Magnetic pulse generator for speedometer – Internal engine-side axle disconnect – Caliper and disc or integral spring-applied, pressure-released parking brake – Torque converter or direct drive
Constant mesh, in-line, high-quality spur gears	Full range of SAE mounting options	– Single-lever operator controller (includes neutral start and reverse warning alarm switch) – Magnetic pulse generator for speedometer – Integral engine side axle disconnect – Integral no-spin differential – Disc parking brake – Converter lock-up

Modular pump drives

Model	Max input power*	Max input torque*	Max output torque per pump pad	Max input or output speed
28000 Single Direct drive	268 kW (360 hp)	881 Nm (650 lb-ft)	881 Nm (650 lb-ft)	3000 rpm
28000 Single w/ 5" gear centers	242 kW (325 hp)	780 Nm (575 lb-ft)	780 Nm (575 lb-ft)	3000 rpm
28000 Double w/ 5" gear centers	268 kW (360 hp)	881 Nm (650 lb-ft)	780 Nm (575 lb-ft)	3000 rpm
28000 Double w/ 6" gear centers	268 kW (360 hp)	1,017 Nm (750 lb-ft)	881 Nm (650 lb-ft)	3000 rpm
28000 Triple	268 kW (360 hp)	1,017 Nm (750 lb-ft)	881 Nm (650 lb-ft)	3000 rpm
59000 Double	522 kW (700 hp)	1,695 Nm (1,250 lb-ft)	881 Nm (650 lb-ft)	3000 rpm
59000 Triple	522 kW (700 hp)	1,695 Nm (1,250 lb-ft)	881 Nm (650 lb-ft)	3000 rpm
59000 Four	522 kW (700 hp)	1,695 Nm (1,250 lb-ft)	881 Nm (650 lb-ft)	3000 rpm
59000 Four Wide	522 kW (700 hp)	1,695 Nm (1,250 lb-ft)	881 Nm (650 lb-ft)	3000 rpm
56000 Double	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,712 Nm (2,000 lb-ft)	2500 rpm
56000 Double w/ shaft drive	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,712 Nm (2,000 lb-ft)	2500 rpm
56000 Triple	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,712 Nm (2,000 lb-ft)	2500 rpm
56000 Four	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,712 Nm (2,000 lb-ft)	2500 rpm
56000 Five	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,034 Nm (1,500 lb-ft)	2500 rpm
56000 Five Deep sump	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,034 Nm (1,500 lb-ft)	2500 rpm
57000 Four 14" centers	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,712 Nm (2,000 lb-ft)	2500 rpm
57000 Four 16" centers	708 kW (950 hp)	2,712 Nm (2,000 lb-ft)	2,712 Nm (2,000 lb-ft)	2500 rpm

Specifications are subject to change.

