**Engine 315SG**

Type: John Deere 4045T – Turbocharged

Maximum rated power: 89 SAE gross hp (66 kW) / 84 SAE net hp (63 kW) @ 2,000 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: 273 lb.-ft. (369 Nm)

Lubrication: Pressure system with spin-on filter and cooler

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</th>
<th>Forward</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.8 mph (6.1 km/h)</td>
<td>4.2 mph (6.8 km/h)</td>
</tr>
<tr>
<td>2</td>
<td>6.3 mph (10.1 km/h)</td>
<td>7.0 mph (11.3 km/h)</td>
</tr>
<tr>
<td>3</td>
<td>15.3 mph (24.6 km/h)</td>
<td>17.1 mph (27.5 km/h)</td>
</tr>
<tr>
<td>4</td>
<td>25.8 mph (41.5 km/h)</td>
<td>28.8 mph (46.3 km/h)</td>
</tr>
</tbody>
</table>

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

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

**Final Drives**

<table>
<thead>
<tr>
<th>Gear</th>
<th>Forward</th>
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<tr>
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</tr>
<tr>
<td>4</td>
<td>25.8 mph (41.5 km/h)</td>
<td>28.8 mph (46.3 km/h)</td>
</tr>
</tbody>
</table>

**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 axle

11 ft. 9 in. (3.57 m)

Without brakes: 13 ft. 3 in. (4.04 m)

Bucket clearance circle with brakes: 31 ft. 6 in. (9.61 m)

Without brakes: 34 ft. 7 in. (10.55 m)

Steering wheel turns, stop to stop: 2.3 to 3.0

Mechanical-front-wheel-drive

10 ft. 11 in. (3.43 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**

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backhoe</td>
<td>3,625 psi (25 000 kPa)</td>
</tr>
<tr>
<td>Loader</td>
<td>3,625 psi (25 000 kPa)</td>
</tr>
<tr>
<td>Pump</td>
<td>gear type, tandem with unloader</td>
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**Axle ratings (SAE J43)**

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<th>Rear</th>
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**Electrical system**: 12 volt with 65-amp alternator

**Sucker-type cooling fan**

**Hydrostatic power steering and emergency steering conform to ISO5010**

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

**Transmission**

**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)

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Hydrostatic power steering and emergency steering conform to ISO5010

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<table>
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<tr>
<th>Rear</th>
<th>14,700 lb. (6670 kg)</th>
</tr>
</thead>
</table>
**Backhoe Buckets**

- **Standard duty**: 24 in. (610 mm) 7.5 cu. ft. (0.21 m³) 350 lb. (159 kg)
- **Heavy-duty long lip**: 92 in. (2340 mm) 1.30 cu. yd. (1.00 m³) 1,050 lb. (476 kg)
- **Severe duty with lift loop**: 18 in. (457 mm) 5.1 cu. ft. (0.14 m³) 362 lb. (164 kg)
- **Ditch cleaning**: 36 in. (914 mm) 12.5 cu. ft. (0.35 m³) 510 lb. (231 kg)

**Loader Buckets**

- **Heavy-duty long lip**: 24 in. (610 mm) 7.5 cu. ft. (0.21 m³) 425 lb. (191 kg)
- **Multipurpose**: 30 in. (762 mm) 10.0 cu. ft. (0.28 m³) 475 lb. (215 kg)

**Cylinders**

<table>
<thead>
<tr>
<th>Type</th>
<th>Bore (in.)</th>
<th>Stroke (in.)</th>
<th>Rod (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loader boom (2)</td>
<td>3.15 (80 mm)</td>
<td>31.1 (790 mm)</td>
<td>1.97 (50 mm)</td>
</tr>
<tr>
<td>Loader bucket (1)</td>
<td>3.15 (80 mm)</td>
<td>33.7 (856 mm)</td>
<td>1.77 (45 mm)</td>
</tr>
<tr>
<td>Backhoe boom (1)</td>
<td>4.72 (120 mm)</td>
<td>31.3 (795 mm)</td>
<td>2.20 (56 mm)</td>
</tr>
<tr>
<td>Backhoe crowd (1)</td>
<td>4.53 (115 mm)</td>
<td>23.9 (607 mm)</td>
<td>2.48 (63 mm)</td>
</tr>
<tr>
<td>Backhoe bucket (1)</td>
<td>3.54 (90 mm)</td>
<td>31.9 (810 mm)</td>
<td>2.20 (56 mm)</td>
</tr>
<tr>
<td>Backhoe swing (2)</td>
<td>3.54 (90 mm)</td>
<td>10.9 (278 mm)</td>
<td>1.97 (50 mm)</td>
</tr>
<tr>
<td>Backhoe extendable dipperstick (1)</td>
<td>2.76 (70 mm)</td>
<td>42.0 (1067 mm)</td>
<td>1.77 (45 mm)</td>
</tr>
<tr>
<td>Backhoe stabilizer (2)</td>
<td>3.54 (90 mm)</td>
<td>19.7 (500 mm)</td>
<td>1.97 (50 mm)</td>
</tr>
<tr>
<td>Steering (1) non-powered axle</td>
<td>1.97 (50 mm)</td>
<td>9.49 (241 mm)</td>
<td>0.98 (25 mm)</td>
</tr>
<tr>
<td>Steering (1) MFWD</td>
<td>2.56 (65 mm)</td>
<td>8.27 (210 mm)</td>
<td>1.42 (36 mm)</td>
</tr>
</tbody>
</table>

