Engine

Type: John Deere POWERTECH™ 4045T, turbocharged; meets North American EPA and CARB non-road diesel engine regulations effective January 1, 1997; also is certifiable to proposed E.U. (European Union) regulations, which are not yet effective.

Rated power: 92.5 SAE gross hp (69 kW) / 86 SAE net hp (64 kW) @ 2,300 rpm

Cylinders: 4

Displacement: 276 cu. in. (4.524 L)

Fuel consumption, typical: 1.3 to 2.3 gal./hr. (4.9 to 8.7 L/h)

Torque rise: 38 percent

Maximum net torque: 277 lb.-ft. (376 Nm)

Lubrication: pressure system with spin-on filter and cooler

Air cleaner: dual stage dry type with safety element and precleaner

Electrical system: 12 volt with 65-amp alternator

Sucker-type cooling fan

Transmission

Four-speed, helical cut gear, collar-shift transmission synchronized in all gears with hydraulic reverser

Torque converter, single stage, dual phase with 2.63:1 stall ratio: 11 in. (280 mm)

Travel speeds with 16.9-28 rear tires

<table>
<thead>
<tr>
<th>Gear 1</th>
<th>Forward</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powershift</td>
<td>3.6 mph (5.8 km/h)</td>
<td>4.0 mph (6.4 km/h)</td>
</tr>
<tr>
<td>Powershift</td>
<td>3.6 mph (5.8 km/h)</td>
<td>4.0 mph (6.4 km/h)</td>
</tr>
<tr>
<td>Powershift</td>
<td>5.9 mph (9.5 km/h)</td>
<td>6.6 mph (10.6 km/h)</td>
</tr>
<tr>
<td>Powershift</td>
<td>5.8 mph (9.3 km/h)</td>
<td>6.7 mph (10.8 km/h)</td>
</tr>
<tr>
<td>Powershift</td>
<td>14.4 mph (23.2 km/h)</td>
<td>16.1 mph (25.9 km/h)</td>
</tr>
<tr>
<td>Powershift</td>
<td>13.9 mph (22.4 km/h)</td>
<td>16.6 mph (26.7 km/h)</td>
</tr>
<tr>
<td>Powershift</td>
<td>20.5 mph (33.0 km/h)</td>
<td>20.5 mph (33.0 km/h)</td>
</tr>
<tr>
<td>Powershift</td>
<td>20.5 mph (33.0 km/h)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Final Drives

Heavy-duty, inboard planetary final drives evenly distribute shock loads over three gears

Brakes

Power-assisted, hydraulic wet disc, mounted inboard, self adjusting and self equalizing

Capacities

Fuel tank (with ground level fueling): 36 gal. (136 L)

Engine coolant: 17 qt. (16 L)

Engine oil including filter: 9 qt. (8.5 L)

Torque converter and transmission: 15 qt. (14 L)

Hydraulic system: 24 gal. (91 L)

Rear axle: 3.5 gal. (13 L)

Mechanical-front-wheel-drive axle: 2.3 gal. (8.5 L)

Steering

Hydrostatic power steering and emergency steering conform to ISO5010

Non-powered front axle (Carraro)

Curb turning radius with brakes: 10 ft. 7 in. (3.23 m)

Without brakes: 12 ft. 8 in. (3.86 m)

Bucket clearance circle with brakes: 30 ft. 4 in. (9.25 m)

Without brakes: 34 ft. 0 in. (10.36 m)

Steering wheel turns, lock to lock

Non-powered axle: 3.1

MFWD axle: 3.0

Mechanical-front-wheel-drive

Curb turning radius with brakes: 10 ft. 11 in. (3.34 m)

Without brakes: 13 ft. 8 in. (4.17 m)

Bucket clearance circle with brakes: 29 ft. 9 in. (9.07 m)

Without brakes: 35 ft. 3 in. (10.74 m)

Steering wheel turns, stop to stop: 2.5

Axle oscillations stop to stop, both axles: 22 degrees

Axle ratings (SAE J43)

Front: 18,860 lb. (8555 kg)

Rear: 14,700 lb. (6670 kg)

Hydraulic System

System: open center

Pressure

Backhoe: 3,625 psi (25 000 kPa)

