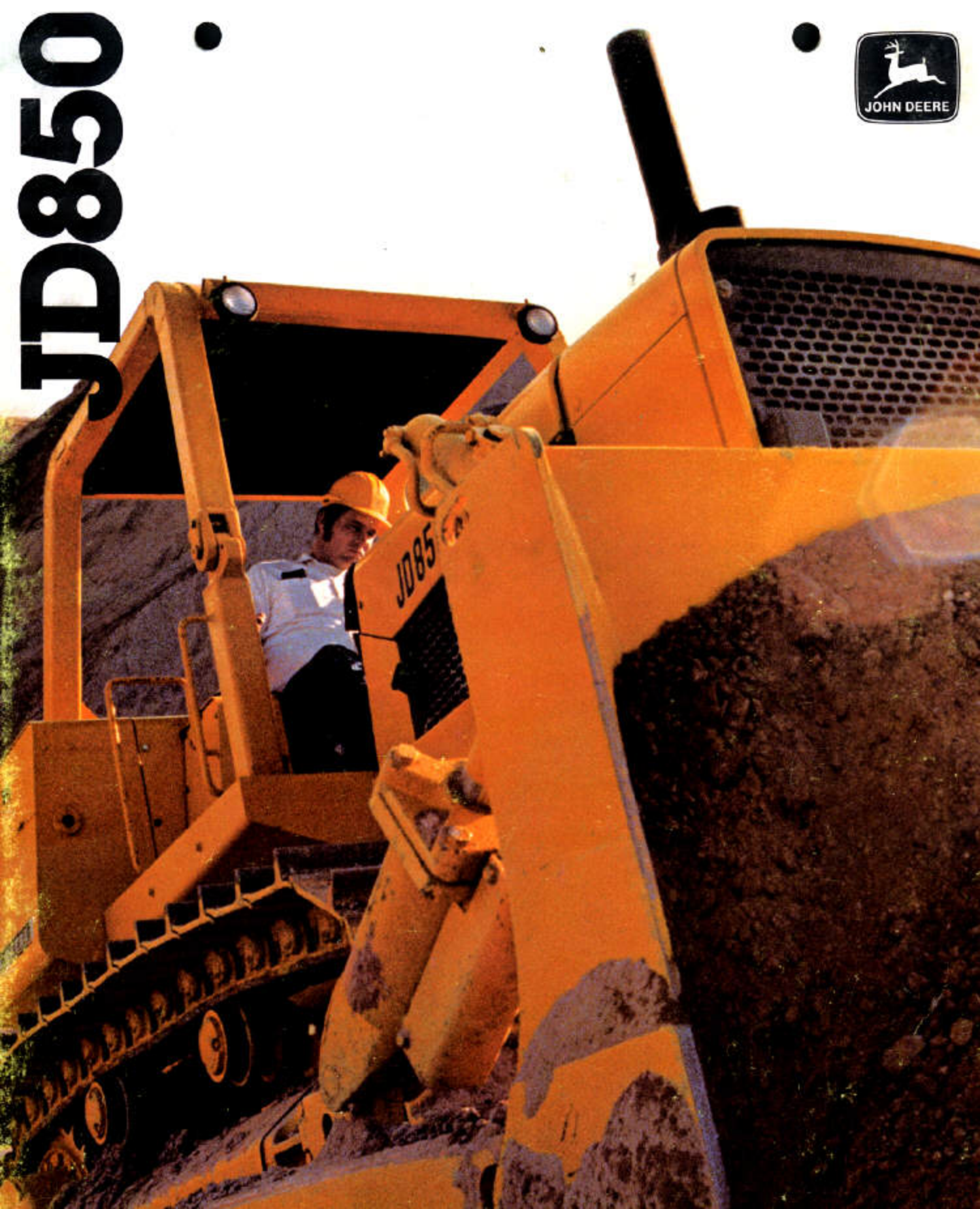
JD850

JOHN DEERE



Get ready for production: JD850 puts 145 hp behind hydrostatic drive

Pit hydrostatic drive against your toughest jobs with the JD850 Bulldozer. The JD850 puts 145 SAE net hp to work through the field-proved Dual-Path hydrostatic drive principle. All components are matched to JD850 engine power and anticipated job requirements.

You can choose either an angledozer or a straight blade with power tilt. With either machine you get the distinctive advantages of John Deere hydrostatic drive:

100% of available engine power goes to propel when hydraulics aren't in use.
A unique sensing system automatically adjusts machine speed as loads change.
Proportioned power to both tracks lets you power-turn under load. **Counter-rotating tracks** let you spot-turn.
Hydrostatic steering and braking let you forget about replacing steering clutches and brakes.

Those advantages, along with convenient maintenance points, easy operation, and vandalproofing, make the JD850 a dozer designed to be tough on the job but easy on you. Take a minute to read about the JD850, then try one yourself. You'll find that the proof of the JD850 is in your production.

