

CASE

CONSTRUCTION

WHEEL LOADER

521E-EXT



Engine Horsepower
Operating weight (max.)
Bucket capacity

521E
106 kW/142 hp
10 464 kg
1.7 - 1.9 m³

521EXT
106 kW/142 hp
11 906 kg
1.6 - 1.8 m³

ERGONOMIC ENVIRONMENT

The Case E series cab is longer and wider, with a 15 percent increase in floor area and floor to ceiling glazing, for maximum visibility from the operator's seat. The cab is one of the quietest in the industry, featuring an adjustable seat and steering column, with standard single lever or optional dual lever loader controls. The ergonomically designed switchgear and easy to read central console reduce operator effort. Cross cab ventilation is improved, both the cab door and right hand window can be opened to 180 degrees. Increased air diffusers boost heating and ventilation for all weather comfort.

Case comfort. Operator acceptance.

ECONOMICAL POWER

Tier III compliant 4.5 litre engine offers three power curve choices, to boost productivity and ensure optimum economy in all operations. Four working modes fine tune the machine's engine and hydraulics to the application, allowing operators to use high output for loading and digging duties, while providing low fuel consumption in lighter stocking work. Auto mode automatically adjusts output to provide maximum productivity.

Reduced consumption. Increased performance.



EASE OF ACCESS

All daily service checks can be carried out from ground level, with fluid sight gauges on all reservoirs, saving time and reducing risk to the operator. Remote fluid drains ensure environmentally-friendly service. High efficiency cooling pack in the centre of the machine has independent coolers with removable air conditioning condenser for easy access. Extended service intervals result in lower operating costs and increased productivity.

Total access. Minimal downtime.

EXTRA VISIBILITY

Larger glazed area with redesigned front wheel arches and a sloping single-piece engine canopy provide a clear view all around the machine, reducing the risk of accidents and improving safety on site. The exhaust stack is mounted at the rear of the canopy. Full height glazing provides an unobstructed view to the wheels and bucket or attachment, for increased safety. Unparalleled view. Operator confidence.

EXTRA PERFORMANCE

Optional Case Ride Control system reduces shock loading in the loader arms and bounce at the bucket when travelling with a load. Auto mode automatically engages Ride Control at speeds over 4.8km/h to provide maximum load retention and operator comfort. Offset rims for wider track, combined with Ride Control, offers class-leading ride comfort, reducing fatigue and boosting productivity. **Load retention. Operator comfort.**



EXCEPTIONAL FORCE

Sturdy Z-bar loader linkage design results in superior breakout forces and lift capacity, boosting productivity and reducing cycle times. Range of 1.6m to 1.9m rapid fill buckets available. Single loader control lever incorporates forward/reverse and transmission downshift buttons, while dual levers have additional controls at fingertips, reducing operator effort and cycle times. **Robust design. Built to perform.**

ENGINE



The 521E is powered by a Tier III Case 445TA/EGE diesel engine. Electronically-controlled 4.5 litre motor offers a choice of three power and torque ratings, from 110-142 hp (82-106 kW) at the touch of a button. Each rating is designed to match the requirements of the machine in specific applications, allowing the operator to tailor the 521E to the job site. This boosts productivity and reduces fuel consumption and exhaust emissions. The 521E has four Working Modes, to fine tune the hydraulic power to the application. Standard mode is set for normal operation, offering the engine's standard rated output of 129 hp (96 kW) with maximum hydraulic power and flow.

Max Power provides a 7% power boost and is intended for extreme operating conditions. For lighter duties, there is Economy mode, which drops the engine revs and power output by almost 20%, lowering fuel consumption, exhaust and noise emissions. There is also an Auto mode, which automatically matches the engine's power curve to the required digging application. The electronic engine control also permits three idle settings, 900, 1050 and 1200 rpm, improving engine warm up and further reducing fuel consumption and exhaust emissions.

