

GR8MOD



COMPLETE FEATURE GUIDE

CATERPILLAR D11T

Every system, switch, screen and setting · by Grade8

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This guide explains every system on the GR8MOD D11T, every switch, key, knob and pedal in the cab, both cab screens, and how to get the best out of the machine. For installation and a quick start, see "GR8MOD D11T - READ ME FIRST.pdf". For the radio, see "GR8MOD D11T - Cab Radio Guide.pdf".

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1. The machine



104,236 kg of fully physical machine



Without and with the node / beam view: a real structure under the skin



Elevated sprocket, physical track chain, rollers and bogies

The GR8MOD D11T is a Caterpillar D11T crawler dozer built as a fully physical BeamNG vehicle:

- Elevated-sprocket undercarriage with real track chains that wrap around toothed sprockets, front and rear idlers and track rollers. Recoil springs keep the tracks tight, and the track roller frames oscillate so the tracks follow uneven ground.

- Clutch / brake steering like the real machine, a torque converter and a 3-speed planetary powershift transmission.
- A C32 V12 diesel with real engine temperatures, a cold-start routine, and exhaust smoke that is light at idle and turns dark when the engine is working hard.
- An 11SU semi-universal dual-tilt blade (raise / lower, tilt, pitch) and a single-shank or multi-shank ripper (raise / lower, tip), all on hydraulic cylinders.
- A full working cab: clickable rocker switches, keypads, knobs, an ignition key and floor pedals, an operator monitor, a grade-control screen, a radio, opening doors, breakable glass, working wipers, climate control and fogging windows. The operator seat is air-suspended and the driver camera rides on it. The blade joystick, the ripper handle and the steering tiller move with your inputs, and the gauge needles on the dash show the temperatures and fuel.

2. Configurations, parts and paints



SU Blade, Single-Shank Ripper



SU Blade, Triple-Shank Ripper



SU Blade (Upper Tilt Mount)



Push Dozer (No Ripper)



Ripping Tractor (No Blade)



Bare Tractor

The six factory configurations

Factory configurations (vehicle selector, Caterpillar D11T):

D11T SU Blade, Single-Shank Ripper (default) The classic D11T: 11SU blade and the big single-shank ripper. D11T SU Blade, Triple-Shank Ripper 11SU blade plus the multi-shank ripper carrying three shanks, for breaking wide strips of hard ground. D11T SU Blade (Upper Tilt Mount), Single-Shank Ripper The blade's tilt cylinders are pinned in the upper push-arm mounts instead of the lower ones. D11T Ripping Tractor (No Blade), Triple-Shank Ripper No blade, triple-shank ripper - a dedicated ripping tractor. D11T Push Dozer, SU Blade (No Ripper) Blade only - a push / production dozer. D11T Bare Tractor (No Blade, No Ripper) Just the tractor - for towing, winching, moving on a trailer or building your own setup.

Parts you can swap in the Parts menu (Vehicle Config):

Blade	11SU Semi-Universal Blade, Dual Tilt 11SU Semi-Universal Blade, Dual Tilt - tilt cylinders in upper mount (empty) - no blade
Ripper	Single-Shank Ripper Multi-Shank Ripper (3 pockets). It has three shank slots - Left, Center and Right Ripper Shank + Tip - so you can run one, two or three shanks. (empty) - no ripper

Work lights	The machine has 11 work lights. Each can be fitted with an LED flood, a 30 W off-road LED or a 55 W halogen bulb.
Beacon	Rotating amber beacon on the cab roof (can be removed).

Paints: CAT Yellow (default), Hi-Viz White, Military Green, Safety Orange and Black.

3. Real-world specifications

Engine	Cat C32 ACERT, 32.1 litre V12 turbo diesel
Power	850 hp at 1,800 rpm
Torque	4,300 Nm at 1,200 rpm
Idle / max rpm	700 rpm / about 2,050 rpm
Transmission	Torque converter + planetary powershift, 3 forward / 3 reverse
Top speed	about 12 km/h (7.4 mph)
Undercarriage	Elevated sprocket, 41-link sealed and lubricated track
Operating weight	104,236 kg (default and upper tilt mount configurations) 107,499 kg (blade + triple-shank ripper) 95,419 kg (push dozer, no ripper) 91,307 kg (ripping tractor, no blade)
Blade	11SU semi-universal, dual tilt, 16,192 kg
Single-shank ripper	8,817 kg
Multi-shank ripper	3,330 mm beam, 3 shank pockets
Fuel tank	1,609 litres
Hydraulic tank	205 litres
Value	US\$ 1,350,000 to 1,720,000 depending on configuration

4. Getting into the cab, cameras and doors



The driver camera

Cameras. Besides BeamNG's normal cameras, the D11T adds:

- Driver: the operator seat (it moves with the air-suspended seat).
- Track left and Track right: views along each track - great for watching the undercarriage and the ripper work.
- Top: a view from above.

Cycle through them with BeamNG's normal camera keys.

Clicking cab controls. In the driver camera, point at a switch, key, knob or pedal and click it. Section 21 lists every one.

Doors. Both cab doors open and close. Click a door handle (inside or outside), or use BeamNG's door actions. The door swings open; the same action pulls it shut and it latches with a clunk. With the doors open you hear the engine, the tracks and the radio louder inside the cab. The door windows can break.