Specifications

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with roll-over protective canopy, 20 in. (508 mm) grousers, and standard equipment.)

Power (@ 1800 engine rpm):	**SAE**	**DIN**
Gross	165 hp (123 kW*)	
Net	145 hp (108 kW)	147 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator and muffler. The gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500-ft. altitude and 85° F. temperature, and DIN 6270 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m.) altitude.

*In the International System of Units (SI), power is expressed in kilowatts (kW).

Engine: John Deere turbocharged diesel, 6-cylinder, 4-stroke cycle

Bore and stroke	5.12x5 in. (130x127 mm)
Piston displacement	619 cu. in. (10 144 cm^3)
Compression ratio	15.2 to 1
Maximum torque @ 1200 rpm	550 lb-ft (746 Nm) (76.1 kg-m)
NACC or AMA (U.S. Tax) horsepower	62.9
Main bearings	7
Lubrication	Pressure system w/full flow filter
Cooling	Pressurized w/thermostat and controlled bypass
Fan	Blower
Air cleaner	Dry dual stage, aspirated
Electrical system	24-volt w/alternator
Batteries (2)	Reserve capacity: 180 minutes

Transmission:

Cold weather starting . . . Disconnect clutch completely disengages hydrostatic drive and all hydraulics.

Split drive . . . . . Pressure-lubricated helical gears drive both hydrostatic transmissions, main hydraulic pump, winch driveshaft, and auxiliary pump drive.

Drive . . . . Dual-Path, fully automatic, infinitely variable hydrostatic transmissions.

Speeds . . . . Infinite from 0 to 6.5 mph (0 to 10.5 km/h) forward or reverse.

Control: Single-lever, variable speed, forward and reverse.

Drawbar pull:

Maximum drawbar pull . . . 65,000 lb. (291 kN) (29 484 kg) at 0.20 mph (0.33 km/h)

Steering:

Fully modulated, infinitely variable lever steering for live power turns and counterrotation. Pedal steering optional. No need for steering clutches or steering brakes.

Instrument gauges remain protected with two lockable plates that completely cover the panel.

A master electrical switch lets you shut off and lock all electrical power at the end of the day.

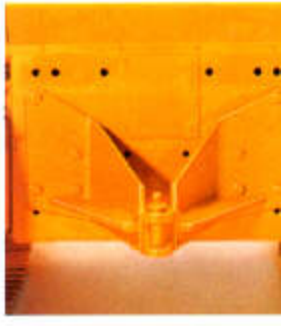
Attachments

Rear-mounted winch develops a maximum linepull of 60,000 pounds with bare drum.

Fuel cap locks keep vandals away from your fuel supply.

Your ignition key locks transmission filter compartment.

JD850 ripper gives you an 82-in. cut with three standard or five optional 21-in. teeth.



Optional drawbar for heavy pulls is available.

Optional fire extinguisher is within easy reach in case of an emergency.

Rubber mounting cushions between the frame and cab keep noise and vibration to a minimum for the operator. Optional heater and air conditioner also keep him comfortable.

Air filter, engine oil and radiator doors can all be locked up at night.

