

721D/XT

**ARTICULATED WHEEL LOADER
TIER II CERTIFIED**

ENGINE

Model	Case Family III 668TA/E2, Tier II certified
Type	4-stroke, turbocharged and air to air cooled
Cylinders	6
Bore/Stroke	4.09 in x 5.20 in (104 X 132 mm)
Displacement	411 in ³ (6.8 L)
Fuel injection	Direct
Fuel	#2 Diesel
Fuel filter	Replaceable, full flow spin-on cartridge
Air filter	Dry type element w/warning restriction indicator
Mid-mount cooling module	
External independent mounted coolers	
Fan	
Style	8 blade puller
Diameter	32 in (813 mm)
Water 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	2000
High idle, no load	2300-2380
Horsepower – Rated	
Gross	181 (135 kW) @ 2000 rpm
Net	170 (127 kW) @ 2000 rpm
Standard torque @ 1300 rpm	
Gross	590 lb-ft (800 N-m)
Net	566 lb-ft (767 N-m)
Torque rise @ 2000 rpm	24.8%

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

DRIVETRAIN

Transmission	4F/3R Proportional w/Electronic Control Module torque sensing autoshift/manual shift and modulation	
Gears	Helical cut	
Gear ratios	Forward	Reverse
1st	3.745	3.551
2nd	2.089	1.981
3rd	1.072	1.017
4th	0.636	NA
Torque converter		
Stall ratio	2.81:1	
Differential	Limited slip on front and rear axles	
Rear axle oscillation	24° total	
Axles	Front	Rear
Differential ratio	3.364	3.182
Planetary ratio	6.000	6.400
Final axle ratio	20.18	20.36
Planetaries	Outboard	
Service brakes	Hydraulically actuated, maintenance-free, multiple wet disc w/accumulator to all four wheels	
Brake surface area	480 in ² per hub (0.31 m ²)	
Parking brakes	Spring-applied hydraulic release disc on transmission output shaft	
Travel speeds – mph (km/h) w/20.5x25 L3 Tires	Forward	Reverse
1st	4.7 (7.6)	5.0 (8.0)
2nd	8.3 (13.3)	8.7 (14.0)
3rd	15.3 (24.6)	16.0 (25.7)
4th	23.6 (38.0)	NA

NOTE: Travel speeds at full engine throttle.

ELECTRICAL

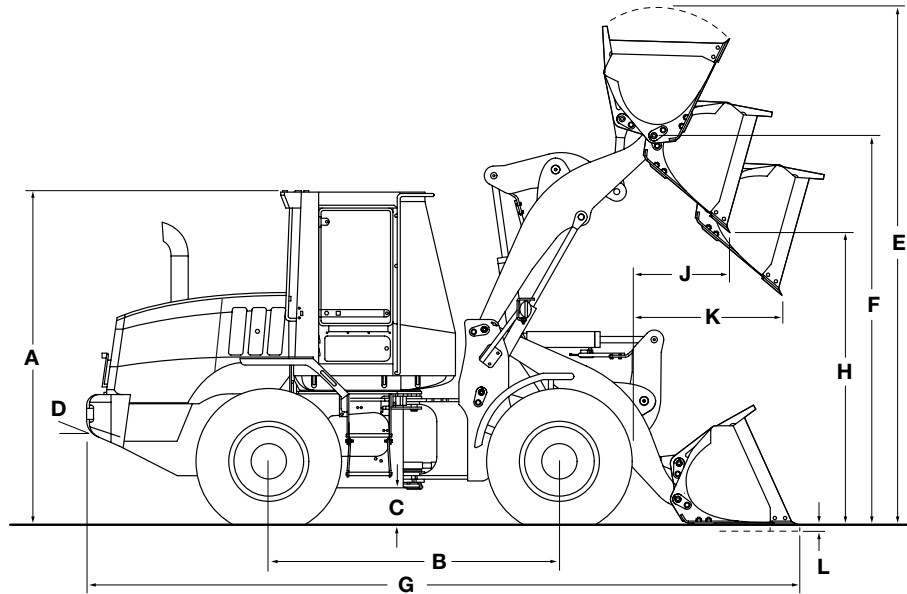
Voltage	24 Volts, negative ground
Alternator	70 amp
Batteries	(2) 12-Volt