The operator monitor is on the dash in front of you, the grade screen is on the right-hand pillar and the radio is in the overhead panel. Lean the camera towards them if they are hard to read.

5. Starting the engine (cold start)



Key on - the cab screens light up



Cold start: white smoke and a rough, hunting idle

The machine always spawns with the key OFF and the engine stopped.

Start it by clicking the ignition key on the right console once: it switches the key on and keeps cranking until the engine catches (it gives up after about 12 seconds). Click the key again to shut the engine down. Your normal BeamNG ignition / start key (hold to crank) works too.

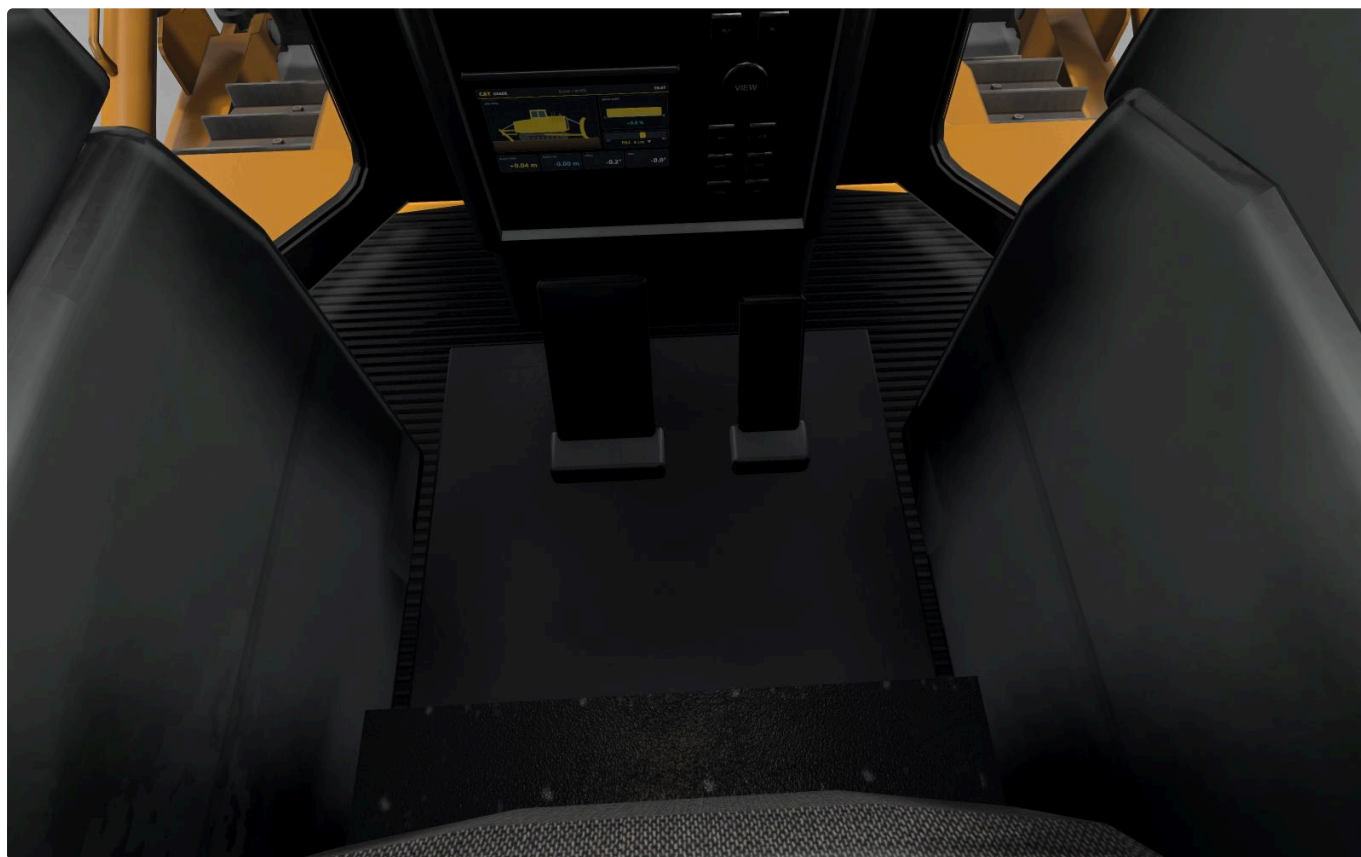
What happens depends on the real engine temperature:

- Cold engine (freshly spawned, or left standing): the starter cranks slowly - cold oil and a tired battery - for several seconds (up to about 8 seconds when stone cold). You hear it try to catch, with chuffs of white smoke, before it finally fires.
- Once it runs, a cold engine idles rough and "hunts": the revs surge and sag, cylinders miss, and thick white smoke pours out of the stacks. Revving it while cold makes even more smoke.
- As the engine warms up (about 2 to 3 minutes) the misfires stop, the idle settles and the white smoke clears.
- A warm engine (restarted after a short stop) starts quickly and cleanly.

Tip: let it idle for a minute before you put a heavy load on it, and watch the COOLANT gauge on the operator monitor climb.

The first time the engine catches after spawning (or after a vehicle reset), the machine lifts its blade (about 1.3 m) and ripper clear of the ground by itself. Leave the implement controls alone until it finishes - touching them hands control back to you straight away.

6. Engine, high idle and the decelerator pedal



Service brake (left) and decelerator (right)

Throttle. Your normal BeamNG throttle drives the engine.

