

## ENGINE

John Deere engineered and manufactured 6.8 liter diesel engine features a high-efficiency turbo-charger for maximum performance. Replaceable wet-type cylinder liners help ensure superior heat dissipation, longer engine life. High-strength alloy cylinder heads include replaceable valve seat inserts. Cast aluminum pistons reduce rod bearing loads and provide vital heat transfer; pistons are sprayed with cooling oil for longer engine life.

**Engine:** John Deere 6068T  
Rated power at 2200 rpm.....140 net hp (104 kW)  
.....148 gross hp (110 kW)  
Turbocharger.....standard  
Cylinders.....6  
Displacement.....414 cu. in. (6.785 L)  
Fuel consumption, typical.....2.8 to 4.3 gal./hr. (10.6 to 16.3 L/h)  
Max. net torque rise  
35% at 1350 rpm.....451 lb.-ft. (612 Nm)  
Lubrication.....pressure system with full-flow filter  
Electrical system.....12 volt with 95-amp alternator  
Battery.....reserve capacity 180 minutes

## TRANSMISSION

The direct-drive power shift transmission is engineered and manufactured by John Deere specifically for skidders. Eight speeds in forward, four speeds in reverse. The transmission charge pump is externally mounted for easy servicing.

## TRAVEL SPEEDS

At 2200 engine rpm, no tire slip, with 28L-26 tires

	mph	(km/h)
Forward.....	1.5-16.4	2.4-26.3
Reverse.....	2.1-5.9	3.3-9.4

## AXLES

Heavy-duty, inboard-mounted planetary-type final drives distribute shock loads evenly. Hydraulically-applied differential lock is standard equipment in both front and rear axles. Differential can be locked for exceptional traction and unlocked for easy maneuvering with less tire wear.

## BRAKES

Hydraulic, annular-style wet-disk brakes are mounted inboard as standard equipment on both axles. Completely sealed and running in a cooling oil bath, they are self-adjusting, self-equalizing and need no periodic service. A spring-applied, hydraulically-released wet multi-disk parking brake is mounted on the transmission, and is automatically applied when the engine is off. This brake can be manually applied by placing the transmission control lever in the *park* position.

## STEERING

The load- and speed-sensing power steering system delivers quick response and power for easy maneuvering in the woods. Its 90 degrees of frame articulation (45 degrees each direction) provide exceptional maneuverability.

Outside clearance circle with blade.....37 ft. 2 in. (11.33 m)

## HYDRAULICS

The quick, responsive and powerful hydraulic system features an axial-piston, pressure-compensated pump and closed-center design. The hydraulic system is separate from the transmission, enhancing the overall reliability of both systems.

Pump flow at 2200 rpm and 3000 psi  
(20 684 kPa).....43 gpm (162.8 L/min.)

## TIRES

24.5-32, 12 PR LS2	28L-26, 12 PR LS2
24.5-32, 16 PR LS2	30.5-32, 12 PR LS2
	30.5-32, 16 PR LS2

## WINCH

The John Deere-engineered and manufactured direct-drive 4000 Winch includes wet multi-disk clutch and spring-applied, hydraulically-released brake. The adjustable free-spool feature and low-friction drum seals increase ease of operation. All winch functions are controlled by a single conveniently-located lever.

**Cable capacity - calculated - no allowance made for loose or uneven spooling**

	8" Drum	10" Drum
.625 in. (15.8 mm) cable.....	254 ft. (77.4 m)	199 ft. (60.6 m)
.75 in. (19.1 mm) cable.....	179 ft. (54.6 m)	141 ft. (43 m)
.875 in. (22.2 mm) cable.....	129 ft. (39.3 m)	101 ft. (30.8 m)
1 in. (25.4 mm) cable.....	100 ft. (30.5 m)	78 ft. (23.8 m)

**Linepull at peak engine and .75 in. (19 mm) cable**

	8" Drum	10" Drum
Bare drum.....	38,867 lb. (173 kN)	36,223 lb. (161 kN)
Full drum.....	23,953 lb. (107 kN)	27,905 lb. (124 kN)

**Line speed at 2200 rpm and .75 in. (19 mm) cable**

	8" Drum	10" Drum
Bare drum.....	146 fpm (44.5 m/min.)	157 fpm (47.9 m/min.)
Full drum.....	242 fpm (73.7 m/min.)	208 fpm (63.4 m/min.)