Vandalproofing and safety features

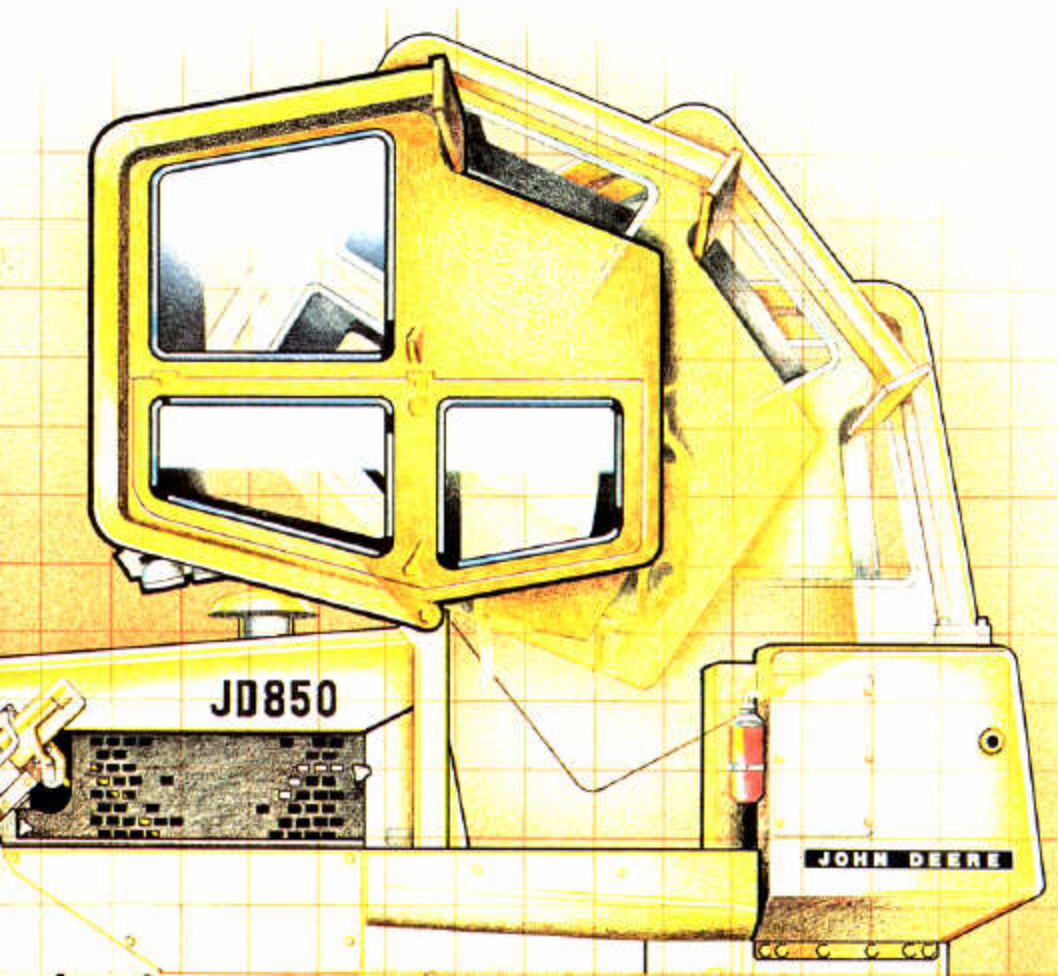
Batteries can be quickly checked by tipping the operator's seat forward.

Radiator coolant levels are checked through this door, also on the hood.

Transmission filters, either starting canister, and transmission reservoir filler cap are easily accessible from the right rear panel of the machine.

Air filter and engine oil checks can be made at this convenient door on the hood.

Sight gauges give you a quick reading of hydraulic and hydrostatic oil levels.



JD850 tilting cab provides easy access to drive system components.

Easy servicing helps keep JD850 on the job

You can easily adjust JD850 track tension with a conventional grease gun.

Daily maintenance and servicing ease are important to JD850 design. With daily checkpoints and major service areas easy to get to, machine maintenance can be done more quickly.

The radiator, engine oil, and air filter can be checked through two access doors on the hood. Sight gauges provide a quick reading on hydrostatic and hydraulic oil levels; filters are located behind a door to the right of the operator. Batteries can be checked by lifting the seat. Track adjustment is hydraulic, easily done with a grease gun.

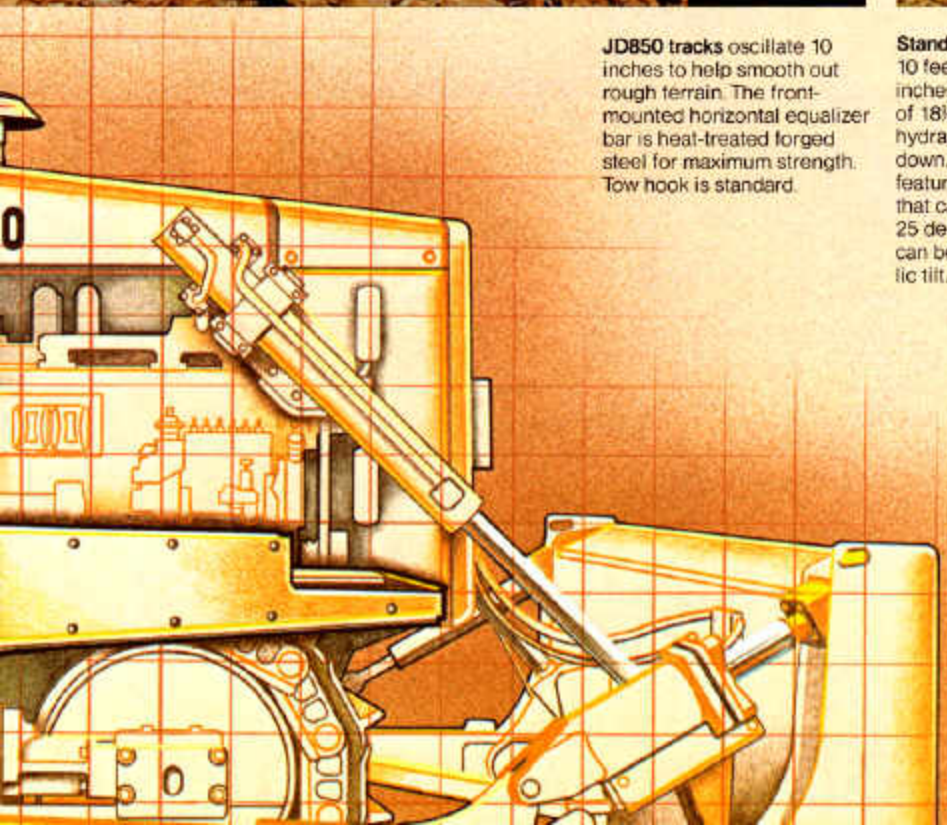
The JD850 cab also tilts forward to give you easy access to all hydraulic components of the drive system.

