

# WHEEL LOADER

# CASE

CONSTRUCTION

SINCE 1842.

## 621E

### ENGINE

Brand	CASE/FPT
Model	F4HE96849*J101
Type	4 stroke, turbocharged, cooling system air-watter, Mar-I/Tier 3
Cylinders	6
Bore x stroke	104 x 132 mm (4,09 x 5,19in)
Displacement	6,7 L (6.700 cm <sup>3</sup> )
Fuel injection	Direct - Common Rail
Fuel	Diesel
Fuel filter	disposable cartridge full flow threadable
Air filter	Dry type element with obstruction alert
Cooling pack with central assemble	
Fan - Hydraulic driven	
Type	suction with 8 wings
Diameter	711 mm (28 in)
Water pump	
Type	Integral
Oil filter	Disposable, cartrige, full flow threadable
Horsepower	
Standard Power	
Gross	142 hp (106 kW) at 1,800 rpm
Net Power	137 hp (102 kW) at 2,000 rpm
Eco Power	
Gross	133 hp (99 kW) at 1,600 rpm
Net Power	111 hp (83 kW) at 2,000 rpm
NOTE: Power and gross torque according SAE J1995.	
Power and net torque according SAE J1349.	
Torque	
Standard Power	
Gross	613 N.m (62,5 kgf.m) at 1.400 rpm
Eco Power	
Gross	613 N.m (62,5 kgf.m) at 1.400 rpm

### POWER TRAIN

Transmission	4F/3R	
	Proportional with electronic control module, automatic torque sensitive shift and manual shift	
Gears	Helical	
Gears ratio	Forward	Reverse
1 <sup>st</sup>	4,012	3,804
2 <sup>nd</sup>	2,174	2,061
3 <sup>th</sup>	1,088	1,031
4 <sup>th</sup>	0,619	don't available
Torque converter		
Ratio	2,66:1	
Differential	Limited slip on front and rear axles	
Rear axle oscillation	24° total	
Axles		
Differential Ratio	3,440	
Planetary Ratio	6,000	
Final axle ratio	20,667	
Service brakes		
	Hydraulically driven, maintenance free, multiple discs immersed in oil with accumulator for the four wheels. Brake system in accordance with ISO 3450	
Parking brake		
	Spring driven and hydraulically released Assembled on the output shaft of the transmission	
Ground speeds - km/h with tires 20,5x25 L3		
Standard Power	Forward	Reverse
1 <sup>st</sup>	6,8	7,1
2 <sup>nd</sup>	11,9	12,6
3 <sup>th</sup>	21,8	23,2
4 <sup>th</sup>	32,9	don't available
Eco Power	Forward	Reverse
1 <sup>st</sup>	6,8	7,3
2 <sup>nd</sup>	12,4	13,1
3 <sup>th</sup>	23,1	24,6
4 <sup>th</sup>	36,4	don't available

### ELECTRICAL SYSTEM

Voltage	24 volts, negative to ground
Alternator	120 A
Batteries	(2) 12 V

### HYDRAULIC SYSTEM

Pump (Steering/implements)	
	Axial piston pump with compensated pressure and flow
Variable displacement	
	176 L/min at 2.000 rpm at 248,22 bar (46,5 gpm at 2.000 rpm at 3.600 psi)
Loader control valve	
	Closed centered, sectional 2, 3 or 4 reels, with pilot control for lifting and tilting, auxiliary hydraulic system and electromagnetic detentions for lifting, floating and tilting.
Loader steering	
	Orbital hydraulics, with articulation centered on pivot with oil flow according to demand.
Steering system in accordance with SAE J1511 and ISO 5010	
Main relief pressure	250 bar (3.625 psi)
Filter	10 micron filter, disposable cartridges full flow in the return line, filter restriction indicator light