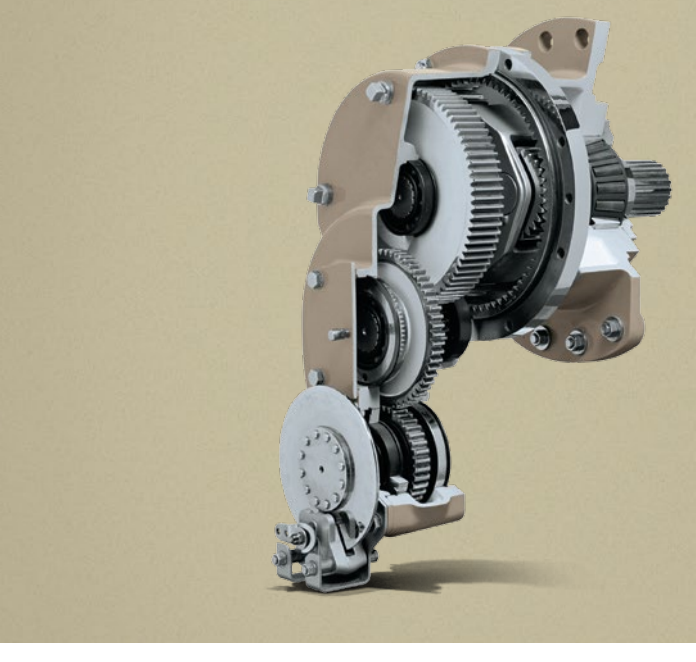
**Clutch-rating dependent.*

Output rotation
Enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise
Anti-enginewise; except through shaft-drive enginewise
Anti-enginewise
Anti-enginewise; except through shaft-drive enginewise
Enginewise
Enginewise
Anti-enginewise
Anti-enginewise

Planetary gear drives

Series model	Output torque Nm (lb-ft)		Ratio range[1]
	Intermittent	Continuous	
F9R	12,880 (9,500)[5]	8,135 (6,000)	3.27 – 117:1
F12R	16,948 (12,500)	10,168 (7,500)	13.2:1 – 81.3:1
F25R	33,895 (25,000)	18,710 (13,800)	5.0:1 – 54.6:1

Specifications are subject to change.



Max input speed rpm continuous[2]	Max radial load kgf (lb)[3]	Max input power kW (hp)	Approx. weight kg (lb)[4]
2800	14,287 (31,500)	27 (36)	100 – 181 (220 – 400)
2800	14,287 (31,500)	35 (48)	91 – 122 (200 – 270)
2800	28,570 (63,000)	71 (95)	215 – 263 (475 – 580)

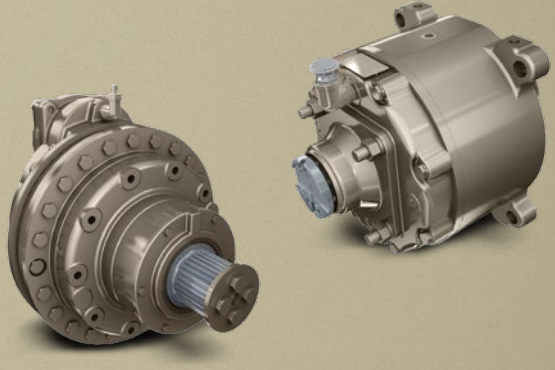
[1] Actual ratio is dependent on the drive configuration.

[2] Maximum input speed related to ratio and maximum output speed.

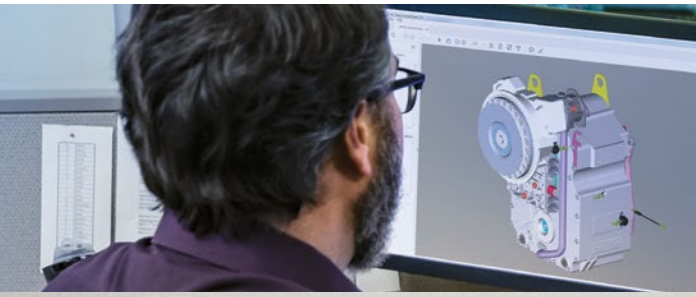
[3] Maximum radial load placed at optimum load position.

[4] Weight varies with configuration and ratio selected.

[5] Requires tapered roller planet bearings (not available with all ratios).

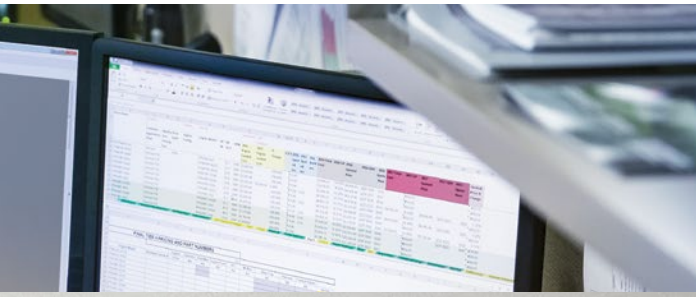


Customer support



Application integration support

John Deere Power Systems is one of the few companies that integrates entire powertrain systems — from the engine and electronics to the drivetrain components. Our highly trained distributors have experience integrating engines, drivetrain components, and electronics into a wide variety of applications. We also provide equipment manufacturers with product and engineering support to maximize performance and fuel economy while meeting emissions regulations.