Loader: 3,625 psi (25 000 kPa)
**Hydraulic System (continued)**

Pump: gear type, tandem with unloader

Flow: 2,200 rpm

| Backhoe | 36 gpm (136 L/min.) |
| Loader | 28 gpm (106 L/min.) |

Filter, return oil: 10-micron, spin-on enclosed replaceable element

**Cylinders**

| Loader boom (2) | 3.15 in. (80 mm) | 31.1 in. (790 mm) | 1.97 in. (50 mm) |
| Loader bucket (1) | 3.15 in. (80 mm) | 33.7 in. (856 mm) | 1.77 in. (45 mm) |
| Backhoe boom (1) | 4.72 in. (120 mm) | 31.3 in. (795 mm) | 2.20 in. (56 mm) |
| Backhoe crowd (1) | 4.53 in. (115 mm) | 23.9 in. (607 mm) | 2.48 in. (63 mm) |
| Backhoe bucket (1) | 3.54 in. (90 mm) | 31.9 in. (810 mm) | 2.20 in. (56 mm) |
| Backhoe swing (2) | 3.54 in. (90 mm) | 10.9 in. (278 mm) | 1.97 in. (45 mm) |
| Backhoe extendable dipperstick (1) | 2.76 in. (70 mm) | 42.0 in. (1067 mm) | 1.77 in. (45 mm) |
| Backhoe stabilizer (2) | 2.76 in. (70 mm) | 14.6 in. (370 mm) | 1.77 in. (45 mm) |
| Steering (1) non-powered axle | 2.56 in. (65 mm) | 8.39 in. (213 mm) | 1.42 in. (36 mm) |
| Steering (1) MFWD | 2.56 in. (65 mm) | 8.27 in. (210 mm) | 1.42 in. (36 mm) |

**Tires**

<table>
<thead>
<tr>
<th>Rear</th>
<th>Front</th>
</tr>
</thead>
<tbody>
<tr>
<td>With without-powered front axle</td>
<td>16.9-24, 8 PR R4</td>
</tr>
<tr>
<td>With mechanical-front-wheel-drive</td>
<td>19.5L-24, 8 PR R4</td>
</tr>
</tbody>
</table>

**SAE Operating Weights**

| Standard | 14,700 lb. (6670 kg) |
| Cab add | 580 lb. (263 kg) |
| Mechanical-front-wheel-drive with tires add | 485 lb. (220 kg) |
| Extendable dipperstick excluding required counterweight add | 490 lb. (222 kg) |
| Optional 400-lb. counterweight add | 400 lb. (181 kg) |
| Optional 650-lb. counterweight add | 650 lb. (295 kg) |
| Optional 250-lb. bolt-on counterweight add | 250 lb. (113 kg) |

*See backhoe and loader performance data for bucket weights.*

**Loader Buckets**

| Heavy-duty long lip | 92 in. (2340 mm) | 1.30 cu. yd. (1.00 m³) | 1,050 lb. (476 kg) |
| Multipurpose | 82 in. (2080 mm) | 1.18 cu. yd. (0.91 m³) | 1,664 lb. (755 kg) |
| | 86 in. (2180 mm) | 1.25 cu. yd. (1.06 m³) | 1,713 lb. (777 kg) |
| | 92 in. (2340 mm) | 1.32 cu. yd. (1.01 m³) | 1,800 lb. (816 kg) |

*Auxiliary cutting edge and skid shoes are standard on all buckets.*

**Backhoe Performance**

| With Standard | With Extendable Dipperstick* |
| With | Retracted | Extended |
| Digging force, bucket cylinder | 11,990 lb. (53.3 kN) | 12,158 lb. (54.1 kN) | 12,158 lb. (54.1 kN) |
| Digging force, crowd cylinder | 8,090 lb. (36.0 kN) | 7,796 lb. (34.7 kN) | 5,628 lb. (25.0 kN) |
| Swing arc | 180 degrees | 180 degrees | 180 degrees |
| Operator control | two levers | right foot treadle | right foot treadle |
| Bucket rotation | 190 degrees | 190 degrees | 190 degrees |
| Leveling angle | 8 degrees | 8 degrees | 8 degrees |

*Backhoe specifications are with 24-in. x 7.5-cu. ft. (610 mm x 0.21 m³) bucket.*