## CYLINDERS

Lifting cylinders	
Cylinder bore	114,3 mm (4.5 in)
Rod diameter	63,5 mm (2.5 in)
Stroke	787,6 mm (31,0 in)
Unload cylinder	
Cylinder bore	127,0 mm (5.0 in)
Rod diameter	76,2 mm (3.0 in)
Stroke	619,7 mm (24.4 in)
Steering cylinder	
Cylinder bore	69,9 mm (2.75 in)
Rod diameter	38,1 mm (1.5 in)
Stroke	462,5 mm (18.2 in)

## INSTRUMENTS

Electronic Information Center
Indicators/gauges
Tachometer
Selected steering F/N/R
Transmission Modes
Gear shift mode – automatic/manual
Selected gear
Gear in use
Steering indicator
Engine cooling temperature
Engine oil pressure
Fuel level
Transmission oil temperature
Hydraulic oil temperature
Battery charge indicator
Hourmeter
Pilot lights
Rotating light*
Work lights
Loader controls locked
Low coolant level
Brake pressure
Master indicator
Parking brake
Air conditioning

Restriction indicator for:

Hydraulic oil filter
Transmission filter
Air filter
Audible alerts for vital functions
Rear alert
Horn
* Optional

## OPERATOR COMPARTMENT

ROPS/FOPS Cab
In according with ISO 3471, 3449
Air conditioner
Auxiliary front headlights
Two-speed front windshield wiper
Timer and water jet
Height and load adjustable fabric seat, with mechanical suspension and reclining
Armrest
Seat belt
Single control lever
Hydraulic power steering
Steering column with angle adjustment
Steering wheel spinner knob
Internal and external rearview mirrors
Gear key F/N/R

## LOADER

Unique lift and tilt control
Floation with positive retention
Automatic dig return
Automatic height control
Automatic shift return
Disconnecting the transmission on the brake pedal (DeClutch)

## CYCLE TIMES

Raise bucket with nominal load	7,7 s
Unload bucket with nominal load	
Z-Bar	1,5 s
Descent (empty)	
With power	3,9 s
Flotation	4,3 s
Total	13,5 s

## SERVICE CAPACITY

Fuel tank	189 L
Hydraulic system	
Overhall	114 L
Reservoir	56,8 L
Transmission	25,6 L
Service with filter	33,4 L
Front and Rear Axles	
Total/Axle	21,0 L
Engine oil with filter	15,3 L
Cooling system	24,0 L
Engine crankcase	14,5 L
Windshield washer reservoir	4,75 L

