

321D

SERIES 2 ARTICULATED WHEEL LOADER TIER II CERTIFIED

ENGINE

Model	Deutz BF4M2011 Tier 2 certified
Type	4-stroke
Cylinders	4
Bore/Stroke	3.70 in x 4.41 in (94 X 112 mm)
Displacement	190 in ³ (3.11 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	Puller
Diameter	21 in (535 mm)
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	900-950
High idle, no load	2390-2480
Horsepower – Rated	
Gross	75 (56 kW) @ 2300 rpm
Net	72 (53.5 kW) @ 2300 rpm
Peak torque @ 1600 rpm	
Gross	199 lb-ft (270 N·m)
Net	158 lb-ft (256 N·m)
Torque rise	9.00%

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

DRIVETRAIN

Transmission	Hydrostatic transmission
Pump relief	6,743 psi (46 500 kPa)
Pump flow	40 gpm (152.1 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 brakes	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	0-11.2 (0-18) 0-11.2 (0-18)
HTS engaged	
	0-21.7 (0-35) 0-21.7 (0-35)

NOTE: Travel speeds at full engine throttle.

ELECTRICAL

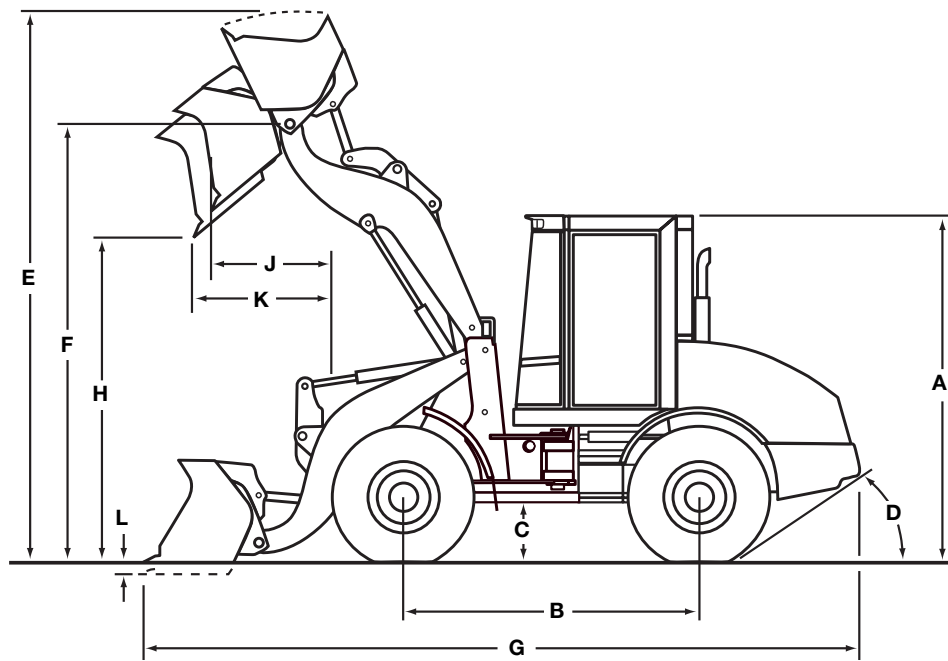
Voltage	12 Volts, negative ground
Alternator	55 amp
Batteries	(1) 12-Volt

HYDRAULICS

Pump (steering/implement)	
	Open-centered pressure/flow compensated
Fixed gear type	
	19 gpm @ 2200 rpm @ 3335 psi (72.1 L/min @ 2200 rpm @ 23 000 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	3,335 psi (23 000 kPa)
Filtration	
	15-micron, full flow replaceable cartridges on return line

CYLINDERS

Lift cylinder	
Bore diameter	3.3 in (85 mm)
Rod diameter	2.0 in (50 mm)
Stroke	26.6 in (675 mm)
Dump cylinder (Z-Bar)	
Bore diameter	3.9 in (100 mm)
Rod diameter	2.0 in (50 mm)
Stroke	16.9 in (430 mm)



DIMENSIONS

Height to –	
A. Top of ROPS cab	109.7 in (2785 mm)
B. Wheelbase	92.5 in (2350 mm)
C. Ground clearance under shaft	18.3 in (465 mm)
C. Ground clearance under brake disc	14.4 in (365 mm)
D. Angle of departure	35°
Width –	
Overall* w/o bucket	77.9 in (1978 mm)
Centerline tread	60 in (1526 mm)
Turning radius* – outside	162.7 in (4132 mm)
Turning angle –	
From center	20.5°
Total angle	41°
Rear axle oscillation, total	24°