Exhaust smoke. Light at idle, darker and heavier when the engine is pulling hard (pushing a full blade, ripping, climbing). White smoke only while it is cold (section 5).

Engine temperatures. Coolant, power-train oil and hydraulic oil temperatures are real and show on the operator monitor and the dash gauges. Working the machine hard for a long time heats it up. If the coolant goes over about 105 C, the alarm chime sounds (section 14).

High idle (rabbit / turtle key on the right console keypad). This is how real dozers are run:

- **HIGH IDLE ON (rabbit):** the engine governor holds rated speed, 1,800 rpm. In neutral or with the parking brake on, the engine runs up to 1,800 rpm, so the hydraulic pump turns faster and the blade and ripper move faster. While you drive (throttle pressed) the governor keeps the engine at full working speed. When you let go of the throttle in gear, it drops back to your throttle, so the machine never drives off on its own.
- **HIGH IDLE OFF (turtle):** normal throttle control. The monitor's HI IDLE chip and the systems page ("Engine speed: HIGH 1800" or "LOW IDLE") show the setting.

Decelerator pedal (right floor pedal, hold U). Real dozer operators run at full engine speed and use the decelerator to slow down: it pulls the engine speed down towards idle.

- With high idle ON, the decelerator lowers the governed speed from 1,800 rpm towards 700 rpm while you hold it.
- With high idle OFF, it cuts back your throttle. Use it for fine, slow work: creeping up to a grade stake, easing a full blade over the edge of a pile, or slowing down without touching the brakes.

7. Transmission, steering and brakes

Transmission. Torque converter and a 3-speed planetary powershift: 1F, 2F, 3F and 1R, 2R, 3R. The reverse speeds are a little faster than the forward speeds, like the real machine.

- First gear is for dozing and ripping; second and third are for travelling and returning.
- Use your normal BeamNG gear controls, or the D11 tiller actions below.
- The current gear shows in big letters on the operator monitor ("1F", "2R", "N", or "P" when stopped in neutral with the parking brake on).

D11 tiller shift actions (no key by default - bind them in Options > Controls, search "D11"):

D11 F-N-R rocker	forward -> neutral -> reverse -> forward
D11 upshift (tiller)	next speed in the current direction (1F -> 2F -> 3F, 1R -> 2R -> 3R)
D11 downshift (tiller)	previous speed in the current direction

These work like the thumb switches on the real steering tiller. Upshift does nothing in neutral - choose a direction first with the F-N-R rocker.

AutoShift: see section 10. It switches between automatic and manual gear selection.

Steering. The D11T has no steering wheel; it steers by slowing one track.

- A little steering releases the steering clutch on the inside track: that track coasts and the machine turns gently.
- More steering progressively brakes the inside track for a tighter turn.
- Full steering locks the inside track and the machine pivots around it.
- The outside track always keeps full engine power.
- Steering with no throttle and no brake (in gear, parking brake off) turns the machine on the spot - it gives itself a little throttle for the pivot. If the machine is sitting in neutral with AutoShift on, steering alone selects first forward.
- The steering brakes ramp on and off smoothly; they never slam. The steering tiller in the cab moves with your steering.

Brakes. Your normal BeamNG brake is the service brake (left floor pedal). The parking brake is your normal BeamNG parking brake control, or the parking brake key on the right console keypad. It clunks when set or released, and the monitor shows "(P) BRAKE" and "PARKING BRAKE ENGAGED".