Our application engineers are ready to assist you in selecting the options that best fit your needs. We also offer dedicated OEM service and long-term aftermarket support.

To see the value we can add to your equipment, call us today at 800-533-6446.

John Deere Power Systems

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JOHN DEERE

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Funk™ Drivetrain Components

Backed by a reputation of reliability and customer service, Funk transmissions, axles, pump drives, and planetary drives are designed to operate in a wide range of rugged off-highway conditions.

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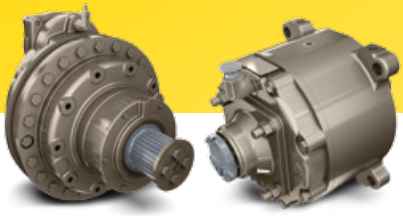
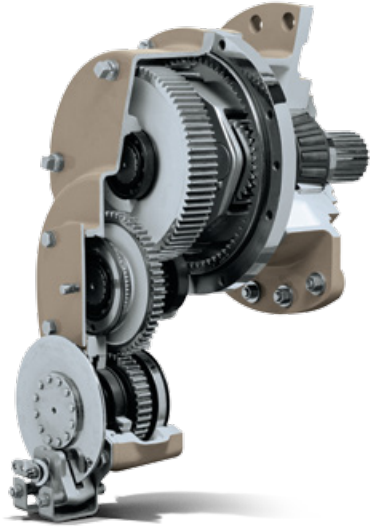
Planetary gear drives

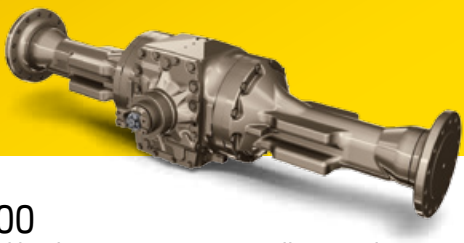


Series model	Output torque Nm (lb-ft)		Max input speed, rpm continuous	Max input power	
	Intermittent	Continuous		kW	hp
F9R	12,880 (9500)	8135 (6000)	2800	27	36
F12R	16,948 (12,500)	10,168 (7500)	2800	35	48
F25R	33,895 (25,000)	18,710 (13,800)	2800	71	95



All specifications are subject to change.

Axles



Series 1200
- Peak vertical load – 240,000 N (54,000 lb) per axle
- Track width – 1300 mm (51.18 in), 1500 mm (59.10 in),
- 1700 mm (66.93 in), 1953 mm (76.89 in)
- Ratio range – 4.333 – 33.429:1
- Peak output torque – 35,000 Nm (310,000 in-lb) per axle shaft

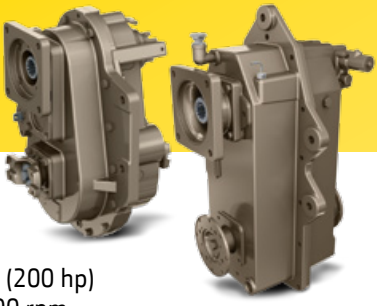
Series 1400
- Peak vertical load – 300,000 N (67,000 lb) per axle
- Track width – 1700 mm (66.93 in), 1953 mm (76.89 in)
- Ratio range – 16.208 – 32.914:1
- Peak output torque – 47,400 Nm (420,000 in-lb) per axle shaft

Series 1400 SWEDA™
- Peak vertical load – 300,000 N (67,000 lb) per axle
- Track width – 2540 mm (100.0 in)
- Ratio range – 27.927 – 32.914:1
- Peak output torque – 47,400 Nm (420,000 in-lb) per axle shaft

Series 1600
- Peak vertical load – 395,000 N (88,000 lb) per axle
- Track width – 2094 mm (82.40 in)
- Ratio range – 22.5:1
- Peak output torque – 67,700 Nm (600,000 in-lb) per axle shaft

All specifications are subject to change.

