



# 321E

## ARTICULATED WHEEL LOADER TIER III CERTIFIED

### ENGINE

Model	Case 432T/M3
Type	4-stroke
Cylinders	4
Bore/Stroke	3.89 in x 4.09 in (99 X 104 mm)
Displacement	195 in <sup>3</sup> (3.2 L)
Fuel injection	Direct
Fuel	#2 Diesel
Fuel filter	Replaceable, full flow spin-on cartridge
Air filter	Dry type element w/warning restriction indicator
Radiator	
Core type	Staggered
Fan	
Style	Direct drive
Lubrication/cooling oil pump	
Style	Integral
Engine oil	
Pump	Deep sump plate cooler with pressurized under-piston nozzles
Pump operating angle ratings	
Side-to-side	Rated 35°
Fore and aft	Rated 35°
Oil filtration	Replaceable, full flow spin-on cartridge
Engine speeds (rpm)	
Rated speed, full load	2300
Low idle	825-875
High idle, no load	2650-2750
Horsepower – Rated	
Gross	82 (61 kW) @ 2500 rpm
Net	77 (57 kW) @ 2500 rpm
Peak torque @ 1400 rpm	
Gross	229 lb-ft (310 N-m)
Net	226 lb-ft (306 N-m)
Torque rise	33%

NOTE: Gross horsepower and torque per ISO 9249.  
Net horsepower and torque per ISO 9249.

### DRIVETRAIN

Transmission	Hydrostatic transmission	
Pump relief	6,773 psi (46 700 kPa)	
Pump flow	43.1 gpm (163.3 L/min)	
Differential	Limited slip w/45% transfer on front axles	
Front and rear axle		
Differential ratio	3.46	
Planetary ratio	6.00	
Final axle ratio	22.00	
Planetaries	Outboard	
Service brakes	Hydraulically actuated, dry disc w/accumulator to front axle & joint shaft	
Parking brake	Mechanical	
Travel speeds – mph (km/h) w/405/70 R20 tires		
	Forward	Reverse
Low	0-3.7 (0-6)	0-3.7 (0-6)
High	0-12.4 (0-20)	0-12.4 (0-20)
Optional HTS (High Travel Speed)		
	Forward	Reverse
Low	0-3.7 (0-6)	0-3.7 (0-6)
High	0-10.3 (0-16.5)	0-10.3 (0-16.5)
HTS engaged		
	0-21.7 (0-35)	0-21.7 (0-35)

NOTE: Travel speeds at full engine throttle.

### ELECTRICAL

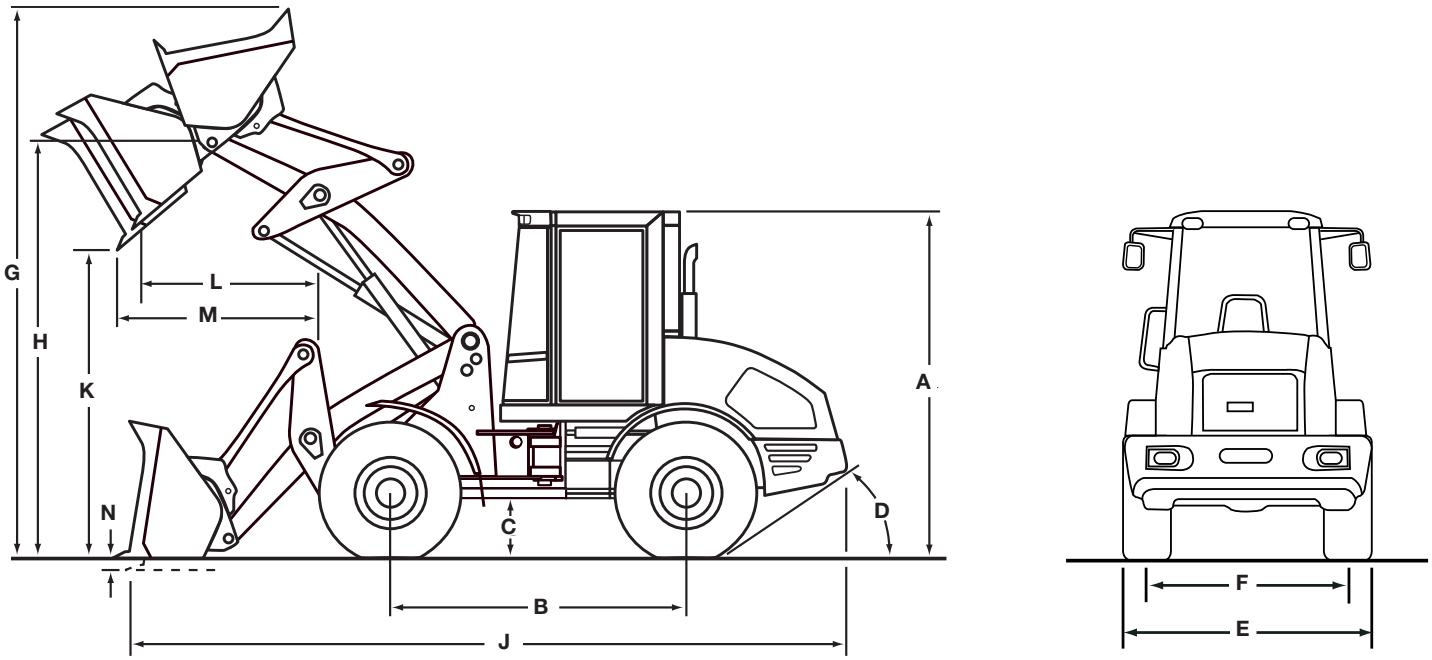
Voltage	12 Volts, negative ground
Alternator	95 amp
Batteries	95 AHR 900 CCA