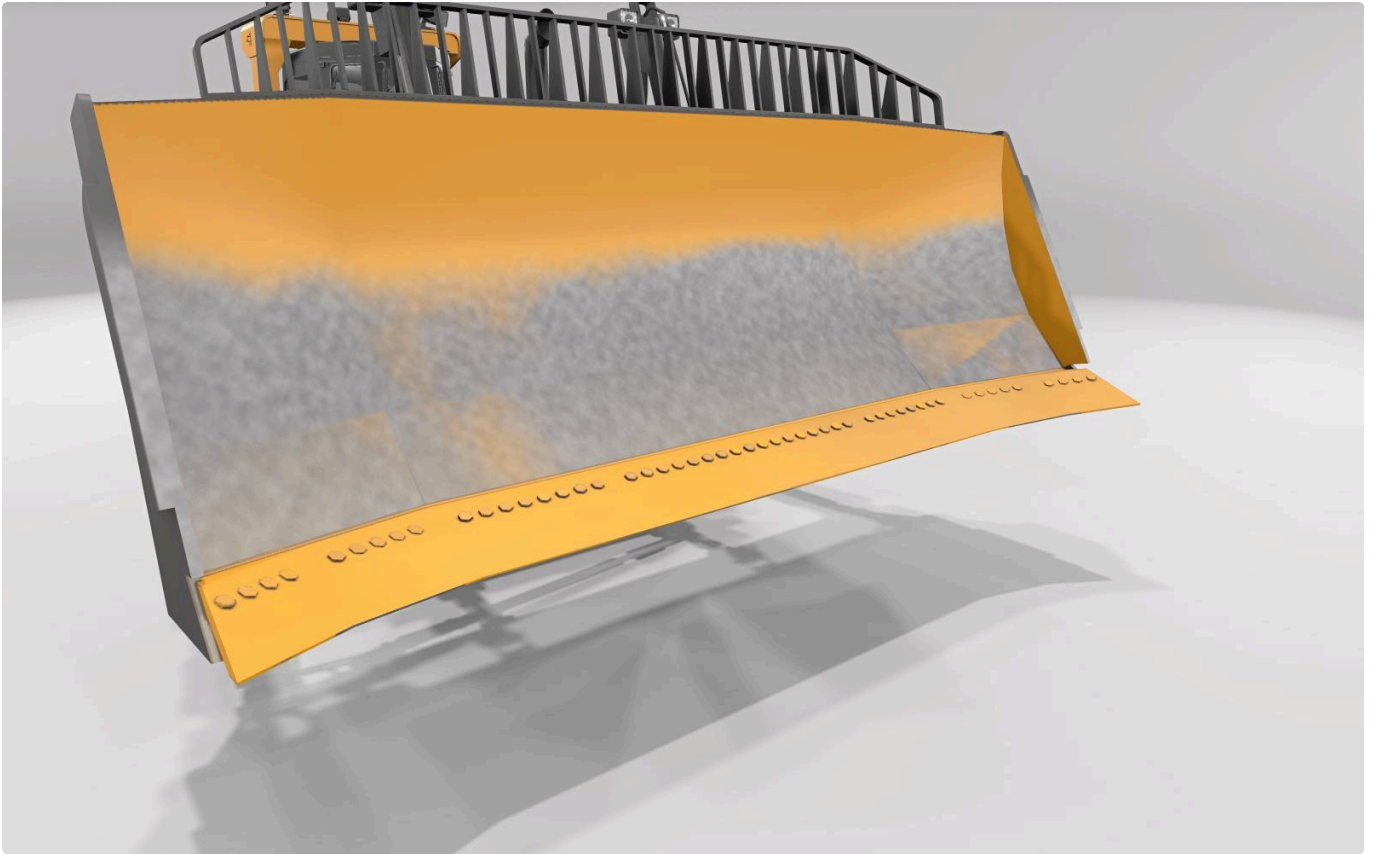
8. The blade



11SU blade raised



Dual tilt in action



Cutting edge and worn moldboard

The 11SU semi-universal blade weighs over 16 tonnes and moves on four hydraulic cylinders: two lift cylinders and two tilt cylinders (dual tilt).

Raise / lower	T / G
Tilt	I drops the left corner, K drops the right corner
Pitch	Alt+I pitches the cutting edge forward (more aggressive, digs in) Alt+K pitches it back (carries the load, smooths the surface)

All blade and ripper controls are proportional if you bind them to a joystick or gamepad axis.

Dual tilt. When you tilt, the two tilt cylinders move equal and opposite, so the blade rolls cleanly without changing its pitch. When you pitch, both move together. The lift cylinders share their oil, so they follow a tilt instead of fighting it.

Upper tilt mount. The "upper mount" blade option pins the tilt cylinders higher on the push arms. This changes the blade's geometry and range of motion - try both and keep the one you like.

Faster hydraulics: switch high idle on (section 6). The pump turns with the engine, so the blade moves faster at higher rpm.

The blade joystick in the cab moves with your lift and tilt inputs, and the monitor shows what the blade is doing (RAISE, LOWER, TILT L, TILT R or HOLD).

9. The ripper (and how to change the shank depth)



Single-shank ripper



Multi-shank ripper with three shanks

The ripper sits at the back of the machine on a parallelogram frame.

Raise / lower

Shift+T / Shift+G

Tip

Shift+I tips the shank back, Shift+K tips it forward

Ripping technique:

1. Drive slowly forward in first gear, in a straight line.
2. Lower the ripper (Shift+G) so the tip enters the ground.
3. Tip the shank forward a little to help it penetrate, then back as it goes deeper.
4. If the tracks start to spin, raise the ripper a little.
5. Raise the ripper fully (Shift+T) before you turn or reverse - a ripper in the ground does not like being dragged sideways.

Shank depth (pin holes) - single-shank ripper The single-shank ripper's shank is held in its pocket by a pin. The shank has three pin holes, 15 cm apart, so you can choose how far it reaches down. It starts in the middle hole.

The quick way - SHANK UP / SHANK DOWN:

- Press SHANK UP (right console keypad, or Alt+PageUp) to move the shank up one hole (shallower).
- Press SHANK DOWN (right console keypad, or Alt+PageDown) to move it down one hole (deeper).
- One hole per press. The pin is handled for you.

The manual way - with the pin puller:

1. Lower the ripper until the tip rests on the ground (this takes the weight off the pin).
2. Press PIN PULLER (right console keypad, or Alt+Home). The monitor shows "RIPPER PIN PULLED - RIPPER LOCKED". While the pin is out, the ripper cylinders are locked so the shank cannot drop out of its pocket.
3. Push the ripper lever: Shift+T moves the shank up one hole, Shift+G moves it down one hole. One hole per push - let go of the key between pushes.
4. Press PIN PULLER again to put the pin back in. The pin does not go back in by itself: until you press it again the ripper stays locked and will not raise or lower.

Multi-shank ripper The multi-shank ripper carries up to three shanks in three pockets (Left, Center, Right). Add or remove shanks in the Parts menu: fewer shanks put more of the machine's weight on each tip for hard ground; three shanks break a wide strip of softer material.

The ripper handle in the cab moves with your input, and the monitor shows RAISE, LOWER or HOLD.