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

PERFORMANCE DATA

321D Z-Bar	1.44 yd ³ GP (1.10 m ³)	1.31 yd ³ GP (1.00 m ³)
	Bucket w/Bolt-on Edge	Bucket w/Bolt-on Edge
SAE bucket capacity – struck	1.20 yd ³ (0.92 m ³)	1.10 yd ³ (0.84 m ³)
Heaped	1.44 yd ³ (1.10 m ³)	1.31 yd ³ (1.00 m ³)
Bucket width – outside	82.7 in (2100 mm)	82.7 in (2100 mm)
Bucket weight	1,069 lb (485 kg)	1,058 lb (480 kg)
E. Operating height – fully raised w/spillguard	167.5 in (4254 mm)	167.5 in (4254 mm)
F. Hinge pin height – fully raised	131.7 in (3344 mm)	131.7 in (3344 mm)
G. Overall length – bucket level on ground	217.8 in (5531 mm)	217.8 in (5531 mm)
Dump angle – fully raised	42°	42°
H. Dump height – fully raised, 45° dump	104.7 in (2659 mm)	104.7 in (2659 mm)
J. Bucket reach – fully raised, 45° dump	35.0 in (889 mm)	35.0 in (889 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	49.3 in (1253 mm)	49.3 in (1253 mm)
L. Dig depth	3.5 in (88 mm)	3.5 in (88 mm)
Operating load – SAE	3,864 lb (1753 kg)	3,887 lb (1763 kg)
Maximum material density – SAE	2,686 lb/yd ³ (1593 kg/m ³)	2,972 lb/yd ³ (1763 kg/m ³)
Tipping load – SAE		
Straight	9,496 lb (4307 kg)	9,550 lb (4332 kg)
Straight w/ optional counterweight	9,993 lb (4533 kg)	10,047 lb (4558 kg)
20° turn	7,728 lb (3506 kg)	7,775 lb (3527 kg)
20° turn w/ optional counterweight	8,123 lb (3685 kg)	8,170 lb (3706 kg)
Lift capacity –		
Full height	7,402 lb (3357 kg)	7,401 lb (3357 kg)
Maximum reach	9,393 lb (4261 kg)	9,410 lb (4268 kg)
Ground	12,571 lb (5702 kg)	12,639 lb (5733 kg)
Breakout force w/tilt cylinder	15,921 lb (7222 kg)	15,955 lb (7237 kg)
Maximum rollback –		
Ground	48°	48°
Carry position	52°	52°
@ Maximum reach	60°	60°
@ Full height	59°	59°
Maximum grading angle w/bucket – back dragging	62°	62°
Loader clearance circle	360.6 in (9158 mm)	360.6 in (9158 mm)

INSTRUMENTATION

Electronic Information Center

Displays/Gauges –

Fuel level
Hourmeter
Engine oil
Speedometer*

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
Glow plug
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

Dome light

Wipers rear & front

12-volt auxiliary power

External rearview mirrors

R.H. steps

Coat hook

Loader control lockout

LOADER

Z-bar loader linkage

Single control for lift and tilt

Positive hold float

Hydraulic attachment coupler

CYCLE TIME

Raise w/rated bucket load 6.6 sec

Dump w/rated bucket load

Z-Bar 1.1 sec

Lower (empty)

Float down 3.5 sec

SERVICE CAPACITIES

Fuel tank 26.4 gal (100 L)

Hydraulic system

Total 18.2 gal (70 L)

Reservoir 10.5 gal (40 L)

Front and rear axle

Total axle (each) 4 qt (3.7 L)

Engine oil w/filter 8 qt (7.5 L)

Cooling system

-36° F (-38° C) 3.4 gal (13 L)

OPERATING WEIGHTS

Z-Bar

Unit equipped with ROPS cab with heater,
standard counterweight, 405/70 R20 Dunlop
tires, front and rear fenders, 1.31 yd³ (1.0 m³)
general purpose loader bucket w/edge, full fuel,
165 lb (75 kg) operator 13,028 lb (5909 kg)

With optional
counterweight 13,424 lb (6089 kg)

STANDARD EQUIPMENT

OPERATOR'S ENVIRONMENT

See page 4

ENGINE

Deutz BF4M2011
Fuel filter w/water trap
Dual element air cleaner
55 amp alternator
(1) 750 CCA 12-volt battery
Liquid-cooled radiator

LOADER

See page 4

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

HYDRAULICS

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

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
Radio ready

OPTIONAL EQUIPMENT

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)

OTHER

(2) Rear flood lights

LOADER

Bucket position indicator
Buckets (see page 3)
General Purpose
4-IN-1
Scrap Grapple
Forks

HYDRAULICS

Auxiliary hydraulics

TIRES

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

COUNTERWEIGHT

396 lb (180 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.

IMPORTANT: CNH America LLC reserves the right to change these specifications without notice and without incurring any obligation relating to such change. CNH America LLC does not warrant the safety or reliability of attachments from other manufacturers.

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