## CAPACITIES

Fuel tank.....	52 gal. (197 L)
Cooling system.....	26 qt. (24.6 L)
Engine lubrication, including filter.....	20 qt. (18.9 L)
Transmission.....	7.75 gal. (29.3 L)
Front differential.....	4.5 gal. (17 L)
Rear differential.....	7.5 gal. (28.4 L)
Winch, 4000.....	9.3 gal. (35.2 L)
Hydraulic reservoir capacity.....	11 gal. (41.6 L)

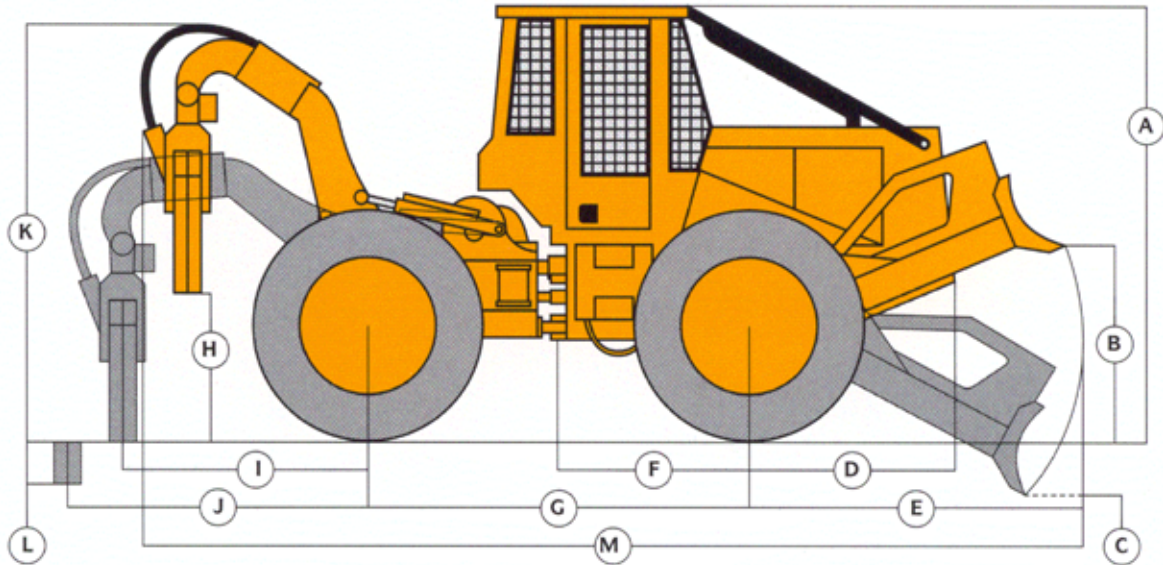
## OPERATING WEIGHT

648E  
(single function)  
with standard equipment.....27,550 lb. (12 497 kg)  
(dual function)  
with standard equipment.....29,100 lb. (13 200 kg)

## DIMENSIONS

Sideview dimensions are for skidder equipped with 28L-26, 12 PR LS2 tires.

