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310c John Deere Backhoe Specs

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John Deere 310C Backhoe Specs: A Comprehensive Guide to a Construction Classic

The **310c John Deere backhoe specs**represent a pivotal chapter in the history of compact construction equipment. For decades, the John Deere 310 series has been synonymous with reliability, versatility, and rugged performance on job sites ranging from residential landscaping to commercial infrastructure projects. The "C" model, introduced in the late 1980s and produced through the mid-1990s, continues to command respect among operators and equipment enthusiasts alike. Even today, a well-maintained 310C remains a staple on active work sites, rental fleets, and farm operations. In this article, we will explore every significant specification of the John Deere 310C backhoe loader, from engine output and hydraulic power to dimensions, weight, and operator comfort features. Whether you are considering a purchase, evaluating a used unit, or simply curious about this iconic machine, understanding the official specifications will help you appreciate why the 310C endures as a trusted workhorse.

Engine Performance and Powertrain

At the heart of the John Deere 310C backhoe lies a naturally aspirated, four-cylinder diesel engine. The powerplant is a John Deere 4239D, a proven industrial engine known for its durability and torque characteristics. This engine delivers a gross horsepower rating of approximately 75 horsepower (56 kW) at 2,500 rpm. The net horsepower, which accounts for parasitic losses from cooling fans, alternators, and other accessories, typically measures around 70 horsepower (52 kW). These figures place the 310C squarely in the competitive mid-range backhoe loader segment of its era.

The engine displacement is 3.9 liters (239 cubic inches), providing ample low-end torque for heavy digging and loading tasks. The 4239D is a direct-injection diesel engine, which improves fuel efficiency and cold-start reliability compared to indirect-injection designs. The engine's torque peak of approximately 200 lb-ft occurs at a relatively low 1,600 rpm, allowing operators to maintain lugging power without constant downshifting during tough digging conditions.

Cooling is managed by a gear-driven hydraulic fan, which reduces maintenance complexity compared to belt-driven alternatives. The fuel system uses a rotary injection pump, and the recommended fuel capacity is approximately 33 gallons (125 liters), providing enough range for a full day of demanding work on most job sites. The engine oil capacity, including filter, is about 10 quarts (9.5 liters), and John Deere recommends 15W-40 diesel engine oil for most operating conditions.

Transmission and Drive System

The John Deere 310C backhoe is equipped with a synchronized, four-speed forward and four-speed reverse transmission. This is a collar-shift manual transmission with helical-cut gears for quieter operation and smoother engagement. Top travel speed in fourth gear is approximately 24 mph (38.6 km/h), which allows for

relatively quick movement between job sites or around large construction projects.

Forward and reverse shuttle shifting is accomplished via a mechanical shuttle lever or, on later models, an optional power reverser. The power reverser option significantly improves operator productivity by allowing direction changes without clutching, especially during truck loading or backfilling cycles. The clutch is a single-stage, dry disc design, which is straightforward to service but requires proper adjustment for long service life.

The front axle is a non-oscillating, rigid-mounted design with planetary reduction in the hubs. Rear axle oscillation is provided by a trunnion-mounted design, allowing up to 15 degrees of oscillation to maintain traction on uneven terrain. Differential lock is available on both axles as either standard or optional equipment, depending on the specific configuration. Four-wheel drive was optional on the 310C and is highly desirable for work in soft ground, slopes, or muddy conditions. The four-wheel-drive system uses a mechanical engagement with a lever control in the cab.

Hydraulic System Specifications

Hydraulic performance is arguably the most critical aspect of any backhoe loader, and the **310c John Deere backhoe specs**in this area are robust for the machine's class. The 310C uses an open-center hydraulic system with a gear-type hydraulic pump. The main pump flow rate is approximately 31 gallons per minute (117 liters per minute) at 2,500 rpm. System pressure is set at 2,450 psi (169 bar), which provides ample force for digging, lifting, and auxiliary hydraulic functions.

Hydraulic fluid capacity for the system is approximately 26 gallons (98 liters). John Deere specifies either a high-quality 10W hydraulic oil or a multi-viscosity hydraulic fluid such as Hy-Gard or equivalent. The hydraulic filter is a full-flow, spin-on type that should be replaced at regular intervals to prevent contamination from damaging pumps and control valves.

Loader and backhoe functions are controlled by a single-spool control valve with separate sections for each circuit. The backhoe controls are typically two-lever, SAE-pattern operation, though some operators prefer the optional four-lever configuration for more precise control. The loader control is a single lever with integrated bucket curl, lift, and float functions.

Loader Specifications and Performance

The front loader on the John Deere 310C backhoe is a high-strength, box-section design that pairs well with the machine's overall weight and horsepower. The loader lift capacity to full height at the pivot pin is approximately 4,800 pounds (2,177 kg). However, the rated operating capacity at 35 degrees of articulation or at a specified load center distance will be lower, typically around 3,500 to 3,800 pounds depending on bucket selection and tire configuration.

Loader breakaway force is substantial for the machine size, measuring approximately 8,000 pounds (3,629 kg). This allows the 310C to aggressively load trucks, stockpile material, or dig into moderately compacted soil. Loader geometry provides a lift height of about 126 inches (3.2 meters) to the pivot pin and a dump clearance of roughly 102 inches (2.6 meters) with a standard bucket. Dump angle is approximately 45 degrees, which is adequate for clean material discharge from most buckets.

Standard loader bucket capacity ranges from 1.0 to 1.25 cubic yards (0.76 to 0.96 cubic meters), depending on whether a general-purpose or light-material bucket is installed. A bolt-on cutting edge is standard, and optional tooth bars or teeth can be added for more aggressive digging in hard soil or frost conditions.