HMD transmissions



18000 HMD
- Speeds – 2
- Input power – 149 kW (200 hp)
- Max input speed – 4000 rpm
- Input torque – 949 Nm (700 lb-ft)
- Motor adapters – SAE C, D

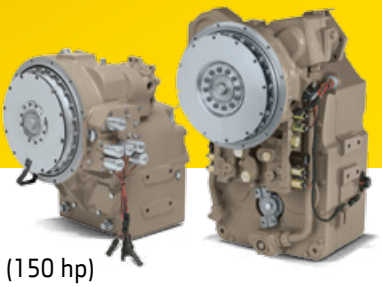
12700 HMD
- Speeds – 4
- Input power – 104 kW (140 hp)
- Max input speed – 2500 rpm
- Input torque – 407 Nm (300 lb-ft)
- Motor adapters – SAE C, D

33000 HMD
- Speeds – 4
- Input power – 101 kW (135 hp)
- Max input speed – 2400 rpm
- Input torque – 407 Nm (300 lb-ft)
- Motor adapters – SAE C, D

23000 HMD
- Speeds – 3, 4
- Input power – 75 kW (100 hp)
- Max input speed – 3000 rpm
- Input torque – 271 Nm (200 lb-ft)
- Motor adapters – SAE C, D

HS17000 HMD
- Speeds – 2
- Input power – 93 kW (125 hp)
- Max input speed – 4300 rpm
- Input torque – 1017 Nm (750 lb-ft)
- Motor adapters – SAE C, D

Powershift transmissions



DF150

- Input power – 112 kW (150 hp)
- Max input no load speed – 3000 rpm
- Max turbine torque – 1288 Nm (950 lb-ft)
- 500 mm (19.68 in) drop
- Converter or direct drive
- Engine, midship, or remote
- Up to 8 forward/4 reverse speeds

DF250

- Input power – 186 kW (250 hp)
- Max input no load speed – 2600 rpm
- Max turbine torque – 1898 Nm (1400 lb-ft)
- 550 mm (21.65 in) drop
- Converter or direct drive
- Engine, midship, or remote
- Up to 11 forward/4 reverse speeds

2000 Series

- Input power – 168 kW (225 hp)
- Max input no load speed – 3000 rpm
- Max turbine torque – 1627 Nm (1200 lb-ft)
- 244.6 mm (9.63 in) short drop, 473.2 mm (18.63 in) long drop
- Engine, midship, or remote
- Up to 6 forward/3 reverse speeds

All specifications are subject to change.

DFR engine-mounted PTO

The front housing of our DF150 and DF250 products is our DFR engine-mounted PTO, which can also be purchased as a standalone product. The DFR mounts to the engine and can be used to power the transmission as well as a variety of external equipment.

Ratings

– Max input power: 224 kW (300 hp)
– Max input no load speed: 3000 rpm

Engine housing

– SAE 2 or 3

Options

– Direct-drive or converter
– Dual pump drive pads with a variety of yoke and flange outputs

Modular pump drives

28000 direct pump drive
- Input power – 268 kW (360 hp)
- Input torque – 881 Nm (650 lb-ft)
- Pump adaptation – SAE B, BB, C, D

28000 single, double pump drives
- Input power – 242 kW (325 hp)
- Input torque – 780 Nm (575 lb-ft)
- Gear centers – 127 mm (5 in)
- Pump adaptation – SAE A, B, BB, C, D

28000 double, triple pump drives
- Input power – 268 kW (360 hp)
- Input torque – 1017 Nm (750 lb-ft)
- Gear centers – 152 mm (6 in)
- Pump adaptation – SAE A, B, C, D

59000 double, triple, four pump drives
- Input power – 522 kW (700 hp)
- Input torque – 1695 Nm (1250 lb-ft)
- Gear centers – 203 mm (8 in), 308 mm (12.1 in)
- Pump centers 4 wide – 308 mm (12.1 in)
- Pump adaptation – SAE A, B, C, D

All specifications are subject to change.