10. Driving aids: autoshift, autocarry, auto blade assist



AutoShift, AutoCarry and ABA keys

All three are keys on the right console keypad (AutoCarry and ABA are also on the grade keypad). Each has a chip on the operator monitor: dark = off, green outline = on, solid green = working right now.

AutoShift (ASHIFT) Switches between automatic gear selection and manual shifting. When you spawn, the key matches your BeamNG gearbox setting (arcade = on, realistic = off). After that only the key changes it.

- ON: the transmission picks the speed for you.
- OFF: you choose every gear yourself (best for dozing - keep it in first).

AutoCarry (ACARRY) Holds the blade at a steady height while you carry a load.

- Turn AutoCarry on.
- Set the blade where you want it and let go of the blade lift control.
- While you drive forward, the machine holds the cutting edge at the height it had when you let go - lifting the blade if the load pushes it down, lowering it if it rides up.
- Touch the lift control at any time to take over; when you let go again, the new height is remembered.
- It does nothing while you are reversing or standing still. The ACARRY chip turns solid green, and the grade screen shows a solid green AUTO badge, while it is holding the blade.

Auto Blade Assist (ABA) Sets the blade pitch for you as you raise and lower it, like Cat's blade pitch presets:

- Lowering the blade pitches the cutting edge forward to load and penetrate.
- Raising the blade pitches it back to carry the load.
- As soon as you pitch the blade yourself (Alt+I / Alt+K), your input wins.

11. Implement lockout



Rocker panel: lights, beacon, floods and the implement lockout

The implement lockout rocker switch (right console) locks all blade and ripper controls, like the real hydraulic lockout. Use it when you get in or out, when you park, or when you are travelling and don't want to bump the blade by accident. The monitor shows "IMPLEMENT LOCKOUT ON". Switch it off to work again.

12. The operator monitor (dash screen)



Operator monitor and its eight keys

The colour monitor on the dash comes on with the key. It has three pages, chosen with the monitor keys:

HOME	main operating page
PAGE	cycles main -> systems -> service
SETUP	systems page (switch and climate status)
INFO	service page (maintenance and readings)
BRT+ / BRT-	screen brightness up / down
DAY / NIGHT	night palette for both cab screens (darker and warmer, for night work)
ACK	alarm acknowledge (section 14)

MAIN PAGE

Header: CAT D11T, the service meter (SMU hours - it counts up while the engine runs), the cab temperature (with "A/C" when the air conditioning is cooling) and the clock. Left - four round gauges:

COOLANT	engine coolant temperature (red zone from 107 C)
SYSTEM	electrical system voltage (about 24 V key on, 27.6 V with the engine running)
P/TRAIN OIL	power-train oil temperature (red zone from 121 C)
HYD OIL	hydraulic oil temperature (red zone from 96 C)

Centre - TRANSMISSION: the gear in big letters, ground speed in km/h, and an rpm bar with the engine speed (the bar turns red above 1,950 rpm). Right:

FUEL	fuel level bar (red below 10 %)
HYD TANK	hydraulic oil tank level (red below 30 %)
BLADE	what the blade is doing: RAISE / LOWER / TILT L / TILT R / HOLD
RIPPER	RAISE / LOWER / HOLD
PITCH / ROLL	the machine's angle on the slope, in degrees
Assist chips	ACARRY, ABA, ASHIFT, HI IDLE

Message line (flashing), most important first:

HYDRAULIC LINE FAILURE - STOP MACHINE	(red)
ENGINE STOPPED	(red)
IMPLEMENT LOCKOUT ON	(yellow)
RIPPER PIN PULLED - RIPPER LOCKED	(yellow)
REVERSING FAN PURGE	xx s (yellow, with the seconds left)
PARKING BRAKE ENGAGED	(yellow)

Warning lamps along the bottom: (P) BRAKE, WORK LTS, REAR LTS, FLOOD, BEACON, WIPERS, ENGINE (engine stopped), COOLANT (over 107 C), HYD FAULT, LOW FUEL (below 10 %).

SYSTEMS PAGE (SETUP)

LIGHTS: front work lights, rear work lights, cab flood lights, dome light, beacon, wipers and washer - each ON / OFF. CLIMATE: cab temperature, set point, fan speed, A/C (OFF / ON / COOLING), air mode (FACE, FACE + FLOOR, FLOOR, DEFROST), mirror heat (minutes left), radio ON / OFF. MACHINE: implement lockout, ripper pin puller (IN / PULLED), AutoCarry, auto blade assist, AutoShift, engine speed (HIGH 1800 / LOW IDLE).

SERVICE PAGE (INFO)

Service meter hours, the next 250-hour service and the hours left until it, engine running / stopped, engine speed, engine load, coolant, power-train oil and hydraulic oil temperatures, fuel level, hydraulic tank level and system voltage.

The analogue gauges on the dash (coolant, power-train oil, hydraulic oil, fuel) show the same readings with needles, and drop to rest when the key is off.

13. The grade-control screen (pillar screen)



Grade-control screen on the right pillar



Grade-control keypad

The screen on the right-hand cab pillar is a live grade-control display, like the Cat GRADE systems on real machines. It measures the blade and ripper on the machine itself, so you can cut and fill to an exact height without leaving the seat.

All heights are measured square to the machine, from the ground under the tracks (0 = the surface the tracks are standing on).