HYDRAULICS

Pump (steering/implement)	Closed centered pressure/flow compensated
Variable displacement	3.84 in ³ /rev 31.6 gpm @ 2000 rpm @ 3600 psi (119.6 L/min @ 2000 rpm @ 24 821 kPa)
Implement pump	Closed centered pressure/flow compensated
Variable displacement	2.74 in ³ /rev 22.6 gpm @ 2000 rpm @ 3600 psi (85.6 L/min @ 2000 rpm @ 24 821 kPa)
Loader control valve	Closed-center, sectional 2, 3 or 4-spool with pilot control for lift, tilt and auxiliary hydraulics, electromagnetic detents in float, raise and rollback
Loader auxiliary steering	Hydraulic orbital center-pivot articulating w/on-demand oil flow
High pressure standby	3600 psi (24 821 kPa)
Filtration	10-micron, full flow replaceable cartridges on return line, condition indicator light for filter

CYLINDERS

Lift cylinder	
Bore diameter	4.75 in (120.6 mm)
Rod diameter	3.00 in (76.2 mm)
Stroke	32.59 in (827.9 mm)
Dump cylinder (Z-Bar)	
Bore diameter	5.75 in (146.0 mm)
Rod diameter	3.00 in (76.2 mm)
Stroke	24.78 in (629.4 mm)
Dump cylinder (XT)	
Bore diameter	4.50 in (114.3 mm)
Rod diameter	2.25 in (57.2 mm)
Stroke	33.72 in (856.5 mm)



DIMENSIONS

Height to –		
A.	Top of ROPS cab	131.4 in (3337 mm)
B.	Wheelbase	128.1 in (3253 mm)
C.	Ground clearance	14.4 in (365 mm)
D.	Angle of departure	32°
Width –		
	Overall* w/o bucket	102.5 in (2603 mm)
	Centerline tread	79.9 in (2029 mm)
	Turning radius* – outside	227.2 in (5770 mm)
Turning angle –		
	From center	40°
	Total angle	80°
	Rear axle oscillation, total	24°

NOTE: *Dimensions taken with 20.5R25 Michelin XTLA tires. Additional dimensions on pages 3 & 4.

WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment Straight	Tipping Load Adjustment 40° Turn
ROPS canopy	-295 lb (-134 kg)	-352 lb (-160 kg)	-326 lb (-148 kg)
20.5x25 12 ply L2 tires	-100 lb (-46 kg)	-82 lb (-37 kg)	-72 lb (-33 kg)
20.5x25 12 ply L3 tires	+228 lb (+103 kg)	+185 lb (+84 kg)	+163 lb (+74 kg)
20.5R25 XHA TL tires	+380 lb (+172 kg)	+309 lb (+140 kg)	+273 lb (+124 kg)
Standard counterweight	-1,224 lb (-555 kg)	-2,896 lb (-1314 kg)	-2,452 lb (-1112 kg)

NOTE: **Unit equipped with Z-Bar loader arms, 3.0 yd3 (2.3 m3) general purpose pin on bucket w/bolt-on edge, 20.5R25 XTLA Michelin tires, ROPS cab with heater and air conditioner, full counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator. Adjust select options from rated weight.