**Backhoe Buckets**

| Standard | 24 in. (610 mm) | 7.5 cu. ft. (0.21 m³) | 350 lb. (159 kg) |
| Heavy-duty with lift loop | 12 in. (305 mm) | 3.3 cu. ft. (0.09 m³) | 295 lb. (134 kg) |
| | 18 in. (457 mm) | 5.1 cu. ft. (0.14 m³) | 335 lb. (152 kg) |
| | 24 in. (610 mm) | 7.5 cu. ft. (0.21 m³) | 400 lb. (181 kg) |
| | 24 in. (610 mm) | 8.8 cu. ft. (0.25 m³) | 420 lb. (191 kg) |
| | 30 in. (762 mm) | 10.0 cu. ft. (0.28 m³) | 445 lb. (202 kg) |
| | 36 in. (914 mm) | 12.5 cu. ft. (0.35 m³) | 510 lb. (231 kg) |
| Severe duty with lift loop | 18 in. (457 mm) | 5.1 cu. ft. (0.14 m³) | 362 lb. (164 kg) |
| | 24 in. (610 mm) | 7.5 cu. ft. (0.21 m³) | 425 lb. (193 kg) |
| | 24 in. (610 mm) | 8.8 cu. ft. (0.25 m³) | 455 lb. (206 kg) |
| | 30 in. (762 mm) | 10.0 cu. ft. (0.28 m³) | 475 lb. (215 kg) |
| | 36 in. (914 mm) | 12.5 cu. ft. (0.35 m³) | 510 lb. (231 kg) |

**Ditch cleaning**
**Lift capacities are over-end values in lb. (kg) according to SAE J31. Figures listed are 87% of the maximum lift force available. Base vehicle includes counterweight.**
## Lift Capacity with Quick-Coupler/Forks

<table>
<thead>
<tr>
<th>Lift Capacity with Quick-Coupler/Forks</th>
<th>315SG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Maximum height</td>
<td>11 ft. 8 in. (3.56 m)</td>
</tr>
<tr>
<td><strong>B</strong> Maximum reach</td>
<td>18 ft. 1 in. (5.61 m)</td>
</tr>
<tr>
<td><strong>C</strong> At ground line</td>
<td>22 ft. 8 in. (6.91 m)</td>
</tr>
<tr>
<td><strong>D</strong> Below ground line</td>
<td>4.4 in. (112.7 mm) to bottom of tine / 2.7 in. (68.3 mm) to top of tine</td>
</tr>
</tbody>
</table>

## Loader Performance with Bucket Options

<table>
<thead>
<tr>
<th>Loader Performance with Bucket Options</th>
<th>1.30-cu. yd.</th>
<th>1.18-cu. yd.</th>
<th>1.25-cu. yd.</th>
<th>1.32-cu. yd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Heavy-Duty Long Lip</td>
<td>single lever</td>
<td>single lever</td>
<td>single lever</td>
<td>single lever</td>
</tr>
<tr>
<td>(2) Multipurpose</td>
<td>single lever</td>
<td>single lever</td>
<td>single lever</td>
<td>single lever</td>
</tr>
<tr>
<td>Breakout force</td>
<td>10,300 lb. (45.8 kN)</td>
<td>9,700 lb. (43.1 kN)</td>
<td>9,200 lb. (41.3 kN)</td>
<td>8,700 lb. (39.2 kN)</td>
</tr>
<tr>
<td>Lifting capacity, full height</td>
<td>7,200 lb. (3266 kg)</td>
<td>6,700 lb. (3061 kg)</td>
<td>6,200 lb. (2909 kg)</td>
<td>5,700 lb. (2561 kg)</td>
</tr>
<tr>
<td>a Height to bucket hinge pin, maximum</td>
<td>11 ft. 2 in. (3.40 m)</td>
<td>11 ft. 2 in. (3.40 m)</td>
<td>11 ft. 2 in. (3.40 m)</td>
<td>11 ft. 2 in. (3.40 m)</td>
</tr>
<tr>
<td>b Dump clearance, bucket at 45 degrees</td>
<td>8 ft. 8 in. (2.64 m)</td>
<td>8 ft. 7 in. (2.62 m)</td>
<td>8 ft. 7 in. (2.62 m)</td>
<td>8 ft. 7 in. (2.62 m)</td>
</tr>
<tr>
<td>c Bucket dump angle, maximum</td>
<td>45 degrees</td>
<td>45 degrees</td>
<td>45 degrees</td>
<td>45 degrees</td>
</tr>
<tr>
<td>d Reach at full height, bucket at 45 degrees</td>
<td>30.1 in. (765 mm)</td>
<td>32.2 in. (818 mm)</td>
<td>32.2 in. (818 mm)</td>
<td>32.2 in. (818 mm)</td>
</tr>
<tr>
<td>e Rollback angle at ground level</td>
<td>40 degrees</td>
<td>40 degrees</td>
<td>40 degrees</td>
<td>40 degrees</td>
</tr>
<tr>
<td>f Digging depth below ground, bucket level</td>
<td>8.1 in. (206 mm)</td>
<td>7.3 in. (185 mm)</td>
<td>7.3 in. (185 mm)</td>
<td>7.3 in. (185 mm)</td>
</tr>
<tr>
<td>g Raising time to full height</td>
<td>4.9 sec.</td>
<td>4.9 sec.</td>
<td>4.9 sec.</td>
<td>4.9 sec.</td>
</tr>
<tr>
<td>h Bucket dump time</td>
<td>1.1 sec.</td>
<td>1.1 sec.</td>
<td>1.1 sec.</td>
<td>1.1 sec.</td>
</tr>
<tr>
<td>i Bucket lowering time (power down)</td>
<td>1.9 sec.</td>
<td>1.9 sec.</td>
<td>1.9 sec.</td>
<td>1.9 sec.</td>
</tr>
</tbody>
</table>