What you see:

Header	CAT GRADE, the current view (BLADE + RIPPER / BLADE / RIPPER), the design grade target (for example "TGT +12 cm") when one is set, a green AUTO badge when AutoCarry is on (solid while it holds the blade), and the clock. A red HYDRAULIC FAULT banner appears if a hydraulic line has failed.
SIDE VIEW	A live side drawing of the machine with the blade and ripper where they really are, a 1 m grid, the track ground as a green dashed line and the design grade as a blue dashed line. The dot on the cutting edge is yellow above grade, blue below grade and green on grade.
CROSS SLOPE	A rear view of the blade showing its side-to-side slope in percent, against your cross-slope target (drawn exaggerated so small slopes are easy to see). The number is green within 0.5 % of the target.
CUT / FILL	A 9-light bar and a big readout of the blade edge against the design grade: "ON GRADE" (green) within 3 cm, "CUT xx cm" (blue - the edge is below grade, raise it) or "FILL xx cm" (yellow - the edge is above grade, lower it). Each light is a 5 cm step.
Tiles	BLADE EDGE height (m), RIPPER TIP height (m, blue when it is below the ground), machine PITCH and ROLL (red above 25 degrees pitch / 20 degrees roll).

The grade keypad:

GRADE + / GRADE -	raise / lower the design grade by 1 cm per press
SLOPE + / SLOPE -	change the cross-slope target by 0.1 % per press
SET	benchmark: makes the current blade edge height the design grade
CLEAR	design grade and slope target back to zero (the track ground)
VIEW	BLADE + RIPPER -> BLADE -> RIPPER
UNITS	centimetres / inches
ZOOM	zooms the side view in on the blade
AUTO	AutoCarry on / off (same as the console key)
ABA	auto blade assist on / off (same as the console key)

Working to grade - an example:

1. Park the machine on your reference surface (a finished pad, next to a stake).
2. Lower the blade until the cutting edge just touches the reference and press SET. The bar now reads ON GRADE.

3. Need the pad 10 cm lower? Press GRADE - ten times.
4. Doze: when the bar reads FILL, lower the blade; when it reads CUT, raise it. Turn on AutoCarry to hold the height once you have it.
5. For a sloped surface, set the cross-slope target with SLOPE + / SLOPE - and tilt the blade until the cross-slope number turns green.

The grade is measured from the ground under the tracks, so it moves with the machine. Work in long, even passes for the best results.

14. Warnings and the alarm chime

A soft chime sounds in the cab (key on) when a new fault appears:

- a hydraulic line failure (section 22),
- engine coolant over about 105 C (overheating),
- the engine stalled with the key still on.

Press ACK on the monitor (alarm acknowledge) to silence the chime for the faults present now. A new fault chimes again. ACK also hides the monitor's message line for 30 seconds. When the faults clear, the alarm resets.

15. Climate control and fogging glass



Overhead panel: fan, temperature, air mode, A/C, wipers and radio

The cab has a real heater and air conditioning, its own cab temperature, and windows that fog up and clear depending on the weather and how you use the climate control.

Controls (overhead panel):

FAN knob	off / 1 / 2 / 3 (each click steps up, then back to off)
TEMP knob	set temperature from cold (16 C) to hot (28 C); each click steps warmer, then back to cold
AIR MODE knob	FACE -> FACE + FLOOR -> FLOOR -> DEFROST
A/C button	air conditioning on / off

How it works:

- The heater gets its heat from the engine coolant, so it only blows warm once the engine has warmed up.
- The A/C needs the engine running and the fan on. It cools the air and also dries it.
- With the fan off the cab drifts towards the outside temperature (a glass cab in daylight sits a few degrees warmer). Open doors let outside air in much faster.
- You hear the blower and the A/C compressor in the cab.
- The cab temperature shows in the monitor header and on the systems page.

Fogging glass: The outside humidity depends on the map (Utah and Johnson Valley are dry, the islands and the jungle are humid, the coasts are in between) and rises in rain, fog and at night. Your breath - and wet boots in the rain - adds moisture inside.

- When the glass is colder than the dew point of the cab air, the INSIDE of the glass fogs up. A machine that has stood overnight often starts with a damp cab and fogged windows.
- To clear it: turn the fan up and set the air mode to DEFROST - it aims the air at the windscreen, the rear window, the side glass and the doors. Warm air (heater) and dry air (A/C) both clear fog. The glass has to warm up, so it takes a minute or two, just like a real cab.
- FACE and FACE + FLOOR send some air to the glass; FLOOR sends very little.
- In hot, humid weather, very cold A/C glass can fog on the OUTSIDE. Run the wipers - they clear outside condensation on the front and rear glass. Rain washes it off too.

Tip: on a cold, damp morning start the engine, then set the fan to 3, air mode DEFROST, temperature hot and A/C on. Once the glass is clear, switch to FACE + FLOOR.

16. Wipers, washer and mirror heat



Front, rear and door wipers

Wipers (Shift+W, or the wipers button on the side panel or the overhead panel) Switch the front, rear and door wipers on or off. They sweep about 40 times a minute. When you switch them off, each arm finishes its stroke and parks. Key on only.

Washer (hold Alt+W, or the washer button) While held, the washer pump runs, water sprays onto the front and rear glass and the wipers run.