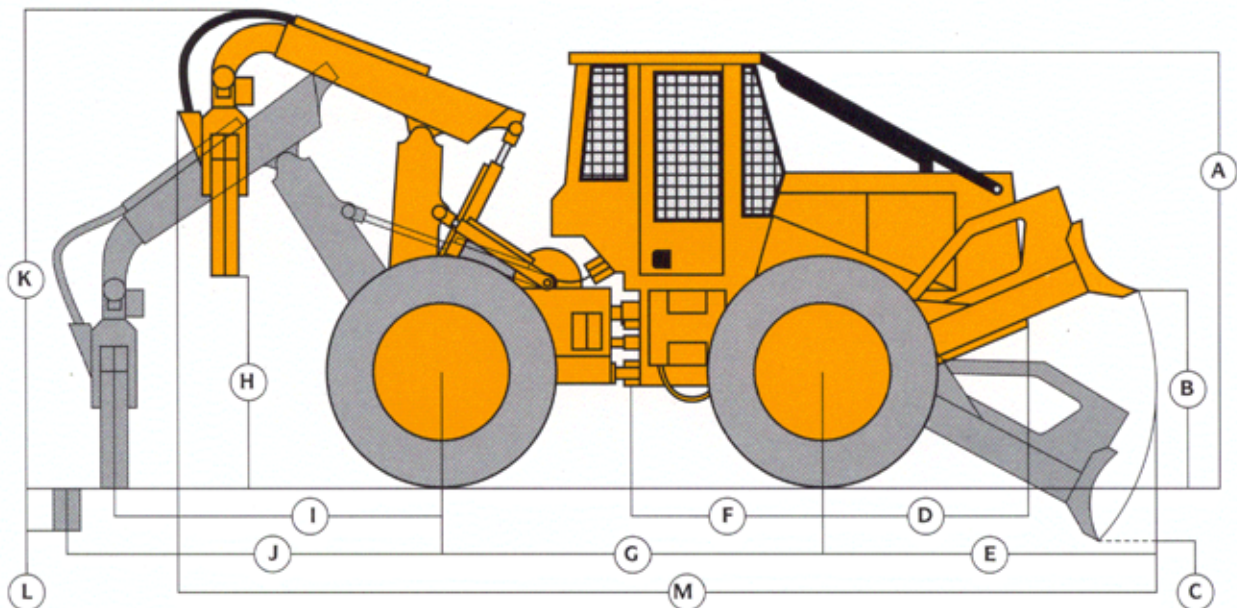
### Single Function Grapple



#### Key:

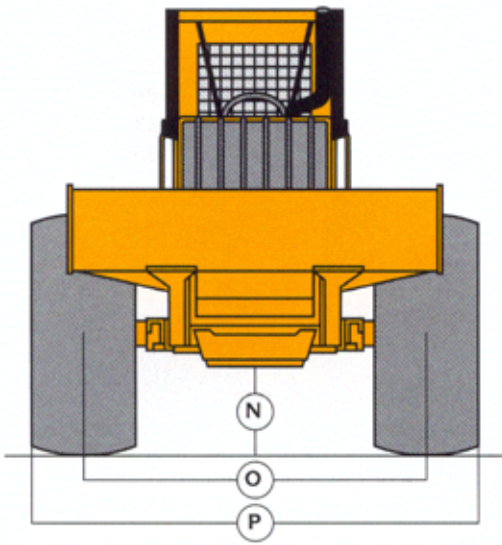
A Overall height.....	9 ft. 11 in. (3.02 m)
B Maximum blade lift above ground.....	4 ft. 3.5 in. (1.31 m)
C Maximum blade dig below ground.....	14.5 in. (368 mm)
D Front axle to front of machine.....	66.3 in. (1685 mm)
E Front axle to blade cutting edge arc.....	90.2 in. (2292 mm)
F Front axle to articulation joint.....	68 in. (1727 mm)
G Wheelbase.....	135 in. (3430 mm)
H Height of grapple from ground level.....	2 ft. 7 in. (787 mm)
I Reach of grapple at ground level.....	7 ft. 4.3 in. (2.24 m)
J Reach of grapple at full reach.....	7 ft. 11.8 in. (2.43 m)
K Maximum height of boom.....	10 ft. 6 in. (3.20 m)
L Below ground reach of grapple at full reach.....	37 in. (940 mm)
M Overall length.....	23 ft. 8.6 in. (7.23 m)

### Dual Function Grapple

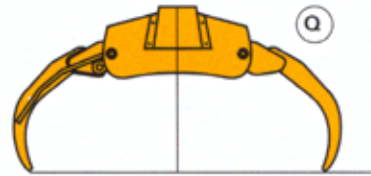
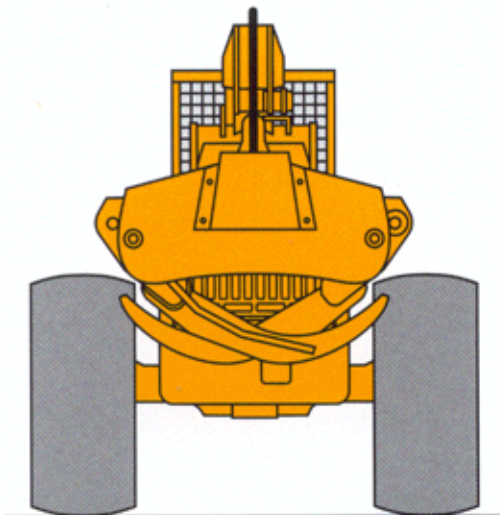


#### Key:

A through C.....	same as above
H Height of grapple from ground level.....	4 ft. 6 in. (1372 mm)
I Reach of grapple at ground level.....	5 ft. 1 in. (1.55 m)
J Reach of grapple at full reach.....	9 ft. 8.9 in. (2.97 m)
K Maximum height of boom.....	12 ft. 1 in. (3.68 m)
L Below ground reach of grapple at full reach.....	42.2 in. (1072 mm)
M Overall length.....	24 ft. 1 in. (7.35 m)



Tire Size	N Ground Clearance	O Wheel Tread	P Overall Width
28L-26	20.2 in. (514 mm)	7 ft. 10.5 in. (2.40 m)	10 ft. 2.5 in. (3.11 m)
24.5-32	23.5 in. (597 mm)	8 ft. 2 in. (2.49 m)	10 ft. 2.5 in. (3.11 m)
30.5-32	24.2 in. (615 mm)	8 ft. 1 in. (2.46 m)	10 ft. 7.5 in. (3.24 m)
28L-26 (narrow gauge)	20.2 in. (514 mm)	7 ft. 6.5 in. (2.30 m)	9 ft. 10.5 in. (3.01 m)
24.5-32 (narrow gauge)	23.5 in. (597 mm)	7 ft. 5 in. (2.26 m)	9 ft. 5.5 in. (2.88 m)



	Single and Dual Function Grapple	Dual Function Grapple (Hi-Capacity Option)
Q Tong opening at tips ...	113 in. (2870 mm)	120 in. (3049 mm)
R Enclosure area, tongs tip to tip .....	10.0 sq. ft. (0.93 m <sup>2</sup> )	11.5 sq. ft. (1.07 m <sup>2</sup> )
S Minimum diameter of stem .....	6 in. (152 mm)	6 in. (152 mm)