## OPERATING WEIGHT

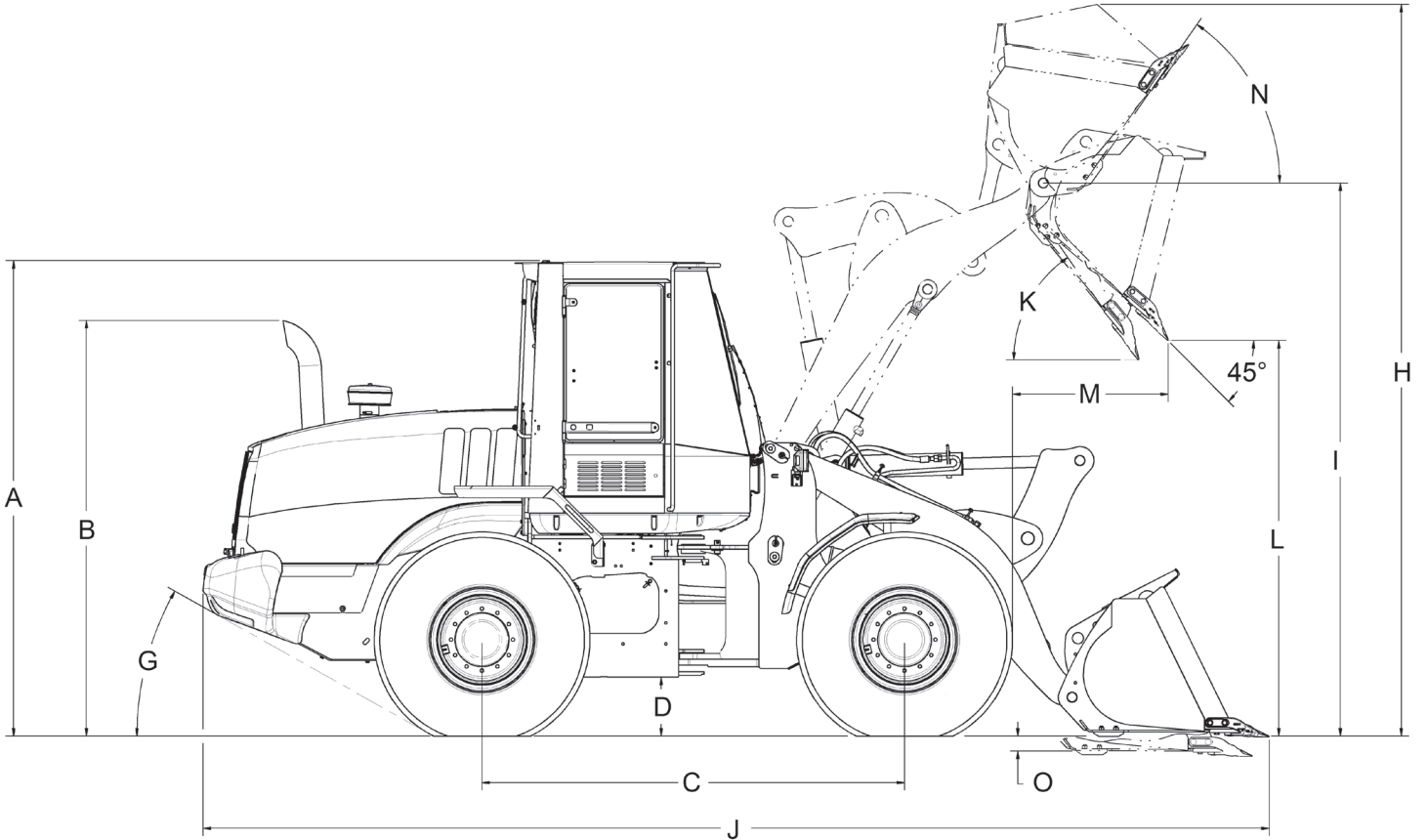
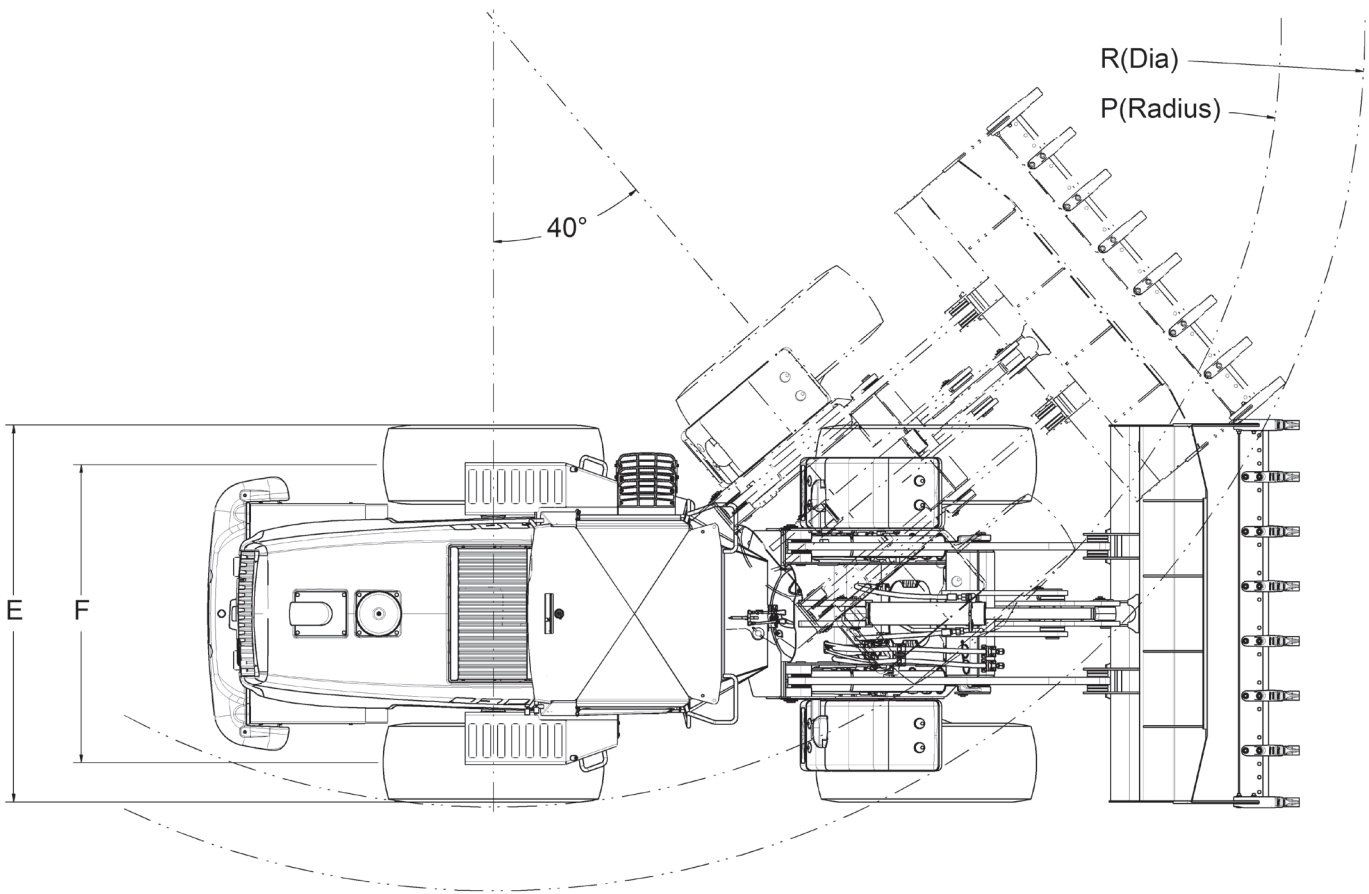
### Z-Bar