Backhoe Specifications and Digging Performance

The backhoe attachment on the 310C is a heavy-duty, two-section boom design with a dipper stick that offers two pin positions for extended reach or higher digging force. The maximum digging depth with the standard

dipper stick is approximately 14 feet 4 inches (4.37 meters). This positions the 310C well within the typical depth requirements for utility trenching, foundation excavation, and drainage work.

Maximum reach from the pivot pin is approximately 17 feet 6 inches (5.33 meters), allowing the machine to place spoil well away from the trench edge, improving safety and work efficiency. Digging force at the bucket cylinder is approximately 10,500 pounds (46.7 kN), while the dipper stick digging force is around 7,200 pounds (32.0 kN). These figures are respectable for a backhoe of this vintage and allow the 310C to handle tough clay, compacted gravel, and frost conditions with reasonable productivity.

Backhoe bucket sizes range from 12 inches to 36 inches in width, with the most common size being 24 inches (0.61 meters). The bucket is equipped with a quick-attach coupler as standard, allowing fast bucket changes without leaving the cab. The backhoe swing arc is 180 degrees, providing a wide working range without needing to reposition the machine frequently. Stabilizer legs are spread approximately 11 feet (3.35 meters) apart, offering excellent stability during backhoe operations.

Dimensions and Operating Weights

Understanding the physical footprint of the John Deere 310C backhoe is essential for transport and job site planning. The overall length of the machine, measured from the backhoe bucket to the loader bucket in transport position, is approximately 20 feet 6 inches (6.25 meters). Overall width with standard tires is 7 feet 9 inches (2.36 meters), though this can vary slightly depending on rim width and tire selection.

Height to the top of the ROPS (Roll-Over Protective Structure) canopy or cab is approximately 8 feet 10 inches (2.69 meters). If the machine is equipped with a factory cab, the height may increase slightly to accommodate the air conditioning unit on the roof. Wheelbase is 7 feet 0 inches (2.13 meters), which contributes to a stable ride during transport and good balance during loader operations.

Ground clearance under the front axle is approximately 14 inches (356 mm), which is adequate for most construction and agricultural applications but can be a limitation in deep mud or rock fields. The operating weight of a standard John Deere 310C backhoe loader is approximately 13,500 to 14,500 pounds (6,124 to 6,577 kg), depending on whether the machine is equipped with four-wheel drive, a cab, and other options. A typical four-wheel-drive model with a cab and a 24-inch backhoe bucket weighs around 14,800 pounds (6,713 kg).

Operator Station and Comfort Features

The John Deere 310C backhoe was available in both open canopy and enclosed cab configurations. The factory cab, when equipped, features a steel roof with tinted glass, sliding side windows, and a rear window that opens for ventilation. Cab insulation provides moderate noise reduction, though the 310C is not a quiet machine by modern standards. Optional features included air conditioning, heater, and a radio-ready package.

The operator seat is a high-back, fully adjustable design that slides forward and backward and reclines. The seat is mounted on a suspension system that dampens vibrations from rough terrain and digging operations. Armrests are adjustable, and the backhoe control levers are mounted on the seat sides for a comfortable, fatigue-reducing posture during extended digging cycles.

Instrumentation is straightforward, including a fuel gauge, engine temperature gauge, tachometer, and warning lights for alternator, oil pressure, and air filter restriction. A key switch with a glow-plug cycle for cold starts is standard. Visibility from the operator station is good, with the loader arms designed to minimize blind spots during travel and truck loading.

Tires and Undercarriage Options

Tire selection on the 310C backhoe significantly affects traction, flotation, and stability. The standard tire size is

16.9-28 for the rear and 12.5-80-18 for the front, though radial tires such as 12.5-80-18 front and 16.9-28 rear are common upgrades. Agricultural tread patterns are standard, providing good traction in loose soil, while industrial tread options are available for improved durability on paved surfaces and rocky terrain.

Rims are 8-hole, split-style for easy tire mounting and dismounting. Tire pressure recommendations are typically 30 psi (2.07 bar) for the front and 30 psi for the rear, though lower pressures may be used for improved flotation in soft conditions. The 310C does not have central tire inflation, so adjusting pressure requires manual checking with a gauge.

Serviceability and Maintenance Considerations

The **310c John Deere backhoe specs**were designed with serviceability in mind. Daily maintenance points include checking engine oil, hydraulic fluid level, coolant level in the radiator, and tire pressure. The air cleaner is a dry-type, dual-element design with a restriction indicator that signals when cleaning or replacement is needed. Fuel filters are spin-on type and should be replaced every 500 hours or annually.

Engine oil and filter change intervals are 250 hours under normal conditions, though severe duty cycles may require more frequent changes. The hydraulic filter should be replaced every 1,000 hours, and hydraulic fluid should be sampled periodically to check for contamination. The cooling system uses a 50/50 mix of ethylene glycol antifreeze and water, with a capacity of approximately 6 gallons (22.7 liters).

One noteworthy service feature is the hinged engine side panels that allow easy access to the engine compartment for routine checks and adjustments. The battery is located in a sealed tray behind the engine, protected from dirt and moisture. The machine has a 12-volt electrical system with a 95-amp alternator, providing adequate charging capacity for accessories and cold-weather starting.

Common Applications and Work Capabilities

The John Deere 310C backhoe is a versatile machine that performs well in a variety of roles. In construction, it is commonly used for digging trenches for water, sewer, gas, and cable lines. The combination of loader and backhoe allows a single machine to excavate, back

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