### HYDRAULICS

Pump (steering/implement)	Open-centered pressure/flow compensated
Fixed gear type	21.1 gpm @ 2500 rpm @ 3916 psi (80 L/min @ 2500 rpm @ 27 000 kPa)
Loader control valve	Open-center, 1 lever loader control w/ forward/reverse switch, detents in float
Loader auxiliary steering	Hydraulic orbital center-pivot articulating w/on-demand oil flow
Main relief pressure @ valve	3,626 psi (25 000 kPa)
Filtration	15-micron, full flow replaceable cartridges on return line

### CYLINDERS

Lift cylinder	
Bore diameter	3.5 in (90 mm)
Rod diameter	2.0 in (50 mm)
Stroke	28.4 in (721 mm)
Dump cylinder	
Bore diameter	3.5 in (90 mm)
Rod diameter	2.0 in (50 mm)
Stroke	18.0 in (459 mm)



## DIMENSIONS

Height to –	
A. Top of ROPS cab	110.5 in (2806 mm)
B. Wheelbase	92.5 in (2350 mm)
C. Ground clearance under shaft	16.0 in (415 mm)
C. Ground clearance under axles	13.0 in (330 mm)
D. Angle of departure	35°
Width –	
E. Overall* w/o bucket	79.6 in (1981 mm)
F. Centerline tread	61.8 in (1570 mm)
Turning radius* – outside	
163.5 in (4154 mm)	
Turning angle –	
From center	41°
Total angle	82°
Rear axle oscillation, total	
24°	

NOTE: \*Dimensions taken with 405/70 R20 tires. Additional dimensions on pages 3 & 4.

## PERFORMANCE DATA

<b>321E Versa-Boom</b>	<b>1.44 yd<sup>3</sup> GP (1.10 m<sup>3</sup>)</b>	<b>1.31 yd<sup>3</sup> GP (1.00 m<sup>3</sup>)</b>
	<b>Bucket w/Bolt-on Edge</b>	<b>Bucket w/Bolt-on Edge</b>
SAE bucket capacity – struck	1.18 yd <sup>3</sup> (0.90 m <sup>3</sup> )	1.09 yd <sup>3</sup> (0.84 m <sup>3</sup> )
Heaped	1.44 yd <sup>3</sup> (1.10 m <sup>3</sup> )	1.31 yd <sup>3</sup> (1.00 m <sup>3</sup> )
Bucket width – outside	82.7 in (2100 mm)	82.7 in (2100 mm)
Bucket weight	999 lb (453 kg)	948 lb (430 kg)
<b>G.</b> Operating height – fully raised w/spillguard	178.7 in (4539 mm)	176.2 in (4476 mm)
<b>H.</b> Hinge pin height – fully raised	136.2 in (3459 mm)	136.2 in (3459 mm)
<b>J.</b> Overall length – bucket level on ground	226.6 in (5755 mm)	224.5 in (5703 mm)
Dump angle – fully raised	45°	45°
<b>K.</b> Dump height – fully raised, 45° dump	103.8 in (2635 mm)	105.2 in (2671 mm)
<b>L.</b> Bucket reach – fully raised, 45° dump	34.9 in (888 mm)	33.6 in (852 mm)
<b>M.</b> Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	51.7 in (1314 mm)	51.2 in (1300 mm)
<b>N.</b> Dig depth	3.5 in (88 mm)	3.5 in (88 mm)
Operating load – ISO	4,139 lb (1877 kg)	4,140 lb (1878 kg)
Maximum material density – ISO	2,877 lb/yd <sup>3</sup> (1707 kg/m <sup>3</sup> )	3,166 lb/yd <sup>3</sup> (1878 kg/m <sup>3</sup> )
Tipping load – ISO		
Straight	9,744 lb (4420 kg)	9,741 lb (4418 kg)
Straight w/ optional counterweight	10,302 lb (4673 kg)	10,299 lb (4671 kg)
20° turn	8,277 lb (3,755 kg)	8,281 lb (3756 kg)
20° turn w/ optional counterweight	8,750 lb (3969 kg)	8,754 lb (3970 kg)
Lift capacity –		
Full height	7,100 lb (3221 kg)	7,150 lb (3243 kg)
Maximum reach	9,564 lb (4338 kg)	9,615 lb (4361 kg)
Ground	13,355 lb (6058 kg)	13,405 lb (6080 kg)
Breakout force w/tilt cylinder	11,241 lb (5099 kg)	11,982 lb (5435 kg)
Maximum rollback –		
Ground	47°	47°
Carry position	52°	52°
@ Maximum reach	54°	54°
@ Full height	54°	54°
Maximum grading angle w/bucket – back dragging	111°	109°
Loader clearance circle	367.6 in (9337 mm)	366.5 in (9310 mm)