Unit equipped with ROPS / FOPS cab with heater and air conditioning, counterweight, 20.5x25 16 PLY L3 tires, front and rear fenders, 2.1 m<sup>3</sup> (2.75 yd<sup>3</sup>) multipurpose bucket with teeth, fuel tank full and 79 kg operator's weight.

11.945 kg (26,334 lb)

## DIMENSIONS

	17,5 X 25 - L2 Bias tire	20,5 X 25 - L2/L3 Bias tire
Height to		
<b>A.</b> Top of cab ROPS	3259 mm (10' 8,3")	3.303 mm (10' 10")
Drawbar	992 mm (3' 3,0")	992 mm (3' 3,0")
<b>B.</b> Height to the top of exhaust	2.851 mm (9' 4,2")	2.895 mm (9' 6,0")
<b>C.</b> Wheelbase	2.900 mm (9' 6,2")	2.900 mm (9' 6,2")
<b>D.</b> Ground clearance	406 mm (1' 4,0")	450 mm (1' 5,7")
<b>G.</b> Rear departure angle	30°	30°
<b>E.</b> Total width w/o bucket	2.324 mm (7' 7,5")	2.447 mm (8' 0,3")
<b>F.</b> Tread width (tread center to center)	1.880 mm (6' 2,0")	1.920 mm (6' 3,6")
<b>P.</b> Turning radius (Outside of Tires)	N/D	5.207 mm (17' 1,0")
Steering angle from the center	40°	40°
Overall angle	80°	80°
Rear axle oscillation	24°	24°



## WEIGHT ADJUSTMENTS

Select options	Weight setup	Tipping load adjustment	Load adjustment
			tipping articulated at 40°
Tires 20,5x25 12 canvas L2	-276 kg (-608 lb)	-202 kg (-445 lb)	-179 kg (-395 lb)
Tires 20,5x25 16 canvas L3	-244 kg (-538 lb)	-179 kg (-395 lb)	-158 kg (-348 lb)

NOTE:  
Unit equipped with 2.1 m<sup>3</sup> (2.75 yd<sup>3</sup>) multi-purpose bucket with bolted edge, 20.5 x 25 16 canvas L3 tires, ROPS/FOPS cab with heating and air conditioning, counterweight, std. battery, front and rear fenders, fuel tank full and 79 kg operator. Adjust the selected options from the nominal weight.