PERFORMANCE DATA

721D Z-Bar*

	3.5 yd³ GP (2.70 m³) Bucket w/Bolt-on Edge	3.25 yd³ GP (2.49 m³) Bucket w/Bolt-on Edge
SAE bucket capacity – struck	3.01 yd³ (2.30 m³)	2.76 yd³ (2.11 m³)
Heaped	3.50 yd³ (2.68 m³)	3.25 yd³ (2.49 m³)
Bucket width – outside	106.3 in (2700 mm)	106.3 in (2700 mm)
Bucket weight	2,772 lb (1257 kg)	2,615 lb (1186 kg)
E. Operating height – fully raised w/spillguard	208.5 in (5297 mm)	205.8 in (5228 mm)
F. Hinge pin height – fully raised	156.6 in (3979 mm)	156.6 in (3979 mm)
G. Overall length – bucket level on ground	303.4 in (7708 mm)	301.1 in (7648 mm)
Dump angle – fully raised	55°	55°
H. Dump height – fully raised, 45° dump	113.7 in (2889 mm)	115.3 in (2927 mm)
J. Bucket reach – fully raised, 45° dump	46.1 in (1172 mm)	44.3 in (1126 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	66.4 in (1688 mm)	65.3 in (1659 mm)
Operating load – ISO	11,967 lb (5428 kg)	12,036 lb (5459 kg)
Maximum material density – ISO	3,419 lb/yd³ (2029 kg/m³)	3,702 lb/yd³ (2196 kg/m³)
Tipping load – ISO		
Straight	27,616 lb (12 526 kg)	27,754 lb (12 589 kg)
40° turn	23,933 lb (10 856 kg)	24,072 lb (10 919 kg)
Lift capacity –		
Full height	16,005 lb (7260 kg)	16,162 lb (7331 kg)
Maximum reach	22,386 lb (10 154 kg)	22,551 lb (10 229 kg)
Ground	29,687 lb (13 466 kg)	29,992 lb (13 604 kg)
Breakout force w/tilt cylinder	29,806 lb (13 520 kg)	31,433 lb (14 258 kg)
Maximum rollback –		
Ground	40°	39°
Carry position	43°	43°
@ Maximum reach	54°	54°
@ Full height	57°	57°
L. Dig depth	3.0 in (76 mm)	3.0 in (76 mm)
Maximum grading angle w/bucket – back dragging	60°	60°
Loader clearance circle	498.8 in (12 670 mm)	497.5 in (12 636 mm)

721D/XT

	3.0 yd³ GP (2.3 m³) ACS Bucket w/Edge**	3.0 yd³ GP (2.3 m³) ACS Bucket w/Teeth & Segments**
E. Operating height – fully raised w/spillguard	217.8 in (5531 mm)	217.8 in (5531 mm)
F. Hinge pin height – fully raised	163.7 in (4157 mm)	163.7 in (4157 mm)
G. Overall length – bucket level on ground	311.8 in (7919 mm)	317.5 in (8065 mm)
Dump angle – fully raised	55°	55°
H. Dump height – fully raised, 45° dump	115.3 in (2930 mm)	111.6 in (2834 mm)
J. Bucket reach – fully raised, 45° dump	50.4 in (1279 mm)	54.4 in (1381 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	72.3 in (1836 mm)	74.5 in (1891 mm)
Operating load – ISO	10,571 lb (4795 kg)	10,590 lb (4804 kg)
Maximum material density – ISO	3,571 lb/yd³ (2119 kg/m³)	3,578 lb/yd³ (2123 kg/m³)
Tipping load – ISO		
Straight	24,545 lb (11 133 kg)	24,583 lb (11 151 kg)
40° turn	21,141 lb (9590 kg)	21,180 lb (9607 kg)
Lift capacity –		
Full height	14,019 lb (6359 kg)	14,055 lb (6375 kg)
Maximum reach	19,777 lb (8971 kg)	19,813 lb (8987 kg)
Ground	31,059 lb (14 088 kg)	30,960 lb (14 043 kg)
Breakout force w/tilt cylinder	28,046 lb (12 721 kg)	25,547 lb (11 588 kg)
Loader clearance circle	494.9 in (12 571 mm)	497.4 in (12 634 mm)