Mirror heat (overhead panel button) Heats the mirrors for 15 minutes, then switches itself off, like the real timer switch. The systems page shows the minutes left.

17. Lights and beacon



Work lights and cab floods at dusk



Rotating amber beacon



Cab at night

Front work lights	Alt+End, the rocker switch or the side-panel button. BeamNG's normal work-light toggle does the same.
Rear work lights	Alt+Insert, rocker or side-panel button - lights the ripper and the area behind the machine.
Cab flood lights	Alt+F or the rocker - the floods mounted on the cab.
Dome light	Alt+Y, rocker or side-panel button - the interior light.
Beacon	rocker or side-panel button (no key by default). BeamNG's normal light-bar toggle also switches it. Two amber reflector beams sweep the area around the machine. It only runs with the key on.

Work-light bulbs are a part choice: LED flood, 30 W off-road LED or 55 W halogen (Parts menu). The lights are breakable - a hard knock smashes them.

18. Horn, backup beeper and the other sounds

Horn	BeamNG's normal horn control, or the horn key on the right console keypad. A twin electric disc horn at the front of the machine, also heard in the cab.
Backup beeper	Sounds at the back of the machine whenever reverse is selected with the key on.
Track sounds	The steel tracks clatter link by link, with heavier bangs now and then, a rolling roar at speed, a grind when the grousers slide sideways in a turn, a crunch on soft ground and the odd chirp when turning. The sound comes from the tracks themselves and gets louder the faster you go.

Cab sounds

Every switch, key and knob clicks, the parking brake clunks, and you hear the blower, the A/C compressor and the washer pump. The cab is quieter with the doors shut.

19. Reversing fan

Dusty work clogs the radiator. Press the REVERSING FAN key (right console keypad) to run one 30-second purge: the radiator fan reverses and blows dust and debris out of the grille - you see the dust cloud and hear the fan roar. The monitor counts down the seconds, and the key switches itself off when the purge is done. The engine must be running to see and hear it.

20. Cab radio (overview)



The overhead radio tuned to a live station

The overhead radio plays through the two cab speakers: clear in the seat, muffled from outside, louder with the doors open. It has three sources:

LIVE	internet radio stations - needs the free GR8 Radio Relay helper
SPOTIFY	the Spotify desktop app - needs the free GR8 Radio Relay helper
LOCAL	your own music files - works out of the box, no extra program needed

Keys: Alt+R on / off, Alt+M source, Alt+. / Alt+, next / previous, Alt+= / Alt+- volume. The radio only plays with the key on. Everything about the radio is in "GR8MOD D11T - Cab Radio Guide.pdf".

21. Every cab control, one by one



Side panel buttons and the grade screen



Rocker panel

Click any of these in the driver camera. Most also exist as actions in Options > Controls (search "D11"), so you can put them on keys or buttons.

RIGHT CONSOLE - ROCKER SWITCHES

Front work lights	on / off
Rear work lights	on / off
Dome light	on / off
Beacon	on / off
Cab flood lights	on / off
Implement lockout	locks the blade and ripper controls (section 11)

RIGHT CONSOLE - KEYPAD

High / low idle	rabbit / turtle: holds 1,800 rpm (section 6)
AutoShift	automatic / manual gear selection (section 10)
AutoCarry	holds the blade height while you carry (section 10)
ABA	auto blade assist - automatic blade pitch (section 10)
Reversing fan	30-second radiator purge (section 19)
Pin puller	pulls / re-inserts the ripper shank pin (section 9)
Horn	sounds the horn
Parking brake	sets / releases the parking brake
Shank up	ripper shank one hole shallower (section 9)
Shank down	ripper shank one hole deeper (section 9)

RIGHT CONSOLE - IGNITION KEY

One click starts the engine (cranks until it catches); click again to stop it (section 5).

SIDE PANEL BUTTONS

Front work lights, rear work lights, dome light, wipers, washer (hold), beacon.

MONITOR KEYS (dash monitor) Home, Page, Brightness +, Brightness -, Day / Night, Alarm acknowledge (ACK), Service info (INFO), Systems setup (SETUP). See section 12.

GRADE-CONTROL KEYPAD (by the pillar screen) Grade +1 cm, Grade -1 cm, Slope +, Slope -, Grade view, Grade SET (benchmark), Grade CLEAR, Grade AUTO (AutoCarry), Units, Zoom, Grade ABA. See section 13.

OVERHEAD PANEL

HVAC fan speed knob	off / 1 / 2 / 3
Cab temperature knob	cold to hot (16 to 28 C)
Air-mode knob	face / face + floor / floor / defrost
A/C button	air conditioning on / off
Wipers	on / off
Washer	hold to wash

Mirror heat	15-minute heated mirrors
Radio volume knob	each click +10 %, wraps back to low after full
Radio mode button	LIVE -> SPOTIFY -> LOCAL
Radio power	on / off
Radio seek back / forward	previous / next station or track

FLOOR PEDALS

Left pedal	service brake (your normal brake control)
Right pedal	decelerator (hold U) - pulls the engine speed towards idle

MOVING CONTROLS

The blade joystick, the ripper handle and the steering tiller move with your inputs. The door handles open the doors.

22. Damage and hydraulic failures



A torn blade-lift line sprays hydraulic oil

The D11T is built like the real thing, so it can be damaged like the real thing.