2,1 m <sup>3</sup> bucket with teeth and segmented cutting edge	+70 kg (+154 lb)	+52 kg (+115 lb)	+45 kg (+99 lb)
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NOTE:  
Unit equipped with 2.1 m<sup>3</sup> (2.75 yd<sup>3</sup>) multi-purpose bucket with teeth and segmented cutting edge, 20.5 x 25 16 canvas L3 tires, ROPS/FOPS cab with heating and air conditioning, counterweight, std. battery, front and rear fenders, fuel tank full and 79 kg operator. Adjust the selected options from the nominal weight.

## PERFORMANCE DATA

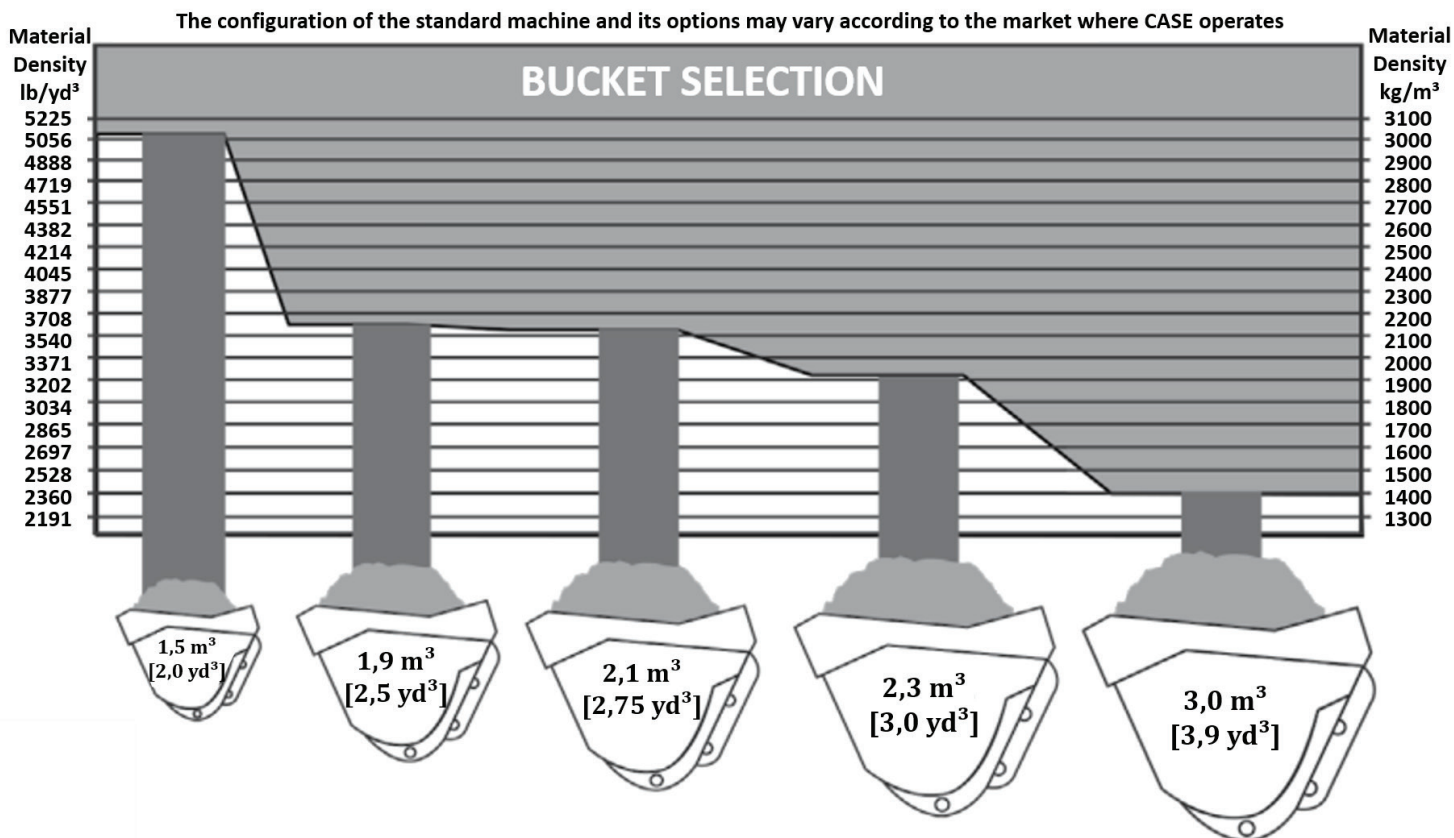
621E Z-Bar	Bucket 1,56 m <sup>3</sup> (2,0 yd <sup>3</sup> ) Z-Bar lift arm Spade nose	Bucket 1,9 m <sup>3</sup> (2,5 yd <sup>3</sup> ) Z-Bar lift arm Teeth & Segmented Cutting Edge	Bucket 2,1 m <sup>3</sup> (2,75 yd <sup>3</sup> ) Z-Bar lift arm Teeth	Bucket 2,3 m <sup>3</sup> (3,0 yd <sup>3</sup> ) Z-Bar lift arm Teeth	Bucket 3,0 m <sup>3</sup> (3,9 yd <sup>3</sup> ) Z-Bar lift arm Bolt-on edge
Bucket capacity - struck (SAE)	1,34 m <sup>3</sup> (1,75 yd <sup>3</sup> )	1,66 m <sup>3</sup> (2,17 yd <sup>3</sup> )	1,77 m <sup>3</sup> (2,32 yd <sup>3</sup> )	1,96 m <sup>3</sup> (2,56 yd <sup>3</sup> )	2,55 m <sup>3</sup> (3,34 yd <sup>3</sup> )
Heaped	1,56 m <sup>3</sup> (2,0 yd <sup>3</sup> )	2,05 m <sup>3</sup> (2,68 yd <sup>3</sup> )	2,1 m <sup>3</sup> (2,75 yd <sup>3</sup> )	2,3 m <sup>3</sup> (3,01 yd <sup>3</sup> )	3,0 m <sup>3</sup> (3,92 yd <sup>3</sup> )
Bucket width - external	2.580 mm (101.6 in)	2.605 mm (102.5 in)	2.602 mm (102.4 in)	2.602 mm (102.4 in)	2.602 mm (102.4 in)
Weight of bucket	816 kg	860 kg	816 kg	858 kg	1.026 kg
<b>H.</b> Fully raised operating height with retaining plate	4.848 mm (190.9 in)	5.002 mm (196.9 in)	4.965 mm (195.5 in)	5.040 mm (198.4 in)	5.318 mm (209.4 in)
<b>I.</b> Height to hinge pin totally raised	3.829 mm (150.8 in)	3.829 mm (150.8 in)	3.829 mm (150.8 in)	3.829 mm (150.7 in)	3.828 mm (150.7 in)
