



21D Articulated Wheel Loader

ENGINE

Model Perkins 704-30
Type 4-stroke
Cylinders 4
Bore/Stroke 3.82" x 3.94"
(97 X 100 mm)
Displacement 183 in³ (2.96 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" (535 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 2500
Low idle 1020-1080
High idle, no load 2220-2280
Horsepower – Rated
Gross 56.5 (41.5 kW) @ 2300 rpm
Net 53 (39 kW) @ 2300 rpm
Peak torque @ 1800 rpm
Gross 141 lb-ft (190 N·m)
Net 133 lb-ft (180 N·m)
Torque rise @ 2000 rpm 9.83%

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 23 gpm (88.4 L/min)
Differential Front limited slip
w/45% transfer on front axles
Front axle
Differential ratio 2.91
Planetary ratio 6.00
Final axle ratio 17.45
Planetaries Outboard
Service brakes Hydraulically
actuated, maintenance-free,
multiple wet disc w/accumulator
to rear axle & joint shaft
Brake surface area ... 210.8 in² per hub
(0.136 m²)
Parking brakes Mechanical
Travel speeds – mph (km/h)
w/335/80 R18 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)

NOTE: Travel speeds at full engine throttle.

ELECTRICAL

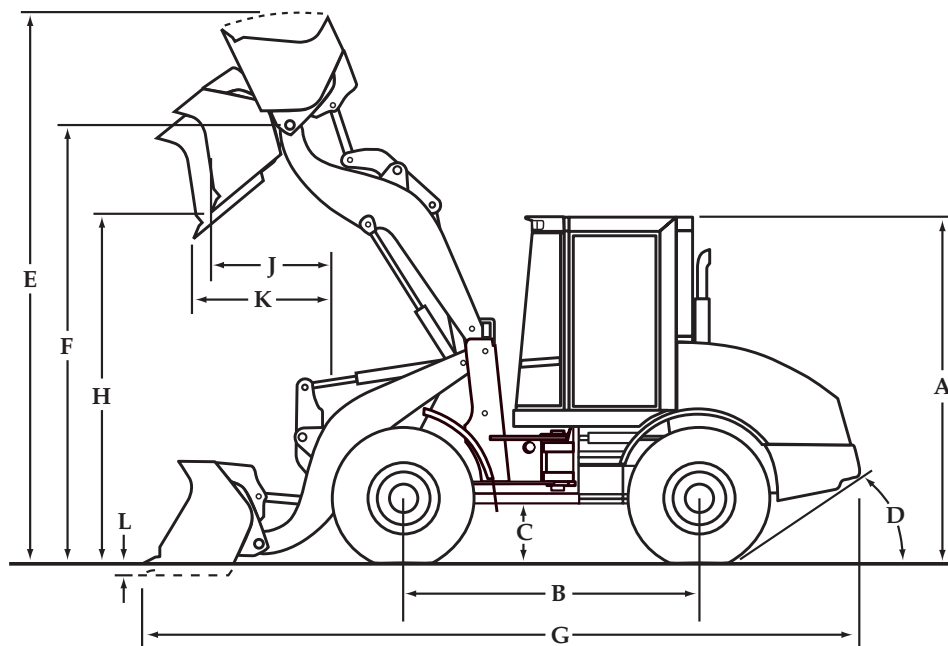
Voltage 12 Volts, negative ground
Alternator 65 amp
Batteries (1) 12-Volt

HYDRAULICS

Pump (steering/
implement) Open-centered
pressure/flow compensated
Fixed gear type
13.5 gpm @ 2300 rpm @ 3335 psi
(52 L/min @ 2300 rpm @ 23 000 kPa)
Loader control valve Open-center,
1 lever loader control w/
forward/neutral/reverse switch,
float detent
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, condition indicator
light for filter

CYLINDERS

Lift cylinder
Bore diameter 3.0" (75 mm)
Rod diameter 1.8" (45 mm)
Stroke 22.6" (574 mm)
Dump cylinder (Z-Bar)
Bore diameter 3.1" (80 mm)
Rod diameter 1.6" (40 mm)
Stroke 16.9" (430 mm)



DIMENSIONS

Height to –

A. Top of ROPS cab 105.5" (2679 mm)

B. Wheelbase 83.3" (2117 mm)

C. Ground clearance 13.0" (330 mm)

D. Angle of departure 32°

Width –

Overall* w/o bucket 70.1" (1780 mm)

Centerline tread 56.7" (1440 mm)

Turning radius* – outside 146.5" (3721 mm)

Turning angle –

From center 41°

Total angle 82°

Rear axle oscillation, total 24°

NOTE: *Dimensions taken with 335/80 R18 tires. Additional dimensions on pages 3 & 4.