**Tires**

<table>
<thead>
<tr>
<th>Type</th>
<th>Rear</th>
<th>Front</th>
</tr>
</thead>
<tbody>
<tr>
<td>With non-powered front axle</td>
<td>16.9-24, 8 PR R4</td>
<td>11L-15, 8 PR F3</td>
</tr>
<tr>
<td>With mechanical-front-wheel-drive</td>
<td>16.9-28, 10 PR R4</td>
<td>11L-16, 12 PR F3</td>
</tr>
</tbody>
</table>

**SAE Operating Weights**

- **Standard**: 14,700 lb. (6670 kg)
- **Cab adds**: 580 lb. (263 kg)
- **Mechanical-front-wheel-drive with tires adds**: 485 lb. (220 kg)
- **Extendable dipperstick excluding required counterweight adds**: 490 lb. (222 kg)
- **Optional 400-lb. counterweight adds**: 400 lb. (181 kg)
- **Optional 650-lb. counterweight adds**: 650 lb. (295 kg)
- **Optional 250-lb. bolt-on counterweight adds**: 250 lb. (113 kg)
- **Backhoe bucket coupler adds**: 138 lb. (63 kg)

**Backhoe Performance**

<table>
<thead>
<tr>
<th>Type</th>
<th>Working Width</th>
<th>Heaped Capacity</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backhoe*</td>
<td>92 in. (2340 mm)</td>
<td>1.30 cu. yd. (1.00 m³)</td>
<td>1,050 lb. (476 kg)</td>
</tr>
<tr>
<td>Retracted</td>
<td>82 in. (2080 mm)</td>
<td>1.18 cu. yd. (0.91 m³)</td>
<td>1,450 lb. (658 kg)</td>
</tr>
<tr>
<td>Extended</td>
<td>86 in. (2180 mm)</td>
<td>1.25 cu. yd. (1.06 m³)</td>
<td>1,450 lb. (658 kg)</td>
</tr>
<tr>
<td>Lifted</td>
<td>92 in. (2340 mm)</td>
<td>1.32 cu. yd. (1.01 m³)</td>
<td>1,550 lb. (703 kg)</td>
</tr>
</tbody>
</table>

**Backhoe Buckets**

<table>
<thead>
<tr>
<th>Type</th>
<th>Width (in.)</th>
<th>Capacity</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard duty</td>
<td>24 in. (610 mm)</td>
<td>7.5 cu. ft. (0.21 m³)</td>
<td>350 lb. (159 kg)</td>
</tr>
<tr>
<td>Heavy duty with lift loop</td>
<td>18 in. (457 mm)</td>
<td>3.3 cu. ft. (0.09 m³)</td>
<td>295 lb. (134 kg)</td>
</tr>
<tr>
<td>Severe duty with lift loop</td>
<td>18 in. (457 mm)</td>
<td>5.1 cu. ft. (0.14 m³)</td>
<td>335 lb. (152 kg)</td>
</tr>
<tr>
<td>Ditch cleaning</td>
<td>36 in. (914 mm)</td>
<td>12.5 cu. ft. (0.35 m³)</td>
<td>510 lb. (231 kg)</td>
</tr>
</tbody>
</table>
*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.
**Backhoe**

### Backhoe 315SG

#### Lift Capacity with Quick-Coupler/Forks

- **A** Maximum height .................................................................5,038 lb (2287 kg)
- **B** Maximum reach .................................................................7,462 lb (3388 kg)
- **C** At ground line .................................................................9,853 lb (4473 kg)
- **D** Below ground line .............................................................4.4 in (112.7 mm) to bottom of tine / 2.7 in (68.3 mm) to top of tine

#### Loader Performance with Bucket Options

<table>
<thead>
<tr>
<th>Bucket Options</th>
<th>Retracted</th>
<th>Extended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.30-cu. yd.</strong> (1.00 m³) Heavy-Duty Long Lip</td>
<td>single lever</td>
<td>single lever</td>
</tr>
<tr>
<td><strong>1.18-cu. yd.</strong> (0.91 m³) Multipurpose</td>
<td>single lever</td>
<td>single lever</td>
</tr>
<tr>
<td><strong>1.25-cu. yd.</strong> (0.96 m³) Multipurpose</td>
<td>single lever</td>
<td>single lever</td>
</tr>
<tr>
<td><strong>1.32-cu. yd.</strong> (1.01 m³) Multipurpose</td>
<td>single lever</td>
<td>single lever</td>
</tr>
</tbody>
</table>