COOLING MODULE



The Case E Series wheeled loaders benefit from a completely new design philosophy, with a mid-mounted cooling module situated behind the cab. Separate radiator cores for engine coolant, transmission oil, the aftercooler, air conditioning condenser and hydraulic oil cooler (optional) provide the most effective cooling solution, with a hydraulically-driven cooling fan pulling air through the individual cores.

The cooling pack is unaffected by dust being thrown up at the rear of the machine, allowing the coolers to run in clean air. The positioning of the cooling pack also allows a lower engine canopy at the rear of the machine, improving visibility for the operator. The cooling fan has an optional reversing function for particularly dusty applications such as waste handling.

Easy access to the cooling module for cleaning and maintenance.

VISIBILITY



All Case E Series wheeled loaders benefit from a larger operator's cab, with up to 15% more floor area than the D series machines. The tapered design is longer and wider than previously, providing increased internal space for the driver. Reduced noise levels are among the quietest in the industry.

Floor to ceiling glass at the front and sides, offers increased visibility to the wheels and the bucket, increasing operator confidence and productivity. Redesigned front wheel arches offer improved protection for the cab and an improved view to the bucket tips.

The sloping single-piece engine canopy at the rear of the 521E provides industry-leading levels of visibility.

The full height door on the left hand side of the cab can be opened to 180° and locked in position, while the window on the right of the cab can be opened slightly for increased air flow, or opened to 180° and locked for maximum ventilation. Full cab air-conditioning is available as an option, with numerous vents providing a strong flow of cooling or warming air around the cab. There is plenty of storage for the operator, including a cool box when air conditioning is fitted.

OPERATOR'S CAB

The Case 521E uses the latest E series cab, which is longer and wider than on previous machines. This provides an exceptional working space. Adjustable steering and a fully adjustable driver's seat ensure that every operator can stay comfortable throughout the working shift.

The cab is among the quietest in the industry and features floor to roof glazing, for maximum visibility all around the machine. Easy to read analog gauges combined with a digital display to provide all necessary information in a clear dash console. A contoured console to the operator's right houses all switches and the heating and ventilation controls.





RIDE CONTROL

Material retention and operator comfort can be further improved with the addition of optional Ride Control, a system that allows the lift arms to float when the machine is moving. This prevents bounce in the cab and at the wheels. Ride Control permits higher travel speeds during load and carry operations, reducing fatigue for the operator and increasing productivity.

When specified the system has three operating modes, off to allow full hydraulic power during loading and digging operations, on for reduced bounce while travelling and an automatic setting, which engages Ride Control when the machine accelerates above 4.8km/h.

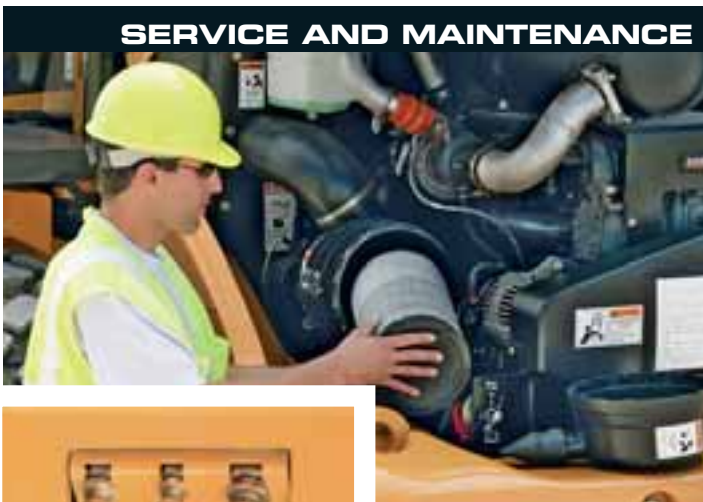
The Ride Control system reduces shock loadings in the chassis and in the operator's cab, extending component life and reducing operator fatigue.



DRIVETRAIN

The 521E wheel loaders use a torque sensing autoshift transmission with four forward gears and three reverse ratios. The operator can choose to use the transmission in manual or full auto modes. Top forward speed is 39 km/h.