*Backhoe specifications are with 24-in. x 7.5-cu. ft. (610 mm x 0.21 m³) bucket.
**315SG Backhoe Loader**

**Key:**  ● Standard equipment  ▲ Optional or special equipment

### Engine
- John Deere Model 4045T – 4.5 liter, 84 SAE net hp turbocharged, isolation mounted
- Vertical spin-on engine oil filter
- Vertical spin-on fuel filter with water separator
- Vertical spin-on secondary fuel filter
- Oil-to-water engine oil cooler
- Antifreeze, –34°F (–37°C)
- Coolant recovery tank
- Serpentine belt with automatic belt tensioner
- Sucker-type cooling fan
- Enclosed safety fan guard
- ▲ High ambient temperature engine cooling
- Dual-element dry-type air cleaner
- Muffler, underhood with curved-end exhaust stack
- ▲ Chrome exhaust extension
- ▲ Electric after starting aid
- ▲ Engine coolant heater, 1,000 watts

### Power Train
- Poweshift transmission with torque converter: Four forward, three reverse speeds / Isolation mounted to mainframe
- ▲ Transmission with poweshift reverser and torque converter: Fully synchronized four forward, four reverse speeds / Isolation mounted to mainframe
- Transmission oil cooler
- Vertical spin-on transmission filter
- Electric forward-neutral-reverse control lever
- Multhead safety switch interlock
- Electric clutch cutoff on gearshift and loader levers
- Differential lock, electric foot-actuated
- Planetary final drives
- Power-assisted hydraulic service brakes (conform to SAE J1473): Inboard, wet multi-disc, self adjusting and self equalizing
- Parking/emergency brake with electric switch control (conforms to SAE J1473): Spring applied, hydraulically released wet multi-disc / Independent of service brakes
- Hydrostatic power steering with emergency manual mode
- Non-powered front axle
- Mechanical-front-wheel-drive with limited-slip differential: Electric on/off control / Drive-shaft guard / Sealed axle
- 11L-15 F3 front tires
- ▲ 11L-16 F3 front tires
- ▲ 12.5/80-18 traction front tires
- 16.9-24 R4 rear tires
- ▲ 19.5L-24 R4 rear tires
- ▲ Rear wheel spacers for use with chains

### Backhoe
- Backhoe with standard dipperstick, 14-ft. 6-in. digging depth
- Two-lever (Deere) backhoe controls
- ▲ Three-lever (Case) backhoe controls
- ▲ Four-lever (Ford) backhoe controls
- ▲ SAE excavator two-lever backhoe controls
- Backhoe transport lock lever
- Swing lock pin stored in operator’s station
- ▲ Stabilizer valve with two-direction anti-drift valves
- Pivoting stabilizers with dirt pads
- ▲ Pivoting stabilizers with reversible pads
- ▲ Extended stabilizers
- ▲ Stabilizer cylinder guards
- ▲ Less bucket, with bucket pins

### Backhoe (continued)
- ▲ Standard-duty backhoe bucket with lift loops
- ▲ Heavy-duty backhoe bucket with lift loops
- ▲ Severe-duty backhoe bucket with lift loops
- Backhoe coupler for “C,” “D,” “E,” and “G” Series
- John Deere buckets, Case buckets, and Cat buckets
- ▲ Extendable diggerstick, 3-ft. 6-in. extension
- ▲ Auxiliary backhoe valve for swingers, thumbs, etc.
- ▲ Auxiliary backhoe valve for hammers, compactors
- ▲ Auxiliary backhoe plumbing for swingers, compactors
- ▲ Auxiliary backhoe plumbing for swinging, thumbs, etc.
- ▲ SAE-controlled load-lowering device valves
- ▲ Extended stabilizers