Breakable parts

- Cab glass panes and the door windows shatter on hard impacts.
- Work lights, hand rails and the exhaust stacks are bolted on and tear off in hard hits.
- Hydraulic lines (below).

Hydraulic line failures The blade lift lines and the ripper hoses are real, physical lines. Catch one on a rock, a tree or another vehicle hard enough and its fitting rips out:

- You hear the fitting tear and a burst of pressure.
- Oil jets and mists out of the torn end and dribbles from the open port. The faster the engine runs, the harder it sprays.
- The circuit loses power: Blade lift line torn: the blade can no longer be held up. It sinks to the ground under its own weight and the lift control does nothing (tilt and pitch still work). Ripper lift hose torn: the ripper slowly sinks and will not lift. Ripper tip hose torn: the ripper can no longer tip.
- The hydraulic tank drains - fast while the engine runs, slowly when it is stopped. Watch HYD TANK on the monitor.
- Below about 12 % oil the pump runs dry: every implement dies, and the blade and ripper settle to the ground.
- The oil forms puddles on the ground that grow as more lands. After a couple of seconds of spray, the parts around the leak (blade, push arms and cylinders at the front; ripper parts at the back) get a glossy oil coating.
- The monitor shows "HYDRAULIC LINE FAILURE - STOP MACHINE" and the HYD FAULT lamp, the grade screen shows a red HYDRAULIC FAULT banner, and the alarm chime sounds. What to do: stop the engine to slow the leak (it still drains slowly). Reset the vehicle to repair the lines and refill the tank. Oil puddles stay on the ground until the map is reloaded.

23. Tie-down points, trailers and towing

The machine has strong tie-down and towing points on the ROPS (cab frame), deck loops, steps, blade lugs, track roller frames and the ripper. They work with BeamNG's couplers and ropes, so you can chain the dozer down on a heavy lowboy trailer, or use it to pull other vehicles out.

Hauling tips:

- Lower the blade and ripper onto the trailer deck and switch the implement lockout on.
- Set the parking brake and switch the engine off.
- Chain at least all four corners. It weighs over 100 tonnes - use a truck and trailer that can really carry it.

24. Tips for good dozing and ripping

- Work in first gear. Second and third are for travelling.
- Run with high idle on and control speed with the decelerator, like a real operator.
- Keep the tracks gripping: if they spin, raise the blade (or ripper) a little until they bite, then lower it again slowly.
- Cut with the blade pitched forward (or let ABA do it); carry with it pitched back.
- Slot dozing: push along the same path each time. The spoil left on both sides keeps more material in front of the blade.
- Pushing downhill moves much more material than pushing uphill.
- Once you have a good cutting depth, turn on AutoCarry to keep the blade there.
- Use the grade screen to finish a pad: SET on a reference, then follow the cut / fill bar.
- Rip in straight lines in first gear, overlap your passes, and lift the ripper before turning.
- Fewer ripper shanks for the hardest ground, three shanks for wide breaking.
- Watch the temperatures: long heavy pushing heats the engine and oils. Ease off before the coolant reaches the red zone.

- Steer gently while pushing a load - a hard pivot under load can stall a track.
- Mind the hoses: driving the ripper or blade into rocks and trees can tear a line.
- Use the track cameras to watch the undercarriage and the ripper while you work.

25. Troubleshooting and faq

The machine won't move. Is the engine running, a gear selected and the parking brake off (no "(P) BRAKE" lamp)? If the blade or ripper is buried deep, raise it first.

The engine cranks for a long time. A cold engine cranks for several seconds before it catches - keep cranking.

Lots of white smoke and a rough idle. That is the cold start. It clears in 2 to 3 minutes as the engine warms up.

The blade or ripper won't move. Look for "IMPLEMENT LOCKOUT ON" or "RIPPER PIN PULLED - RIPPER LOCKED" on the monitor and switch them off. Is the engine running? A red hydraulic message and the HYD FAULT lamp mean a line is torn - reset the vehicle.

The blade keeps dropping by itself. A torn blade lift line, or the hydraulic tank is nearly empty. Reset the vehicle.

The blade moves slowly. Hydraulic speed follows engine speed. Switch high idle on, or give it more throttle.

The ripper won't go deeper. Lower it fully, tip it forward, and on the single-shank ripper set the shank one hole deeper with SHANK DOWN. On the multi-shank ripper, try fewer shanks.

The machine changes gears on its own / won't change gears. That is AutoShift - turn it on or off with the AutoShift key. The tiller upshift does nothing in neutral; choose forward or reverse first.

The windows are fogged. Fan up, air mode DEFROST, heat and A/C on, and give the glass a minute or two. Fog on the outside: use the wipers.

The chime keeps sounding. Press ACK on the monitor, then check the fault: a hydraulic failure, overheating or a stall.

The screens are black. Turn the key on. If they are too dark, press BRT+ or switch the night palette off.

The radio is silent or says "RELAY OFF". See the Cab Radio Guide. LOCAL music needs no helper; LIVE and SPOTIFY need the GR8 Radio Relay running.

Low frame rate. This is a very detailed physical vehicle. Run one or two at a time. The cab screens and radio only run on the machine you are sitting in.

I want different keys. Options > Controls, search "D11", click an action and press the new key.

How do I reset everything? Use BeamNG's normal vehicle reset. It repairs damage, refills the hydraulic tank and puts the machine back to its spawn state (engine off, blade and ripper lifting clear).

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