Forward and reverse shifting can be controlled using a shuttle switch in the head of the main hydraulic servo lever, or on the console within the operator's reach if the machine is equipped with multi-lever controls. This allows the operator to change direction while operating the attachment lever, reducing effort, boosting productivity and cutting cycle times in loading operations. All four wheels are braked, with hydraulically-actuated maintenance-free wet disc brakes. A spring applied parking brake acts on the transmission output shaft.



SERVICE AND MAINTENANCE

The engine sits at the very rear of the machine, as the cooling pack is centrally mounted in the chassis. A single-piece engine cover provides excellent all round access to the engine for service and maintenance, while all daily checks can be easily reached from ground level, with fluid sight gauges on all reservoirs. There are remote fluid drain taps for the engine oil, coolant and hydraulic oil, ensuring environmentally-friendly service with no loss of fluids to the surrounding area. Grease points are centrally located, to reduce downtime and increase productivity. The machine's electronic control system can be accessed by trained service personnel for fault diagnosis and operating data. This system is fully compatible with the Case service tool. All of the machine's electronics are situated within the cab, providing a central location and keeping them away from dust and dirt.







SPECIFICATIONS

ENGINE

Model _____ Case Family IV, 445TA/EGE, Tier III certified
 Type _____ 4-stroke, turbocharged and air to air cooled
 Bore/Stroke _____ 104 x 132 mm
 Displacement _____ 4.5 l
 Fuel injection _____ Electronic
 Fuel filter _____ Replaceable, full flow spin-on cartridge
 Air filter _____ Dry type element w/warning restriction indicator
Pump operating angle ratings
 Side-to-side _____ Rated 35°
 Fore and aft _____ Rated 35°
 Oil filtration _____ Replaceable, full flow spin-on cartridge

Horsepower - Peak

Max Power
 Gross _____ 142 (106 kW) @ 1800 rpm
 Net _____ 131 (98 kW) @ 1800 rpm
 Standard Power
 Gross _____ 129 (96 kW) @ 1800 rpm
 Net _____ 118 (88 kW) @ 1800 rpm
 Economy Power
 Gross _____ 110 (82 kW) @ 1700 rpm
 Net _____ 101 (75 kW) @ 1700 rpm

NOTE: Gross horsepower and torque per SAE J1995.
 Net horsepower and torque per SAE J1349.

Torque - Peak

Max Power
 Gross _____ 448 (608 Nm) @ 1600 rpm
 Net _____ 424 (575 Nm) @ 1600 rpm
 Standard Power
 Gross _____ 407 (552 Nm) @ 1300 rpm
 Net _____ 391 (530 Nm) @ 1300 rpm
 Economy Power
 Gross _____ 403 (547 Nm) @ 1200 rpm
 Net _____ 389 (528 Nm) @ 1200 rpm
 Torque rise _____ 19%

DRIVETRAIN

Transmission

4F/3R Proportional w/Electronic Control
 Module torque sensing autoshift/manual shift and modulation
 Differential _____ Limited slip with 34% transfer
 on front and rear axles

Service brakes

Hydraulically actuated, maintenance-free, multiple wet disc
 w/accumulator to all four wheels.

Parking brakes

Spring-applied hydraulic release disc on transmission output
 shaft.

Travel speeds - km/h with 20.5x25 L3 Tires

	Forward	Reverse
1st	6.7	7.1
2nd	12.2	12.9
3rd	23.6	24.9
4th	39	NA

NOTE: Travel speeds at full engine throttle.