<b>J.</b> Total length - bucket leveled on the ground	7.142 mm (281.2 in)	7.216 mm (284.1 in)	7.325 mm (288.4 in)	7.360 mm (289.8 in)	7.482 mm (294.6 in)
<b>K.</b> Dump angle - fully raised	55°	55°	55°	55°	50°
<b>L.</b> Unloading height fully raised, dump at 45°	2.879 mm (113.3 in)	2.802 mm (110.3 in)	2.754 mm (108.4 in)	2.707 mm (106.6 in)	2.546 mm (100.2 in)
<b>M.</b> Bucket reach fully raised, dump at 45°	965 mm (38.0 in)	1.024 mm (40.3 in)	1.073 mm (42.2 in)	1.118 mm (44.0 in)	1.107 mm (43.6 in)
Bucket reach height 2.13 m, dump at 45°	1.505 mm (59.3 in)	1.526 mm (60.1 in)	1.544 mm (60.8 in)	1.568 mm (61.7 in)	1.455 mm (57.3 in)
Operating load - ISO	4.722 kg	4.440 kg	4.476 kg	4.424 kg	4.201 kg
Maximum material density - ISO	3.027 kg/m <sup>3</sup>	2.166 kg/m <sup>3</sup>	2.145 kg/m <sup>3</sup>	1.924 kg/m <sup>3</sup>	1.401 kg/m <sup>3</sup>
Tipping load in a straight line - ISO	10.885 kg	10.254 kg	10.328 kg	10.215 kg	9.732 kg
Tipping load articulated at 40° - ISO	9.444 kg	8.881 kg	8.953 kg	8.849 kg	8.402 kg
Lifting Capacity - Maximum height	6.510 kg	6.454 kg	6.499 kg	6.456 kg	6.281 kg
Lifting Capacity - Maximum reach	9.172 kg	9.102 kg	9.147 kg	9.102 kg	8.918 kg
Lifting Capacity - Ground	13.163 kg	11.444 kg	11.696 kg	11.071 kg	8.963 kg
Breakout force with discharge cylinder	11.476 kg	12.627 kg	11.841 kg	11.105 kg	8.792 kg
Maximum recoil - Ground	40°	40°	41°	41°	41°
Maximum recoil - Transport position	45°	45°	44°	44°	45°
Maximum recoil - Maximum reach	53°	53°	53°	53°	53°
<b>N.</b> Maximum recoil - Maximum height	55°	55°	55°	55°	55°
Digging depth	58 mm (2.3 in)	79 mm (3.1 in)	84 mm (3.3 in)	90 mm (3.6 in)	88 mm (3.5 in)
Maximum leveling angle with reverse drag bucket	60°	61°	62°	62°	64°
Loader turning diameter	11.477 mm (451.9 in)	11.564 mm (455.3 in)	11.603 mm (457.7 in)	11.646 mm (458.5 in)	11.718 mm (461.3 in)