### 47.2 in (1200 mm) Forks

Fork weight	816 lb (370 kg)
Operating load – level ground	4,885 lb (2216 kg)
Tipping load – straight	7,197 lb (3265 kg)
Tipping load – 40° turn	6,106 lb (2770 kg)
Fork load center	19.7 in (500 mm)

## INSTRUMENTATION

Electronic Information Center

Displays/Gauges –

- Fuel level
- Hourmeter
- Engine oil temperature

Indicator lights –

- Hydraulic oil temperature
- Alternator
- Work lights\*
- Brake pressure
- Parking brake
- Air conditioning\*
- Air filter restriction
- Travel direction F/R
- Speed range selected
- Shift pressure\*
- Turn signal indicator
- Engine oil temperature
- Engine oil pressure
- Preheating indicator lamp
- High beam lights

Audible alarms –

- Caution alarm
- Critical alarm
- Backup alarm

Horn

NOTE: \*If equipped with option.

## OPERATOR ENVIRONMENT

Cab w/heat

Key start

Articulated power steering w/tilt column

Fully adjustable, cloth suspension seat

Foot throttle

Single lever electronic speed shift control,  
F/N/R switch in loader control handle

Cup holder

Retractable seat belt

Storage tray

Sun screen – front

Defroster

Opening side window – 180°

Dome light

Wipers rear & front

12-volt auxiliary power

External rearview mirrors

R.H. steps

Coat hook

Loader control lockout

## LOADER

Versa-Boom loader linkage

Single control for lift and tilt

Positive hold float

Skid steer compatible attachment coupler

## CYCLE TIME

Raise w/rated bucket load 6.0 sec

Dump w/rated bucket load

Versa-Boom 1.0 sec

Lower (empty)

Float down 3.0 sec

## SERVICE CAPACITIES

Fuel tank 26.0 gal (100 L)

Hydraulic system

Total 19.5 gal (74 L)

Reservoir 10.5 gal (40 L)

Front and rear axle

Total axle (each) 2.11 gal (8.0 L)

Engine oil w/filter 2.3 gal (8.5 L)

Cooling 4.4 gal (16.5 L)

## OPERATING WEIGHTS

### Versa-Boom

Unit equipped with ROPS cab with heater, standard counterweight, 405/70 R20 Dunlop tires, front and rear fenders, 1.31 yd<sup>3</sup> (1.0 m<sup>3</sup>) general purpose loader bucket w/edge, full fuel, 165 lb (75 kg) operator 12,676 lb (5750 kg)

With optional counterweight 12,997 lb (5896 kg)

## STANDARD EQUIPMENT

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### OPERATOR'S ENVIRONMENT

See page 4

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### ENGINE

Case 432T/M3  
Fuel filter w/water trap  
Dual element air cleaner  
95 amp alternator  
(1) 900 CCA 12-volt battery  
Liquid-cooled radiator

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### LOADER

See page 4

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### DRIVETRAIN

4-wheel drive  
Hydrostatic transmission  
Single lever electronic speed shift control,  
F/N/R switch in loader control handle  
Outboard planetary axles  
Limited slip differential, front axle  
Transmission oil cooler  
Hydraulic dry disc brakes  
Mechanical parking brake

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### HYDRAULICS

3-spool loader control valve  
(8) Diagnostic quick couplers  
Auxiliary hydraulics

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### OTHER

Front and rear fenders  
Lights –  
(2) Front flood lights  
(2) Front driving headlights (high/low beam)  
(2) Stop/tail lights and backup light  
Front and rear turn signal/flash  
Drawbar pin  
Articulation locking pin  
Tie-down points – front/rear  
Backup alarm  
Wired for radio  
Bucket position indicator

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## OPTIONAL EQUIPMENT

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### OPERATOR'S COMPARTMENT

Cab air conditioning w/heater  
Rotating beacon  
Limited slip rear axle  
High travel speed (HTS)  
0-21.7 mph (0-35 km/h)  
Radio ready antenna and speakers

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### OTHER

(2) Rear flood lights  
Tool box

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### LOADER

Buckets (see page 3)  
General Purpose  
4-IN-1  
Forks  
Ride Control  
Return To Dig

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### TIRES

405/70 R20 EM SPT9  
405/75 R20 XM27  
14.5 x 20 MPT E91

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### COUNTERWEIGHT

321 lb (146 kg)  
Mounts on rear chassis

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NOTE: All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

NOTE: All engines meet current EPA emissions requirements.

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