3.25 yd³ GP (2.49 m³) Bucket w/Teeth & Segments	3.0 yd³ GP (2.3 m³) Bucket w/Bolt-on Edge	3.0 yd³ GP (2.3 m³) Bucket w/Teeth & Segments
2.76 yd³ (2.11 m³)	2.53 yd³ (1.94 m³)	2.53 yd³ (1.94 m³)
3.25 yd³ (2.49 m³)	3.01 yd³ (2.30 m³)	3.01 yd³ (2.30 m³)
107.7 in (2736 mm)	106.3 in (2700 mm)	107.7 in (2736 mm)
2,807 lb (1273 kg)	2,506 lb (1137 kg)	2,699 lb (1224 kg)
205.8 in (5228 mm)	203.5 in (5168 mm)	203.5 in (5168 mm)
156.6 in (3979 mm)	156.6 in (3979 mm)	156.6 in (3979 mm)
307.0 in (7799 mm)	299.1 in (7596 mm)	305.0 in (7747 mm)
55°	55°	55°
111.3 in (2828 mm)	116.6 in (2961 mm)	112.6 in (2861 mm)
48.5 in (1232 mm)	42.8 in (1087 mm)	46.9 in (1192 mm)
67.6 in (1717 mm)	64.3 in (1633 mm)	66.7 in (1694 mm)
11,918 lb (5406 kg)	12,067 lb (5474 kg)	11,950 lb (5420 kg)
3,665 lb/yd³ (2175 kg/m³)	4,009 lb/yd³ (2379 kg/m³)	3,970 lb/yd³ (2356 kg/m³)
27,518 lb (12 482 kg)	27,812 lb (12 615 kg)	27,577 lb (12 509 kg)
23,836 lb (10 812 kg)	24,135 lb (10 947 kg)	23,900 lb (10 841 kg)
15,970 lb (7244 kg)	16,271 lb (7380 kg)	16,078 lb (7293 kg)
22,355 lb (10 140 kg)	22,665 lb (10 281 kg)	22,469 lb (10 192 kg)
29,790 lb (13 512 kg)	30,227 lb (13 711 kg)	30,023 lb (13 618 kg)
31,256 lb (14 177 kg)	32,958 lb (14 950 kg)	32,780 lb (14 869 kg)
40°	39°	40°
43°	43°	43°
54°	54°	54°
57°	57°	57°
3.3 in (84 mm)	3.0 in (76 mm)	3.3 in (84 mm)
61°	60°	61°
502.3 in (12 757 mm)	496.3 in (12 607 mm)	501.1 in (12 727 mm)

3.0 yd³ GP (2.3 m³) JRB Bucket w/Edge***	3.0 yd³ (2.3 m³) JRB Bucket w/Teeth & Segments***
217.4 in (5523 mm)	217.4 in (5523 mm)
163.7 in (4158 mm)	163.7 in (4158 mm)
309.3 in (7857 mm)	315.3 in (8008 mm)
55°	55°
116.5 in (2960 mm)	112.6 in (2860 mm)
46.5 in (1182 mm)	50.7 in (1288 mm)
69.0 in (1753 mm)	71.3 in (1811 mm)
10,982 lb (4981 kg)	10,947 lb (4966 kg)
3,710 lb/yd³ (2201 kg/m³)	3,698 lb/yd³ (2194 kg/m³)
25,433 lb (11 536 kg)	25,363 lb (11 505 kg)
21,964 lb (9963 kg)	21,894 lb (9931 kg)
14,788 lb (6708 kg)	14,726 lb (6680 kg)
20,421 lb (9263 kg)	20,362 lb (9236 kg)
30,644 lb (13 900 kg)	30,481 lb (13 826 kg)
30,407 lb (13 792 kg)	27,357 lb (12 409 kg)
495.0 in (12 574 mm)	497.6 in (12 639 mm)

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 buckets for JRB 500 HV coupler.

Performance data unit equipped with 20.5R25 Michelin XTLA tires, ROPS cab w/heater and A/C, full counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (75 kg) operator. Specifications per SAE J732, J1234, J695, J742, and J818.