- **Operator control** ..............................................................single lever
- **Breakout force** .................................................................8,900 lb (39.6 kN)
- **Lifting capacity, full height** ...........................................7,200 lb (3266 kg)
- **Reach to bucket hinge pin, maximum** .............................11 ft 2 in (3.40 m)
- **Dump clearance, bucket at 45 degrees** ............................8 ft 8 in (2.64 m)
- **Bucket dump angle, maximum** .........................................45 degrees
- **Reach at full height, bucket at 45 degrees** .......................30.1 in (765 mm)
- **Rollback angle at ground level** ........................................40 degrees
- **Digging depth below ground, bucket level** .......................8.1 in (206 mm)
- **Raising time to full height** ..............................................4.9 sec.
- **Bucket dump time** ...........................................................1.1 sec.
- **Bucket lowering time (power down)** ...............................1.9 sec.

#### Backhoe Specifications

- **E** Digging depth (SAE):
  - (1) 2-ft. (610 mm) flat bottom ........................................13 ft 11 in (4.24 m)
  - (2) 8-ft. (2440 mm) flat bottom ........................................12 ft 11 in (3.94 m)
- **F** Ground clearance, minimum ..........................................13.8 in (350 mm)
- **G** Bucket rotation ...............................................................190 degrees
- **H** Transport height ..............................................................12 ft (3.67 m)
- **I** Overall length, transport ................................................17 ft 3 in (5.26 m)
- **J** Side-shift from tractor centerline ....................................22.9 in (582 mm)
- **K** Wall to swing centerline ..................................................22.8 in (580 mm)
- **L** Stabilizer width – transport with ROPS .........................7 ft 7 in (2.32 m)
- **M** Overall width (less loader bucket) ...............................91 in (2.32 m)
- **N** Stabilizer overall width – operating ...............................7 ft 7 in (2.32 m)

*Backhoe specifications are with 24-in. x 7.5-cu. ft. (610 mm x 0.21 m³) bucket.
**Key:**  ● Standard equipment  ▲ Optional or special equipment

### Engine
- John Deere Model 404ST – 4.5 liter, 84 SAE net hp turbocharged, isolation mounted
- Vertical spin-on engine oil filter
- Vertical spin-on John Deere fuel filter with water separator
- 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 ether starting system
- Engine coolant heater, 1,000 watts

### Power Train
- Powershift transmission with torque converter:
  - Four forward, three reverse speeds / Isolation mounted to mainframe
- Transmission with powershift 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 with neutral 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, 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
- 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 dipperstick, 3-ft. 6-in. extension
- Auxiliary backhoe valve for swingers, thongs, etc.
- Auxiliary backhoe valve for hammers, compactors
- Auxiliary backhoe plumbing for swingers, thongs, etc.
- SAE-controlled load-lowering device valves
- Extended stabilizers

### Loader
- Hydraulic self leveling
- Return-to-dig feature
- Single-lever control with electric clutch cutoff switch
- Bucket-level indicator
- Loader boom service lock
- Ride control
- Auxiliary loader hydraulics with two-lever control
- Hydraulic coupler for buckets, forks, etc.
- Less bucket, with bucket pins
- Heavy-duty loader buckets with bolt-on cutting edges, skid plates, and lift loops
- Multipurpose loader buckets with bolt-on cutting edges, skid plates, and lift loops

### Hydraulic System
- 38-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
- 36-gpm (136 L/min.) tandem gear pump, open center system
- 10-micron vertical spin-on filter
- 755-420-0280 hydraulic reservoir
- 36.5 cu. ft. (1.02 m³) oil tank
- 360-gpm (1360 L/min.) hydraulic system
- 2900 psig (200 barg) hydraulic system
- 2500 psig (170 barg) hydraulic system
- 2100 rpm
- 2050 rpm
- 1900 rpm
- 12-volt system
- 65-amp alternator
- Single battery with 150-min. reserve capacity and 750CCA
- Dual batteries with 300-min. reserve capacity and 1,500CCA
- Positive terminal battery cover
- Blade-type multi-fused circuits
- By-pass start safety cover on starter

### Electrical
- 12-volt system
- 65-amp alternator
- Single battery with 150-min. reserve capacity and 750CCA
- Dual batteries with 300-min. reserve capacity and 1,500CCA
- Positive terminal battery cover
- Blade-type multi-fused circuits
- By-pass start safety cover on starter
- 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.

### Operator’s Station
- Foot throttle with fuel-economy setting at 2,100 rpm
- Suspension foot throttle
- Tilt steering
- Horn
- Key start switch with electric fuel shut off
- Tilt steering
- Horn
- Key start switch with electric fuel shut off
- 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 retractors
- 3-in. seat belt with retractors
- Cab: Headliner, dome light, left and right cab doors, tinted safety glass, one rear and one front windshield wiper, fresh air intake heater/defroster, 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)
- Quarter cab

### 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. (408 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
- Rigid-mounted front bumper
- Rigid-mounted front bumper
- Rigid-mounted front bumper
- Remote grease bank for front axle
- Remote grease bank for front axle
- Remote grease bank for front axle
- 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.

**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.