To protect against unnecessary trouble, the JD850 instrument panel, fuel cap, and all doors can be locked up at night. It's all aimed to keeping your JD850 where it belongs—on the job working for you.

The JD850 can be equipped with limb risers, roof extensions, heavy-duty grille plate, hydraulic reservoir guards, muffler collar, perforated side shields and increased hose protection for work in forestry.

JD850 tracks oscillate 10 inches to help smooth out rough terrain. The front-mounted horizontal equalizer bar is heat-treated forged steel for maximum strength. Tow hook is standard.

Standard 6545 blade (top) is 10 feet 3 inches wide, 44½ inches high, has penetration of 18½ inches, and tilts hydraulically 15 inches up or down. The 6540 angledozer features a 12-foot 8-inch blade that can be angled up to 25 degrees left or right, and can be equipped with hydraulic tilt.



Unitized main-frame delivers maximum strength without excess weight.

Here's design integrity from the inside out

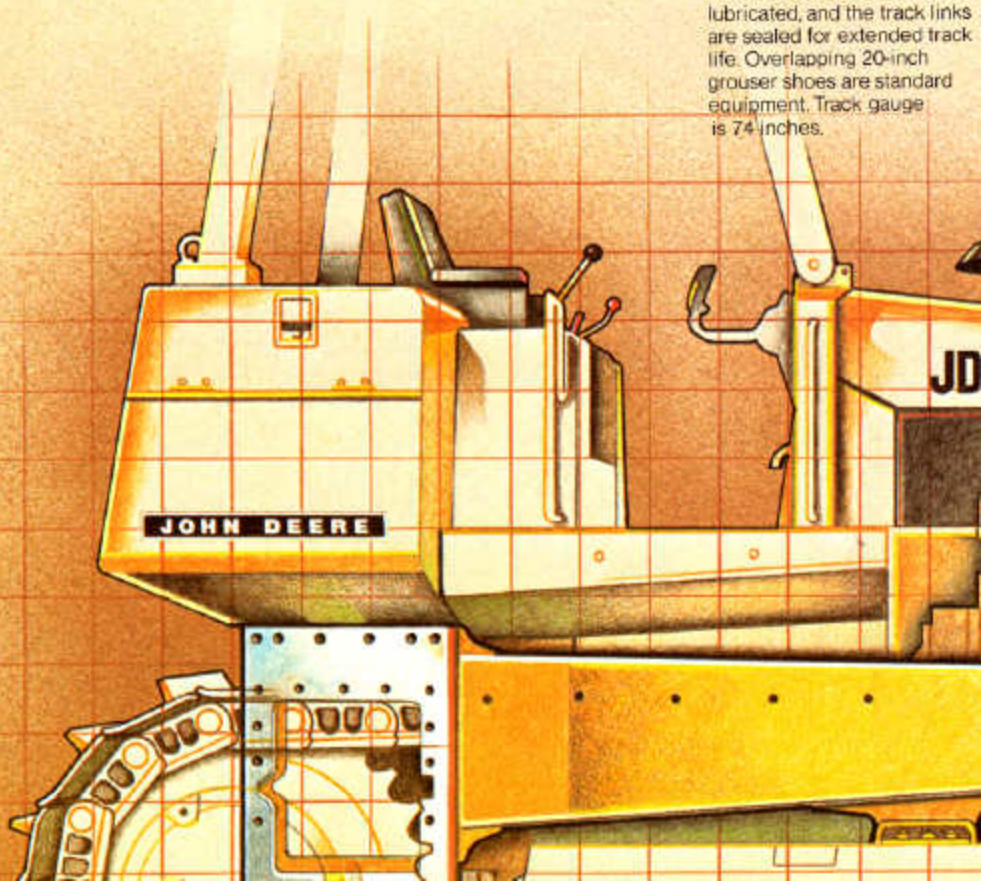
JD850 cabs go through extensive vibration tests on the "shaker table" at our test center in Dubuque, Iowa.

The unitized mainframe is the heart of the JD850 "inside" story. Its box-section construction gives it maximum required strength without excess weight.

The frame carries the radiator, engine, hydraulic components, front equalizer bar, ROPS, track oscillation, transmission, and final drive housings.

A look at the back of the frame shows the milled and tapped fittings for mounting attachments. It also shows the easy access servicemen enjoy for servicing the components it carries.