56000 pump drives

– 2, 3, 4, 5 pump pad configurations
– Max input power – 708 kW (950 hp)
– Max input torque – 2712 Nm (2000 lb-ft)
– Pump centers – 254 mm (10 in), 407 mm (16 in)
– Pump adaptation – SAE C, D, E
– Wide centers for larger hydraulic pumps

57000 pump drives

– 4 pump pad configurations
– Max input power – 708 kW (950 hp)
– Max input torque – 2712 Nm (2000 lb-ft)
– Pump centers – 356 mm (14 in), 407 mm (16 in)
– Pump adaptation – SAE C, D, E
– Wide centers for larger hydraulic pumps

Customer support

Application integration support

John Deere Power Systems is one of the few companies that integrate entire powertrain systems — from the engine and electronics to the drivetrain components. Our highly trained distributors have experience integrating engines, drivetrain components, and electronics into a wide variety of applications. We also provide equipment manufacturers with product and engineering support to maximize performance and fuel economy while meeting emissions regulations.

Our application engineers are ready to assist you in selecting the options that best fit your needs. We also offer dedicated OEM service and long-term aftermarket support.

To see the value we can add to your equipment, call us today at 1-800-533-6446.

The power of a worldwide support network

With John Deere, you never have far to go to find expert assistance and advice. The more than 4,000 service locations throughout the world give you peace of mind that you can get service when and where you need it.

John Deere Power Systems

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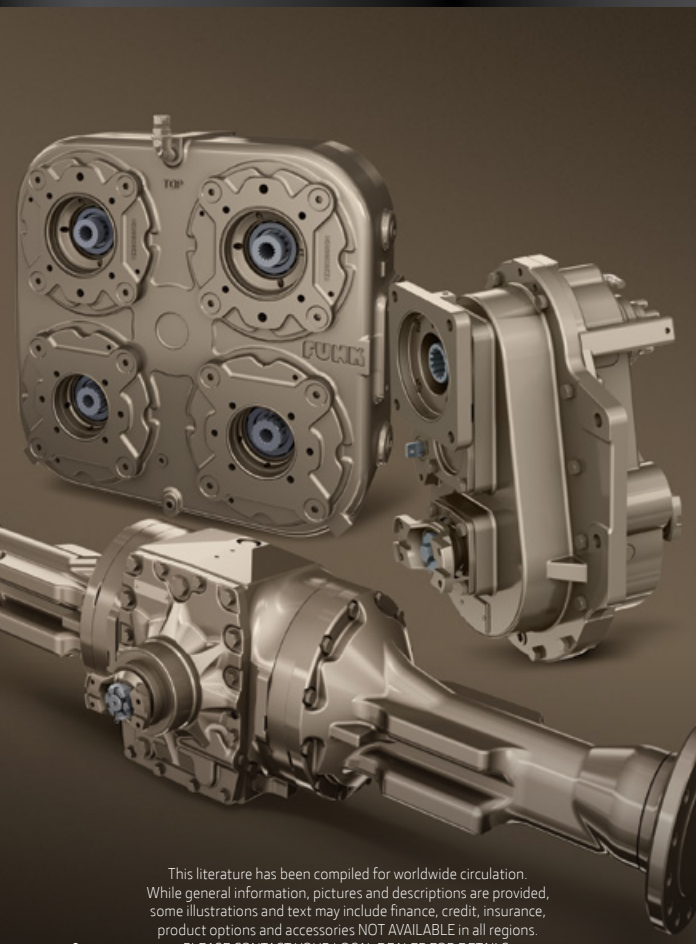

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SAFETY live with it

DSWT14 Litho in U.S.A. (16-09)

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