INSTRUMENTATION

Electronic Information Center
Displays/Gauges –
Speedometer
Tachometer
Direction selected F/N/R
Transmission modes – Auto shift/Manual shift
Gear selected
Gear position
Turn signal indicator
Engine coolant temperature
Engine oil pressure
Fuel level
Transmission oil temperature
Hydraulic oil temperature
Voltmeter
Hourmeter
Indicator lights –
Beacon*
Work lights
Loader control lockout
Low coolant
Brake pressure
Master indicator
Secondary steering*
Parking brake
Air conditioning*
Hydraulic oil filter
Transmission filter
Air filter
Audible alarms –
Caution alarm
Critical alarm
Backup alarm
Horn

NOTE: *If equipped with option.

OPERATOR ENVIRONMENT

ROPS canopy
Key start
Articulated power steering w/tilt column
Fully adjustable, vinyl suspension seat
Foot throttle
1-Lever loader control w/wrist rest
Cup holder
Coat hook
(2) Interior rearview mirrors
3 in (76 mm) retractable seat belt
Storage tray behind seat
Lunch box retainer strap
Dual brake pedals
F/N/R shuttle switch

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

CYCLE TIME

Raise w/rated bucket load	5.59 sec
Dump w/rated bucket load	
Z-Bar	2.4 sec
XT	1.9 sec
Lower (empty)	
Power down	3.29 sec
Float down	3.29 sec

SERVICE CAPACITIES

Fuel tank	65 gal (246 L)
Hydraulic system	
Total	51.0 gal (193.1 L)
Reservoir	27.9 gal (105.7 L)
Transmission	
Service w/filter	6.75 gal (25.6 L)
Front and rear axle	
Front axle	32.0 qt (30.3 L)
Rear axle	29 qt (27.4 L)
Engine oil w/filter	15 qt (14.2 L)
Cooling system (-40)	39 qt (36.9 L)

OPERATING WEIGHTS

Z-Bar

Unit equipped with ROPS cab with heater and A/C, full counterweight, 20.5R25 XTLA Michelin tires, front and rear fenders, 3.0 yd³ (2.3 m³) general purpose loader bucket w/edge, full fuel, 175 lb (79 kg) operator 30,644 lb (13 900 kg)

XT

Unit equipped with ROPS cab with heater and A/C, full counterweight, 20.5R25 XTLA Michelin tires, 3.0 yd³ (2.3 m³) ACS loader bucket, standard batteries, full fuel, 175 lb (79 kg) operator 31,574 lb (14 322 kg)

STANDARD EQUIPMENT

OPERATOR'S ENVIRONMENT

See page 5

ENGINE

Case Family III 668TA/E2
Tier II certified
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
Electronic fuel injection
Cold weather grid heater
Fuel filter heater

LOADER

See page 5

OPTIONAL EQUIPMENT

OPERATOR'S COMPARTMENT

Cab with –
Pressurized, air filtering
Anti-glare window strip and visor
Defroster
Cloth-covered mechanical suspension seat
Side windows, partial/fully opening
Dome light
Wipers, rear and intermittent front
Windshield washers, front and rear
Rubber floor mat
Cloth-covered air-suspension seat
Sound Shield noise suppression package
Cab heater
Cab air-conditioning w/heater
Radio
Radio-ready (12 or 24-volt)
Auxiliary power (12-volt)
Lighter (24-volt)
External rearview mirrors
RH steps and platform
Rotating beacon

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

ENGINE

Engine block heater
Spark arresting muffler

LOADER

Hydraulic attachment coupler
Attachment auxiliary hydraulics
Buckets (see page 3 & 4)
Loader coupler systems
XT 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
Banked hydraulic diagnostic ports

HYDRAULICS

2-spool loader control valve
Flow-amplified, wide-angle steering
(8) Diagnostic quick couplers

OTHER

Electric hood lift
Front and rear fenders
Lights –
(2) Front driving headlights (high/low beam)
(2) Front flood
(2) Stop/tail lights and backup light
(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

TIRES

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

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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