Rollers and idlers are lifetime lubricated, and the track links are sealed for extended track life. Overlapping 20-inch grouser shoes are standard equipment. Track gauge is 74 inches.



JD850 puts you in complete control with simple, efficient design

From the first time you step onto a JD850 you'll realize that it's designed for comfort, visibility and operating ease.

Handholds on the left and right help lift you to the walk-through operator's area. Once there, a fully adjustable, cushioned armchair seat places you in a position of complete control. You'll see that levers were placed by designers who know dozer operation firsthand.

To your left, starting next to the seat, you find the neutral safety lock lever, forward-reverse speed control lever, automatic control valve disconnect, and throttle. Before starting, the safety lock lever must be in the up (locked) position. After setting the throttle, all you do to put the JD850 in motion is push the safety lock down and move the speed control lever ahead to go forward or pull it back to reverse. The farther you move it in either direction the faster you can go. Since braking is done hydrostatically, all you do to slow down is move the lever toward the neutral position. It's that easy.

To your right is the blade control and auxiliary lever for winch, ripper or other attachments. Control positions produce parallel responses in the blade or equipment. Push it ahead to lower the blade, pull back to raise it; tilt the blade left or right by tilting the lever left or right. Push the lever all the way forward to put the blade into automatic float.

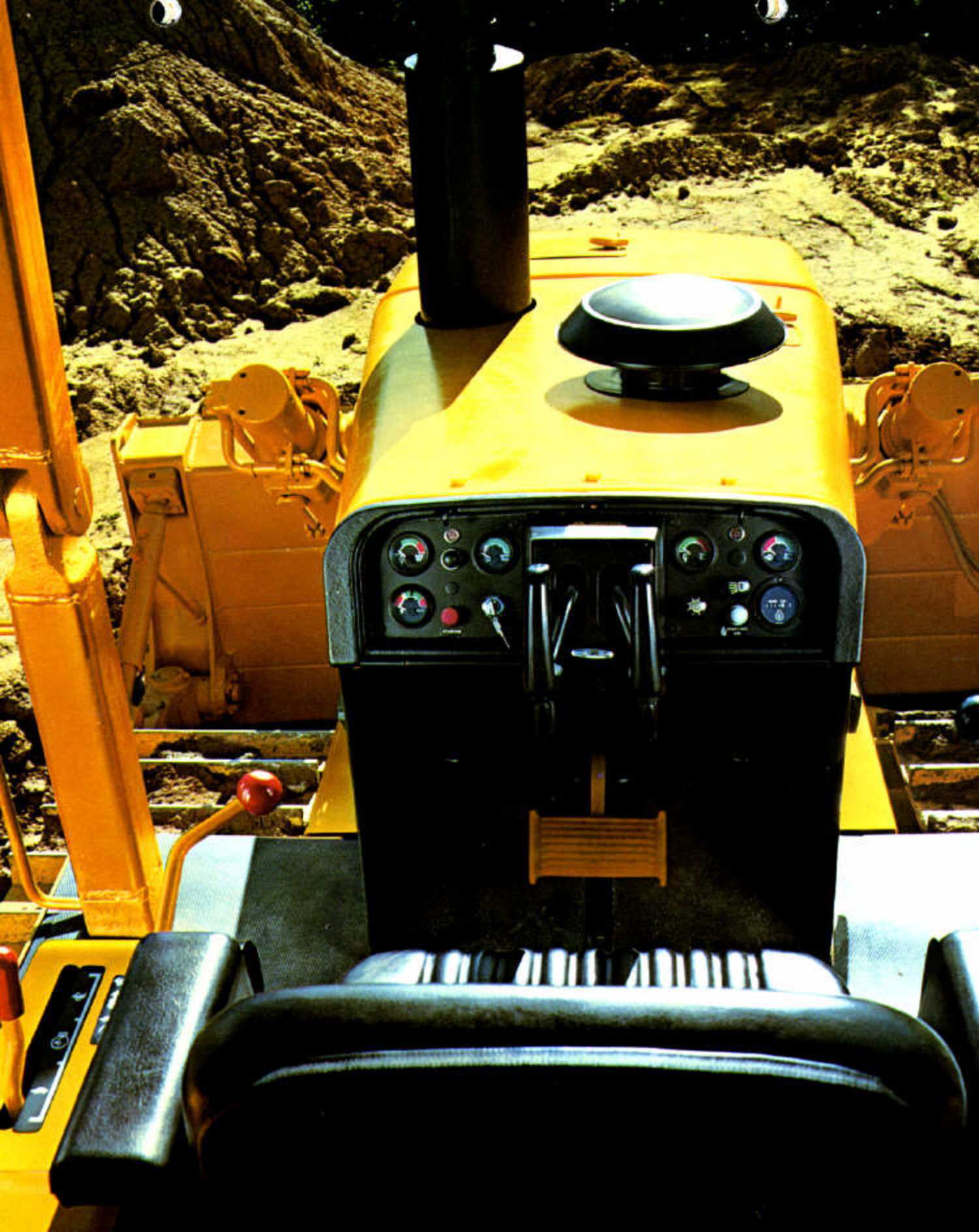
Steering levers (pedals optional) are, of course, straight ahead of you, placed in the center of the neatly arranged dash. The levers give you independent control of each track, and