## SELECTION OF BUCKETS

The graph is oriented in terms of bucket sizing based on density of materials and average working conditions. Additional factors such as tires, counterweight, terrain, climate and options, must be considered when choosing the bucket.

### To select the ideal bucket size

- 1** Determine the density of the material to handle using the Material Density Table below
- 2** Find the density in the column (American or metric system) near the illustration of Bucket Selection from corresponding model.
- 3** Follow the density along your horizontal line to find which bucket(s) can be used for that material density.



## MATERIALS DENSITY

Material	Density
Calcium carbonate	1.250 kg/m <sup>3</sup>
Clay	
Natural	1.600 kg/m <sup>3</sup>
Dry	1.480 kg/m <sup>3</sup>
Wet	1.660 kg/m <sup>3</sup>
With gravel, dry	1.420 kg/m <sup>3</sup>
With gravel, wet	1.540 kg/m <sup>3</sup>
Coal	
Anthracite, crushed	1.100 kg/m <sup>3</sup>
Bituminous, crushed	830 kg/m <sup>3</sup>
Granite, crushed	1.660 kg/m <sup>3</sup>
Schist	1.250 kg/m <sup>3</sup>
Slag, in pieces	1.750 kg/m <sup>3</sup>

Material	Density
Gravel	
Dry	1.510 kg/m <sup>3</sup>
Gravel	1.930 kg/m <sup>3</sup>
Dry, from ½" to 2"	1.690 kg/m <sup>3</sup>
Wet, from ½" to 2"	2.020 kg/m <sup>3</sup>
Crushed limestone	1.540 kg/m <sup>3</sup>
Sand	
Dry	1.420 kg/m <sup>3</sup>
Dry, from ½" to 2"	1.840 kg/m <sup>3</sup>
With gravel, dry	1.720 kg/m <sup>3</sup>
With gravel, wet	2.020 kg/m <sup>3</sup>
Sandstone, in pieces	1.250 kg/m <sup>3</sup>
Crushed stone	1.600 kg/m <sup>3</sup>