### Hydraulic System
- 36-gpm (136 L/min.) tandem gear pump, open center system
- ▲ Independent hydraulic reservoir
- Swing-down hydraulic oil cooler
- ▲ “O”-ring face seal connectors
- ▲ 10-micron vertical spin-on filter

### Electrical
- 12-volt system
- 65-amp alternator
- Single battery with 190-min. reserve capacity and 950 CCA
- ▲ Dual batteries with 380-min. reserve capacity and 1,800 CCA
- ▲ Positive terminal battery cover
- ▲ Blade-type multi-fused circuits
- By-pass start safety cover on starter

### Lights
- Four halogen driving/work lights, 32,500 candlepower each (two front, two rear, and two side)
- Two front and two rear turn signal/flasher
- Two rear stop and tail
- Two rear reflectors
- ▲ Rotating beacon
- ▲ Lift guards*

### Operator’s Station
- Modular-design ROPS/FOPS canopy with molded roof (conforms to SAE J1040): Isolation mounted
- ▲ Left and right access
- ▲ Slip-resistant steps and ergonomically located handholds
- ▲ Molded floor mat
- Headliner
- ▲ Coat hook
- 12-volt outlets (2)

### Operator’s Station (continued)
- Built-in beverage holders
- ▲ Built-In Operator’s Manual storage compartment with manual
- ▲ Interior rearview mirror
- ▲ Outside rearview mirrors
- Hand throttle with fuel-economy setting at 2,100 rpm
- ▲ Suspended foot throttle
- ▲ Tilt steering
- ▲ Horn
- ▲ Key start switch with electric fuel shutoff
- ▲ Engine coolant temperature gauge, illuminated electronic, with audible warning
- ▲ Oil temperature gauge, illuminated electronic, with audible warning
- ▲ Fuel gauge, illuminated electronic
- ▲ Digital display of engine hours, engine rpm, and system voltage
- ▲ Monitor system with audible and visual warnings: Engine air restriction indicator / Engine oil pressure indicator with audible warning / Hydraulic filter restriction indicator / Parking brake on/off indicator with audible warning / Seat belt indicator / Low brake pressure
- ▲ Non-suspension vinyl swivel seat without armrests
- ▲ Air suspension fabric swivel seat with armrests, lumbar support, and adjustable backrest
- ▲ Suspension vinyl swivel seat with armrests, lumbar support, and adjustable backrest
- ▲ Suspension fabric swivel seat with armrests, lumbar support, and adjustable backrest
- ▲ 2-in. seat belt with retractor
- ▲ 3-in. seat belt with retractor
- Cab: Headliner, dome light, left and right cab doors, tinted safety glass, one rear and one front windshield wiper, fresh air intake heater/defroster/pressurizer (40,000-Btu/hr. [11.7 kW] heater), and 65-amp alternator standard / Front windscreen washer, air conditioning (26,000-Btu/hr. [7.6 kW] output and CFC-free R134a refrigerant), 95-amp alternator, and AM/FM/weatherband radio optional / 12-volt outlets (3)

### Overall Vehicle
- One-piece utilized construction mainframe
- Vehicle tie-downs, two front and one rear
- Remote grease bank for front axle
- Rigid-mounted front bumper
- ▲ 400-lb. (181 kg) front counterweight
- ▲ 650-lb. (295 kg) front counterweight
- ▲ 900-lb. (409 kg) front counterweight
- 1,150-lb. (522 kg) front counterweight
- 1,400-lb. (635 kg) front counterweight
- Fuel tank, 36 gal. (136 L), ground-level fueling
- ▲ Two-position easy-tilt hood
- ▲ Front grille screen
- ▲ Vandal protection for instrument panel, engine hood, toolbox, hydraulic reservoir, radiator, and fuel tank
- ▲ Reverse warning alarm: Switchable to 97 dB(A) or 111 dB(A)
- ▲ Dent-resistant full-coverage rear fenders
- ▲ Front fenders*
- ▲ SMV emblem
- ▲ Rental decal kit
- ▲ Special color paint*
- ▲ Bottom guard*

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Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 70 020, using No. 2-D fuel at 35 API gravity. No derating is required up to 10,000-ft. (3050 m). Gross power is without cooling fan.

Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE standards. Except where otherwise noted, these specifications are based on a unit with 16.9-28, 8 PR R4 rear tires; 11L-16, 12 PR F3 front tires; 1.30-cu. yd. (1.00 m³) loader bucket; and 24-in. x 7.5-cu. ft. (610 mm x 0.21 m³) backhoe bucket.

See your John Deere dealer for further information.