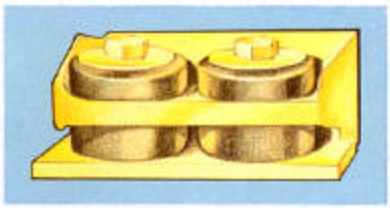
when either is pulled all the way back you get track counterrotation.

The JD850 instrument panel features nonglare, universal-symbol gauges for engine and transmission oil pressures and temperatures, plus hourmeter and voltmeter. Indicator lights monitor transmission oil filters and equipment hydraulics. A push-button starter, cold-weather starting aid button, key switch, parking brake lock, cigaret lighter, and light switches complete the panel.

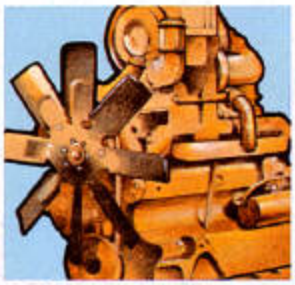
For added comfort you can equip your JD850 with optional pressurized cab, air conditioning, heater, and suspension armchair seat.

For demanding work day after day you owe yourself the comfort and convenience of the JD850. Its features pay off in smoother, faster operation, which ultimately pays off in more production for you.





Isolation mounting of the JD850 engine cuts noise and vibration.



JD850 619-cubic-inch engine.

Oil-to-air cooler (left) is located next to radiator.

John Deere power keeps the JD850 running smooth

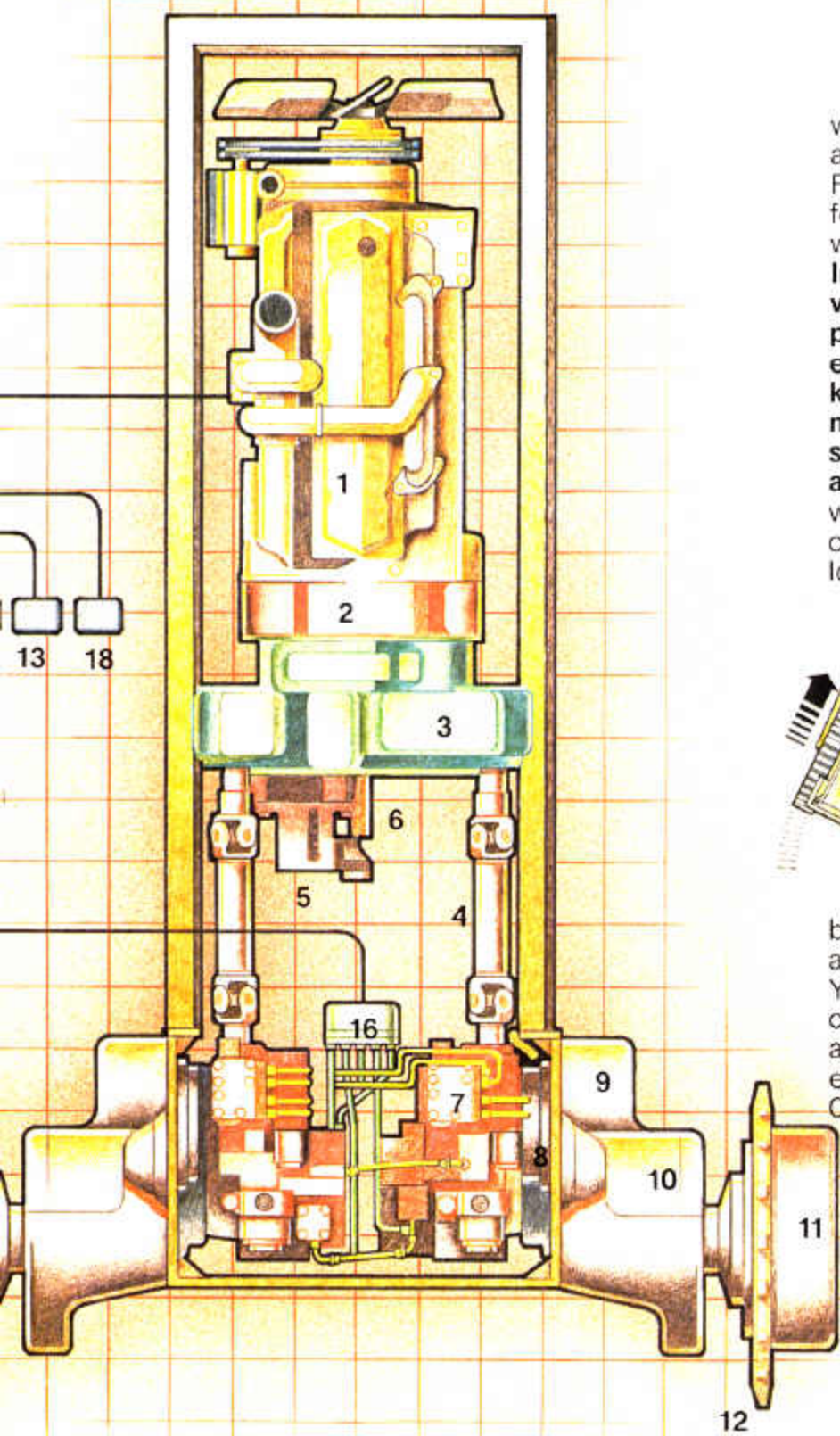
Power for the JD850 is produced by a 6-cylinder John Deere turbocharged diesel engine. Like all John Deere engines, the JD850's 619-cubic-inch diesel is designed to run cool and quiet.