PERFORMANCE DATA

21D Z-Bar	1.0 yd ³ GP (0.8 m ³)	0.9 yd ³ GP (0.7 m ³)
	Bucket w/Bolt-on Edge	Bucket w/Bolt-on Edge
SAE bucket capacity – struck	0.86 yd ³ (0.66 m ³)	0.73 yd ³ (0.56 m ³)
Heaped	1.05 yd ³ (0.80 m ³)	0.92 yd ³ (0.70 m ³)
Bucket width – outside	74.8" (1900 mm)	74.8" (1900 mm)
Bucket weight	816 lb (370 kg)	783 lb (355 kg)
E. Operating height – fully raised w/spillguard	150.9" (3831 mm)	150.7" (3829 mm)
F. Hinge pin height – fully raised	120.7" (3065 mm)	120.7" (3065 mm)
G. Overall length – bucket level on ground	203.2" (5160 mm)	197" (5004 mm)
Dump angle – fully raised	43°	43°
H. Dump height – fully raised, 45° dump	91.9" (2334 mm)	96.1" (2440 mm)
J. Bucket reach – fully raised, 45° dump	33.1" (840 mm)	28.6" (727 mm)
K. Bucket reach – 7'0" (2.13 m) height, 45° dump	39.3" (998 mm)	38.5" (979 mm)
L. Dig depth	2.0" (50 mm)	2.0" (50 mm)
Operating load – SAE	2,839 lb (1288 kg)	2,938 lb (1333 kg)
Maximum material density – SAE	2,713 lb/yd ³ (1609 kg/m ³)	3,209 lb/yd ³ (1904 kg/m ³)
Tipping load – SAE		
Straight	6,852 lb (3108 kg)	7,081 lb (3212 kg)
Straight w/optional counterweight	7,280 lb (3302 kg)	7,509 lb (3406 kg)
40° turn	5,677 lb (2575 kg)	5,876 lb (2665 kg)
40° turn w/optional counterweight	6,039 lb (2739 kg)	6,238 lb (2829 kg)
Lift capacity –		
Full height	5,698 lb (2584 kg)	5,679 lb (2576 kg)
Maximum reach	6,997 lb (3174 kg)	7,055 lb (3200 kg)
Ground	8,498 lb (3854 kg)	8,801 lb (3992 kg)
Breakout force w/tilt cylinder	8,968 lb (4068 kg)	11,238 lb (5097 kg)
Maximum rollback –		
Ground	43°	43°
Carry position	48°	48°
@ Maximum reach	59°	59°
@ Full height	59°	59°
Maximum grading angle w/bucket – back dragging	76°	72°
Loader clearance circle	329.2" (8362 mm)	325.8" (8276 mm)

INSTRUMENTATION

Electronic Information Center
Displays/Gauges –
 Fuel level
 Hourmeter
Indicator lights –
 Hydraulic oil temperature
 Voltmeter
 Work lights
 Loader control lockout
 Brake pressure
 Master indicator
 Parking brake
 Air conditioning*
 Air filter restriction
 Direct selected F/N/R
 Gear selected
 Gear position
 Turn signal indicator
 Engine coolant temperature
 Engine oil pressure
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 & rear
Defroster
Sliding side window
Dome light
Wipers rear & front
12-volt auxiliary power
Lighter, 12-volt
External rearview mirrors
R.H. steps
Coat hook

LOADER

Z-bar loader linkage
Single control for lift and tilt
Positive hold float
Hydraulic attachment coupler

CYCLE TIME

Raise w/rated bucket load..... 6.0 sec
Dump w/rated bucket load
 Z-Bar 1.0 sec
Lower (empty)
 Float down 3.0 sec

SERVICE CAPACITIES

Fuel tank 23.4 gal (90 L)
Hydraulic system
 Total 15.5 gal (60 L)
 Reservoir 10.5 gal (40 L)
Front and rear axle
 Total axle (each) 4 qt (3.7 L)
Engine oil w/filter 9 qt (8.5 L)
Cooling system
 -36° F (-38° C) 3 gal (12 L)

OPERATING WEIGHTS

Z-Bar

Unit equipped with ROPS cab with
heater, standard counterweight,
335/80 R18 Dunlop tires, front
and rear fenders, 0.9 yd³ (0.7 m³)
general purpose loader bucket
w/edge, full fuel, 165 lb (75 kg)
operator 9,818 lb (4453 kg)
With optional
 counterweight 10,370 lb (4613 kg)

STANDARD EQUIPMENT

OPERATOR'S ENVIRONMENT

See page 4

ENGINE

Perkins 704-30

Fuel filter w/water trap

Dual element air cleaner

65 amp alternator

(1) 750 CCA 12-volt battery

Liquid-cooled radiator

Non spark-arresting muffler

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 wet disc brakes

Mechanical parking brake

HYDRAULICS

3-spool loader control valve

(8) Diagnostic quick couplers

OTHER

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

Drawbar pin

Articulation locking bar

Tie-down points – front/rear

Backup alarm

Radio ready

OPTIONAL EQUIPMENT

OPERATOR'S COMPARTMENT

Rotating beacon

Limited slip option, rear axle

LOADER

Bucket position indicator

Buckets (see page 3)

General Purpose

4-IN-1

Scrap Grapple

HYDRAULICS

Auxiliary hydraulics

TIRES

335/80 R18 SPT9

12.5 x 20 MPT

COUNTERWEIGHT

352 lb. (160 kg)

Mounts on rear axle

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

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

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