ELECTRICAL

Voltage _____ 24 Volts, negative ground
 Alternator _____ 70 amp
 Batteries _____ (2) 12 Volt

HYDRAULICS

Pump (steering/implement)
 Closed centered pressure/flow compensated
 Variable displacement _____ 134l/min @ 2000 rpm @ 250 bar

Loader control valve

Loader auxiliary steering

Filtration

10-micron, full flow replaceable cartridges on return line,
 condition indicator light for filter

CYCLE TIME

Raise w/rated bucket load _____ 5.6 sec
 Dump w/rated bucket load:
 Z-Bar _____ 1.1 sec
 XT _____ 1.1 sec
 Lower (empty)
 Power down _____ 3.7 sec
 Float down _____ 2.7 sec

CAPACITIES

Fuel tank _____ 189 l
 Hydraulic system
 Total _____ 114 l
 Reservoir _____ 57 l
 Transmission
 Service with filter _____ 18.9 l
 Front and rear axle
 Front axle _____ 22 l
 Rear axle _____ 22 l
 Engine oil w/filter _____ 12 l
 Cooling system _____ 22 l

OPERATING WEIGHTS

Z-Bar

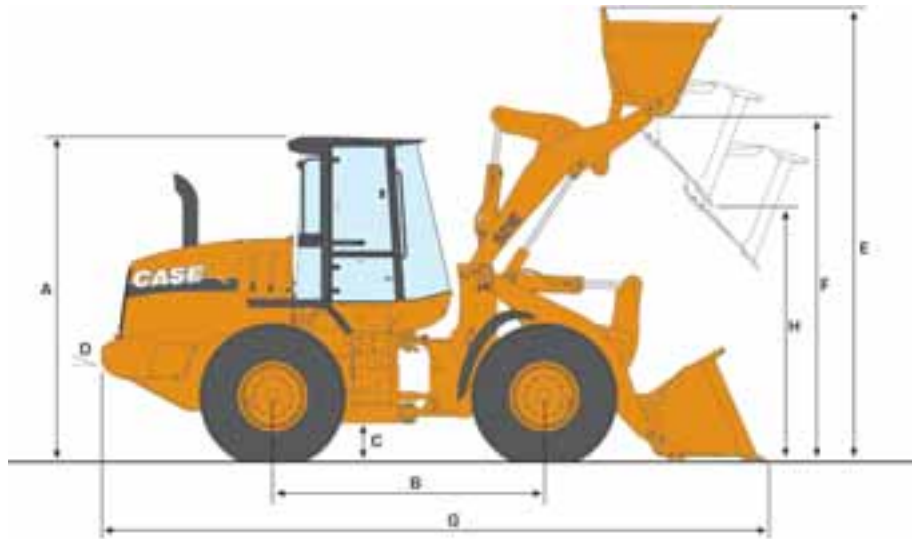
Unit equipped with ROPS cab with heater and A/C, full
 counterweight, 17.5x25 XTLA Michelin tires, front and rear
 fenders, 1.52 m³ general purpose loader bucket with edge, full
 fuel, 79 kg operator _____ 10 464 kg

XT

Unit equipped with ROPS cab with heater and A/C, full
 counterweight, 17.5x25 XTLA Michelin tires, 1.52 m³ ACS
 loader bucket, standard batteries, full fuel,
 79 kg operator _____ 11 906 kg



GENERAL DIMENSIONS 521E



DIMENSIONS

A	Height to top of ROPS cab	mm	3277
B	Wheelbase	mm	2750
C	Ground clearance	mm	377
D	Angle of departure		34°
Width			
	- overall* w/o bucket	mm	2489
	- centerline tread	mm	2000
	Turning radius* - outside	mm	4022
Turning angle			
	- from center		40°
	- total angle		80°
	Rear axle oscillation [total]		24°

NOTE: *Dimensions taken with 17.5x25 L2/L3/XTLA TL tires.

WEIGHT ADJUSTMENTS

Select Options

Select Options	Weight Adj. (kg)	Tipping Load Adj. Straight (kg)	Tipping Load Adj. 40° Turn (kg)
17.5x25 12 ply L2 tires	-116	-73	-64
17.5x25 12 ply L3 tires	-22	-14	-12
17.5R25 XHA TL tires	49	31	27
20.5R25 XHA TL	450	281	249
Base counterweight	- 476	- 1075	- 905

NOTE: ** Unit equipped with Z-Bar loader arms, 1.72 m³ general purpose pin on bucket w/bolt-on edge, 17.5R25 XTLA Michelin tires, ROPS cab with heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 79 kg operator. Adjust select options from rated weight.