Quietness is designed into the engine, not just added by sound suppressing equipment. Isolation mounting of the engine to the frame further quiets the JD850 power source and reduces vibration. And that quietness is teamed with the efficiency of fuel injection and the durability of special plasma processing of compression rings.

The JD850 engine is kept cool by a pressurized oil spray system that cools piston undersides and cylinder walls. In addition, a heavy-duty water pump circulates 150 gpm for efficient cooling under all operating conditions.

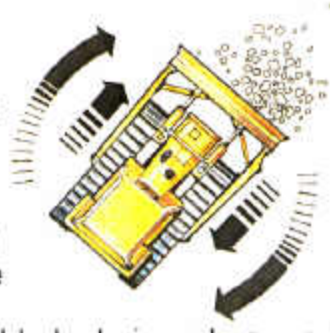
Up front, an oil-to-air oil cooler keeps the 40-gallon JD850 hydrostatic drive system at temperatures under 200 degrees F, even in 125-degree ambient temperature. Its unique design and installation permits independent removal of either the cooler or engine radiator.

Count on cool, quiet power to back up the JD850 on all kinds of jobs, in all kinds of conditions.

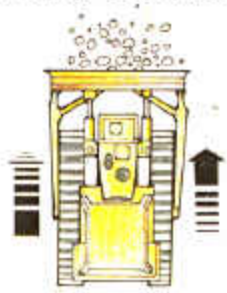


way back or depressing a pedal nearly all the way down stops the track. Further pressure reverses the track for counterrotation and spot turning when desired.

Infinitely variable power to either track keeps you moving straight ahead even when you're corner-loading the blade during a heavy cut.



You can counteract the resistance on the loaded side of the machine to maintain uniform speed on both tracks. **Infinitely variable power turns improve machine traction** on unstable soils and increase maneuverability when you're backfilling or spreading material in and around buildings or other obstacles.



You get infinite control of speed and power for each track—from 0 to 6.5 miles per hour—forward or reverse. **Independent counterrotating tracks increase overall production** because you can spot-turn the unit within its own length for better maneuverability.

John Deere hydrostatic drive is far more than a system for simply transmitting power

Although hydrostatic drive has been around for some time, it is only in recent years that John Deere has raised the principle to a new high potential by successfully introducing crawler loaders and bulldozers with automatic travel speed compensation in response to changing work demands.

The John Deere Dual-Path hydrostatic system simplifies dozer operation by letting the machine do more.

Here's the way JD850 gets the work done for you:

Power from the 145-SAE-net-horsepower turbocharged diesel engine (1) goes through an **engine cold-weather disconnect clutch (2)** to the **splitter drive (3).** The splitter drive transmits it mechanically through **two driveshafts (4).** The constant-mesh, helical-gear splitter drive is pressure lubricated and self contained. It also provides power for the **equipment hydraulic pump (5)** and the **winch drive (6).**

The driveshafts have in-line vibration dampers to reduce torsional stress. Each shaft powers a **reversible, variable-displacement hydrostatic pump (7).** Each pump powers a **variable-displacement hydrostatic motor (8).** This combination provides speeds from 0 to 6.5 miles per hour for each track—forward and reverse.

Power from each motor goes through the **parking brakes (9)** to **pinion and bull gears (10),** the **planetary final drives (11),** and out to the **sprockets (12)** and tracks.

Parking brakes are automatically applied when the engine is stopped. Depressing the **center pedal (13)** also applies the parking brakes and returns the forward-reverse speed control lever to neutral.