## STANDARD EQUIPMENT

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### OPERATOR COMPARTMENT

Refer to page 2

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#### Engine

CASE/FPT  
MAR-I (Tier 3)  
Turbocharger, diesel  
Automatic adjustment of the alternator belt  
Integral engine oil cooling  
Hydraulic driven puller fan  
Fuel filter with water separator  
Air filter with two elements  
Alternator 120 A  
(2) batteries 12 V

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#### Loader

Refer to page 2

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### POWER TRAIN

4 wheel drive  
Selectable 4F / 3R transmission  
    automatic/manual  
Electronic Control Module - Programmable  
Proportional gear shifting  
    controlled by computer with selection  
    of programmable gears  
On-board diagnostics  
Single lever for electronic control  
    of gear selection  
Gear key F/N/R on lever  
    to control the loader  
Downshift button  
Torque converter  
External planetary axes  
Limited slip differential  
Transmission oil cooler  
Disconnecting the transmission by the brake  
    pedal (DeClutch)  
Oil-immersed hydraulic brake discs  
Spring-applied parking brake  
    hydraulically released  
Limp-Home mode

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#### Hydraulic system

Joystick loader control valve, with two hydraulic  
functions  
Wide-angle and amplified flow steering system  
Reversing hydraulic fan  
(8) quick diagnostic couplings

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### Others

Front and rear fenders  
Headlights  
    (2) headlights (high beam / low beam)  
    (2) front working headlights  
    (2) rear brake lights and reverse lights  
    (2) rear working headlights  
Direction indicators / Front / rear warning  
lights  
Standard Counterweight  
Trailer pin  
Joint locking bar  
Lifting arm locking bar  
Holder point and tie - front and rear  
Reverse gear alarm  
Remote drainage points  
Centralized drainage points

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### Tires

20,5 x 25 16 lining L3 three pieces - 17" Rim

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Note: The configuration of standard equipment may vary according the industry.

## OPTIONAL EQUIPMENT

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### Loader

Quick coupling for accessories  
Auxiliary hydraulic system for actuation of the quick coupling cylinder  
Loader controls  
Buckets (see page 5)

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### Hydraulic system

Auxiliary hydraulics  
Ride Control  
Loader valves with 3 or 4 hydraulic functions,  
    With 3 or 4 loader control lever  
    With joystick plus 1 or 2 loader control lever

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### Special versions

#### Version for corrosive environments:

- Parts with chamfered corners and special paint to protect against corrosive environments
- Application of special varnish to the entire machine surface for extra protection
- Bucket designed for handling fertilizer (3.0 m<sup>3</sup>)
- Chassis with openings to prevent material accumulation
- Fertilizer resistant alternator
- Special protection for electrical terminals
- Tubes with extra surface treatment, for greater durability

#### Sugarcane version:

- Cyclonic prefilter at engine inlet and air conditioning for better system efficiency and avoid clogging
  - Bucket designed for handling bagasse (3.0 m<sup>3</sup>)
  - Chassis with openings to prevent material accumulation
  - Alternator with openings to prevent material build-up and prevent fire
  - Fire extinguisher
- 

### TIRES

17,5 x 25 12 lining L2 one piece - 14" Rim  
17,5 x 25 12 lining L2 three pieces - 14" Rim  
17,5 x 25 16 lining L3 three pieces - 14" Rim  
20,5 x 25 16 lining L2/L3 three pieces - 17" Rim  
17,5 x R25 radial, L2/L3 three pieces - 17" Rim  
20,5 x R25 radial, L3 three pieces - 17" Rim

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### Others

Tool box  
Rotating beacon  
Buckets (see page 5)  
Cigarette lighter / 12V

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CASE reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold. The specifications, descriptions and illustrative material contained herein correctly reflect the data known at the time of publication, but may vary from region to region and are subject to change without notice. The illustrations may include optional equipment and accessories and may not include all standard equipment.

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