PERFORMANCE DATA

521E Z-Bar*

		1.91 m ³ Bucket w/Bolt-on Edge	1.72 m ³ Bucket w/Bolt-on Edge	1.72 m ³ Bucket w/Teeth & segments	1.50 m ³ Bucket w/Bolt-on Edge	1.50 m ³ Bucket w/Teeth & segments
SAE bucket capacity - heaped	m ³	1.91	1.72	1.72	1.53	1.53
Bucket width - outside	mm	2490	2490	2490	2468	2468
Bucket weight	kg	934	899	749	705	736
E Operating height - fully raised w/spillguard	mm	4735	4673	4673	4599	4599
F Hinge pin height - fully raised	mm	3608	3608	3608	3603	3603
G Overall length - bucket level on ground	mm	6834	3762	6891	6568	6717
Dump angle - fully raised		55°	55°	55°	55°	55°
H Dump height - fully raised, 45° dump	mm	2616	2664	2578	2757	2659
J Bucket reach - fully raised, 45° dump	mm	1116	1071	1154	963	1064
K Bucket reach - 2.13 m height, 45° dump	mm	1492	1476	1507	1421	1496
Operating load - SAE	kg	3191	3512	3545	3634	3614
Maximum material density - SAE	kg/m ³	1542	1869	1927	2377	2364
Tipping load - SAE						
- straight	kg	8297	8091	8155	8357	8318
- 40° turn	kg	7230	7025	7089	7268	7229
Breakout force w/ tilt cylinder	kg	7518	8019	8366	9503	9473
Maximum rollback						
- Ground		40°	40°	40°	40°	40°
- Carry position		43°	43°	43°	43°	43°
- @ Maximum reach		52°	52°	52°	52°	52°
- @ full height		54°	54°	54°		
L Dig depth	mm	79	71	83	70	80
Maximum grading angle w/ bucket - back dragging		61°	60°	62°	60°	61°
Loader clearance circle [to front corner of bucket]	mm	11024	10981	11059	10872	10958
Unit Operating mass	kg	10672	10637	10587		

NOTE:

* Z-Bar performance data shown w/ full counterweight.

** XT lift arm with buckets for ACS Pro Series 2000® size 30 HD coupler.

*** XT lift arm with bucket for JRB 300HV coupler

Performance data unit equipped with 20.5R17.5 XTLA tires, ROPS cab w/heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 79 kg operator. Specifications per SAE J732, J1234, J695, J742 and J818.