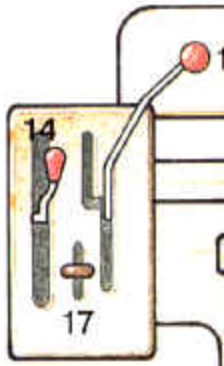
Engine rpm is controlled by a **hand throttle (14).** Normally, this is set when the operator begins work. Travel speed, which is infinitely variable, is selected by the **forward-reverse speed control lever (15).** When the lever is in the center position, the machine is hydrostatically locked in neutral.

Pushing it forward moves the machine forward. Pulling it back beyond neutral reverses the unit. The farther the lever is moved beyond neutral—forward or reverse—the faster the machine can go in that direction. Speeds are infinitely variable up to the point you set the lever.

The **automatic control valve (16)** constantly monitors engine rpm, equipment hydraulic demands, ground speed, and tractive effort. Through this monitoring, speed and tractive effort are constantly adjusted to the load—reducing speed as the load increases, increasing it as the load decreases—always at the optimum moment.

The **automatic control valve disconnect (17)** gives you manual control of the drive system if it should ever be necessary. The primary purpose of this disconnect is so you can operate the machine immediately during extremely cold weather, before hydraulic oil is warmed up.

Steering (18) is controlled by levers or optional pedals. Pulling back on either lever or depressing a pedal slows down the hydrostatic drive on one side and allows for live power turns. Pulling a lever nearly all the



Brakes:
Service ..... Hydrostatic
Parking ..... Wet-disk brakes are automatically applied when engine is stopped, or manually applied with center foot pedal during normal operation

Hydraulic System: Open-center
Control ..... Single-lever, two-function control
Pump ..... Vane, 46 gpm (174 L/min) @ rated engine speed
Pressure ..... 2000 psi (137.9 bar) (140.6 kg/cm²)

Hydraulic Cylinders:

Model 6545	Bore	Stroke
Lift, two	4.25 in. (108 mm)	34.41 in. (874 mm)
Tilt, one	6.25 in. (159 mm)	4.41 in. (112 mm)
Cylinder rods	Ground, heat-treated, chrome-plated, polished	
Cylinder pivot pins	Hardened steel (replaceable bushings)	

Model 6540		
Lift, two	4.25 in. (108 mm)	33.32 in. (859 mm)
Tilt, two	5.5 in. (140 mm)	4.33 in. (110 mm)
Cylinder rods	Ground, heat-treated, chrome-plated, polished	
Cylinder pivot pins	Hardened steel (replaceable bushings)	

Tracks (6-roller track frame w/front and rear track guides and sprocket guard):
Grouser ..... 20 in. (508 mm)
Track shoes, each side 37
Ground contact area ..... 3800 sq. in. (24 516 cm²)
Ground pressure ..... 9.68 psi (0.67 bar) (0.68 kg/cm²)
Length of track on ground ..... 95 in. (2.41 m)
Track gauge ..... 74 in. (1.88 m)
Oscillation ..... 10 in. (254 mm)
Carrier rollers ..... 2 each side
Adjustment ..... Hydraulic
Minimum ground clearance ..... 16.4 in. (417 mm)

Blade:
Cutting edge 3-piece
Center section ..... 0.75 in. (19 mm)
End bits, boron steel ..... 0.75 in. (19 mm)

Capacities:	U.S.	Imp.	Liters
Cooling system	9 gal.	7.5 gal.	34.0
Fuel tank	82 gal.	68.3 gal.	310.4
Crankcase	32 qt.	26.7 qt.	30.3
Crankcase, including filter	34 qt.	28.3 qt.	32.2
Splitter drive	1.5 gal.	1.3 gal.	5.7
Final drive, each			
Inner compartment	5.5 gal.	4.6 gal.	20.8
Outer compartment	3.5 gal.	2.9 gal.	13.2
Hydraulic system	35 gal.	29.2 gal.	132.5
Hydrostatic drives	40 gal.	33.3 gal.	151.4

Additional Standard Equipment:
Enclosed alternator w/solid state regulator • Bottom guards • Cushioned seat w/armrests • Key switch • Push-button starting • Electric hourmeter • Cigaret lighter • Vandal protection • Muffler • Ether starting aid • Master electrical disconnect switch • Toolbox • Transmission neutral lock with starter safety switch • Horn • Air cleaner restriction indicator • ROPS canopy w/seat belt

SAE Operating Weight w/ROPS 36,785 lb. (16 685 kg)

Special Equipment:
Hydraulics for rear-mounted equipment • Selector valve • Limb risers for ROPS Canopy • Brush screens • Fire extinguisher • Front pull hook • Fixed drawbar • Cab w/pressurizer and heater • Lexan® windshield w/wiper • Windshield washer • Pedal steering • Suspension seat w/armrests • Air conditioner • Oil sampling test kit • 22 in. (457 mm) grouser shoes • 24 in. (610 mm) grouser shoes • Engine coolant heater • Cupped end bits • Reverse warning alarm • 3 in. (76 mm) seat belt • Center track guards

Engine Performance