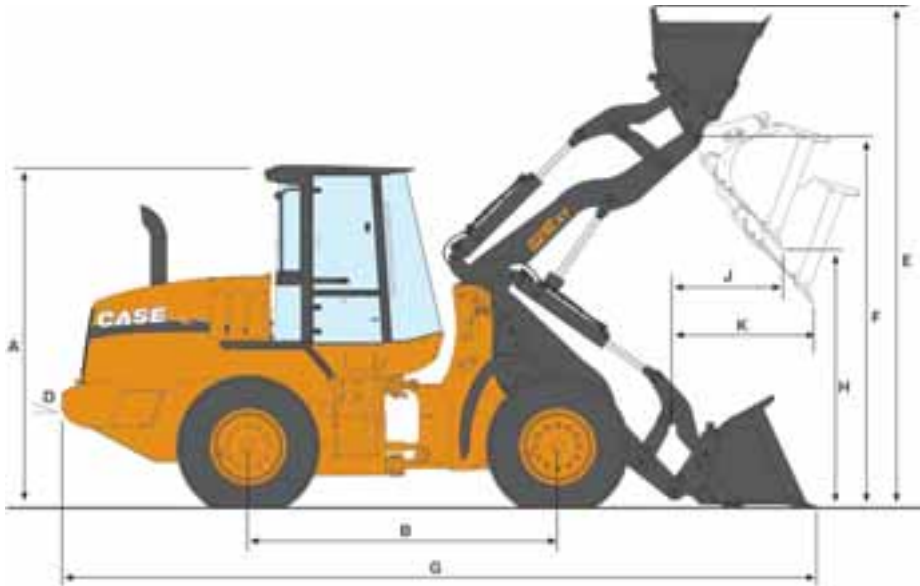


521E XT

AC

AC

GENERAL DIMENSIONS 521E^{XT}



DIMENSIONS

A	Height to top of ROPS cab	mm	3277
B	Wheelbase	mm	2750
C	Ground clearance	mm	377
D	Angle of departure		34°
Width			
	- overall* w/o bucket	mm	2489
	- centerline tread	mm	2000
	Turning radius* - outside	mm	4022
Turning angle			
	- from center		40°
	- total angle		80°
	Rear axle oscillation [total]		24°

NOTE: *Dimensions taken with 175x25 L2/L3/XTLA TL tires.

WEIGHT ADJUSTMENTS Select Options

	Weight Adj. (kg)	Tipping Load Adj. Straight (kg)	Tipping Load Adj. 40° Turn (kg)
175x25 12 ply L2 tires	-116	-73	-64
175x25 12 ply L3 tires	-22	-14	-12
175R25 XHA TL tires	49	31	27
20.5R25 XHA TL	450	281	249
Base counterweight	- 476	- 1075	- 905

NOTE: **Unit equipped with Z-Bar loader arms, 1.72 m³ general purpose pin on bucket w/ bolt-on edge, 175R25 XTLA Michelin tires, ROPS cab with heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 79 kg operator. Adjust select options from rated weight.

PERFORMANCE DATA

521E^{XT}

		1.50 m ³ ACS Bucket w/Edge**	1.50 m ³ ACS Bucket w/Teeth & segments**	1.50 m ³ JRB Bucket w/Edge***	1.50 m ³ JRB Bucket w/Edge & segment	
E	Operating height - fully raised w/spillguard	mm	4972	4972	4886	4886
F	Hinge pin height - fully raised	mm	3739	3739	3740	3740
G	Overall length - bucket level on ground	mm	6715	6860	6857	7004
	Dump angle - fully raised		57°	57°	57°	57°
H	Dump height - fully raised, 45° dump	mm	2734	2640	2609	2512
J	Bucket reach - fully raised, 45° dump	mm	1122	1218	1005	1106
K	Bucket reach - 2.13 m height, 45° dump	mm	1570	1613	1381	1420
	Operating load - ISO	kg	3095	3082	2941	2928
	Maximum material density - ISO	kg/m ³	2035	2026	1934	1925
Tipping load - ISO						
	- straight	kg	8297	7191	6846	6820
	- 40° turn	kg	7230	6163	5883	5856
Lift capacity						
	- full height	kg	4833	4807	4812	4787
	- maximum reach	kg	6622	6596	6763	6740
	- ground	kg	11183	11125	10301	10228
	Breakout force with tilt cylinder	kg	9947	8883	10158	9022
	Loader clearance circle	mm	10871	10935	10984	11054

NOTE:

* Z-Bar performance data shown w/ full counterweight.

** XT lift arm with buckets for ACS Pro Series 2000® size 30 HD coupler.

*** XT lift arm with bucket for JRB 300HV coupler.

Performance data unit equipped with 20.5R25 XTLA tires, ROPS cab w/ heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 79 kg operator. Specifications per SAE J732, J1234, J695, J742 and J818.



521E-EXT

STANDARD EQUIPMENT & OPTIONS

STANDARD EQUIPMENT

Operator environment

- ROPS cab w/ heat
- Key start
- Articulated power steering w/ tilt column
- Fully adjustable, suspension seat
- Foot throttle
- 1-Lever loader control w/ wrist rest
- Cup holder
- Coat hook
- (1) Interior rearview mirror
- 2 in (51 mm) retractable seat belt
- Storage tray behind seat
- Cooled lunch box
- Single brake pedal
- F/N/R shuttle switch
- External rear view mirrors
- Lock box
- Pressurized air filtering
- Anti-glare window strip
- Defroster
- Side window, partial/ fully open
- Dome light
- Wipers, rear and intermittent front
- Windshield washers, front and rear
- Rubber floor mat

Engine

- Case Family IV 445TA/EGE
- Tier III certified
- Selectable work modes
- Max power
- Auto power
- Standard power
- Economy power
- Turbocharger
- Charge air cooling
- Automatic fan belt tensioner

- Integral engine oil cooling
- Fuel filter w/ water trap
- Dual element air cleaner
- 70 amp alternator
- (2) 700 CCA 12-volt batteries
- Liquid-cooled radiator
- Non spark-arresting muffler
- Mid-mounted cooling module
- Common rail electronic fuel injection

Loader

- Z-bar loader linkage
- Single control for lift and tilt
- Positive hold float
- Automatic return-to-dig
- Automatic height control
- Automatic return-to-travel
- Brake pedal transmission disconnect
- Bucket position indicator on bucket

Drivetrain

- 4-wheel drive
- 4F/3R Selectable autoshift/ manual shift transmission
- Electronic Control Module - Programmable, computer controlled proportional shifting with programmable gear selection
- Onboard diagnostics
- Single lever electronic shift control
- F/N/R switch in loader control handle
- Downshift button
- Torque converter
- Outboard planetary axles
- Limited-slip differentials
- Transmission oil cooler
- Brake pedal transmission disconnect
- Hydraulic wet disc brakes
- Spring-applied hydraulic release parking brake

- Limp-Home Mode
- Lubed-for-life drive shaft

Hydraulics

- Single lever 2-spool loader control valve
- Low-effort steering
- Hydraulic driven fan
- (8) Diagnostic quick couplers

Other

- Front and rear fenders
- Lights
- (2) Front driving headlights (high/low beam)
- (2) Front flood
- (2) LED stop and tail lights
- (2) Rear flood
- Front and rear turn signal/flash
- Standard counterweight
- Drawbar hitch
- Articulation locking bar
- Lift arm locking bar
- Lift and tie-down points - front/rear
- Backup alarm
- Remote drain points

OPTIONS

Operator compartment

- Cloth-covered air-suspension seat
- Sound Shield noise suppression package
- Cab air-conditioning w/ heater
- Radio
- Radio-ready (12 or 24-volt)
- Auxiliary power (12-volt)
- Cab convenience package
- RH steps
- Rotating beacon
- Second brake pedal

Engine

- Cold weather package
- Fuel heater
- Hydraulic oil cooler bypass
- Low temperature hydraulic oil
- Grid heater

Loader

- Hydraulic attachment coupler
- Attachment auxiliary hydraulics
- Buckets (see page 3 & 4)
- Loader coupler systems
- XR Linkage

Hydraulics

- Auxiliary hydraulics
- Ride Control
- Secondary steering
- 3 or 4-spool loader valves with 2 or 3-lever loader control
- Hydraulic reversing fan
- Hydraulic cooler

Tires

- 175 tire options
- 20.5-25 12 PR L3 bias (rock)
- 20.5 R25 radial (dirt/traction)
- 20.5 R25 radial (rock)

Other

- Special paint
- Full coverage fenders
- Belly pan
- Tool box
- Full counterweight - Z-Bar
- Temperature controlled fan

Standard and optional equipment shown can vary by country.



INTERNATIONAL

CNH INTERNATIONAL SA
Riva Paradiso, 14
6902 Paradiso
SWITZERLAND

NOTE: Standard and optional fittings can vary according to the demands and specific regulations of each country. The illustrations may include optional rather than standard fittings - consult your Case dealer. Furthermore, CNH reserves the right to modify machine specifications without incurring any obligation relating to such changes.



Conforms to directive 98/37/CE

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CASE
CONSTRUCTION