**Load Haul Dump - Diesel Hybrid**

**General Specification**

### Operating capacities, weights and dimensions

<table>
<thead>
<tr>
<th></th>
<th>11.2 m³</th>
<th>14.6 yd³</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bucket capacity</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static tipping loads</td>
<td>473 kN</td>
<td>106,350 lb</td>
</tr>
<tr>
<td>Breakout force (tilt)</td>
<td>347 kN</td>
<td>78,000 lb</td>
</tr>
<tr>
<td>Operating weight</td>
<td>58,091 kg</td>
<td>130,000 lb</td>
</tr>
</tbody>
</table>

*Standard bucket based on a material density of 2,000 kg/m³ (3,372 lb/yard³)

### Working ranges

<table>
<thead>
<tr>
<th></th>
<th>Engine rated power</th>
<th>Base engine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>320 kW</td>
<td>429 hp</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Option engine</th>
<th>Payload</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>380 kW</td>
<td>22,000 kg</td>
</tr>
<tr>
<td></td>
<td>510 hp</td>
<td>48,500 lbs</td>
</tr>
</tbody>
</table>

Bucket capacity: 10.0 m³/13.1 yd³, 12.2 m³/16.0 yd³ and 13.8 m³/18.0 yd³
bucket options available

*Indicative illustration only, machine design may vary.*
Power module

Diesel power options

<table>
<thead>
<tr>
<th>Model</th>
<th>US Tier IV final/EU Stage IV</th>
<th>US Tier IV final/EU Stage IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>Series 1300, 12.8 litre</td>
<td>Series 1300, 12.8 litre</td>
</tr>
<tr>
<td>Type</td>
<td>Four-cylinder turbo charged</td>
<td>Four-cylinder turbo charged</td>
</tr>
<tr>
<td>Rated engine power</td>
<td>230 kW (310 hp) @ 1800 rpm</td>
<td>230 kW (310 hp) @ 1800 rpm</td>
</tr>
</tbody>
</table>

Both engines are available in either Tier IV or emissions flex package. The Tier IV option has included a catalytic converter. The emissions flex package is furnished with a standard muffler or an optional diesel particulate filter.

The independent power module mounting system, consisting of the engine coupled to the SR generator, is cradled within the rear frame by a three-point isolation system.

Exhaust system

MTU Tier IV final-exhaust after treatment catalyst box

Control system: LINCS II

CANN Based Vehicle Control Unit incorporating high speed monitoring and advanced diagnostics including integrated data logging and storage. LINCS II uses a dual mounted full color touch screen display as the operator interface. Out of range conditions will cause an audible alarm along with a message screen that is color coded to indicate severity.

In addition, the touch screen display provides repair technicians with operational data and fault messages.

LINCS II load weigh

Displays real-time load data, cycle times, production rates and operational profile.

- Memory capable of retaining months of production information
- Smart Solutions remote monitoring connectivity available for additional diagnostics and productivity analysis
- Capable of interfacing with radio-dispatch systems for on-site real-time monitoring

Steering and hoisting system

Steering function is controlled by a single joystick. Constant engine rpm assures full hydraulic steering response.

Articulation angle

40°

Turning radius

Outside: 7.53 m (24 ft 8 in)
Inside: 3.21 m (10 ft 6 in)

Hoist and bucket control

Hoist and bucket control functions are incorporated into a single joystick control. The proportional electronic hydraulic controlled hoist and bucket system is independent of the steering system.

Standard/high lift cycle times

<table>
<thead>
<tr>
<th>Hoist</th>
<th>8.4 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dump</td>
<td>3.0 sec</td>
</tr>
<tr>
<td>Float</td>
<td>4.0 sec</td>
</tr>
<tr>
<td>Total</td>
<td>14.4 sec</td>
</tr>
</tbody>
</table>

Operator’s cabin

Features

- ISO ROPS/FOPS design, rubber mounted for comfort
- Fast box for improved operator ergonomics
- Refrigerated climate control system
- Door interlock sets park brake, blocks steering movement once the machine is stationary and bucket and boom functions immediately
- Door movement damper to door movement control
- Adjustable air seat suspension with four (4) point harness

Electrical propulsion system

Switched Reluctance (SR) Technology

Electric Propulsion System

- Skilled microprocessor controlled traction drive

- Switched Reluctance (SR) drive advantages include:
  - No commutator, brushes or rotor windings on
  - SR motors or generator
  - SR KESS - Kinetic Energy Storage System
  - Parts commonality - power conversion modules identical for motor, generator and SR KESS

Travel speed

Forward and reverse 0-27 km/h (0-16.78 mph)

Generator

- G40 SR Generator
- Switched Reluctance (SR)

Traction motors

- BS SR motor (water cooled)

Planetary gearing

Modular 25A

- In-line gear train mounted within the rim of the tire, transmitting power from the traction motor through the tire/rim assembly
- A four stage planetary drive unit in each position
- Total reduction: 90:63:1

Hydraulic system

Pumps

- Maximum flow rate at 1800 rpm

<table>
<thead>
<tr>
<th>Bucket and hoist</th>
<th>Piston</th>
<th>Pump pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piston</td>
<td>468 L/min</td>
<td>124 gpm</td>
</tr>
<tr>
<td>Accessory</td>
<td>171 L/min</td>
<td>45 gpm</td>
</tr>
<tr>
<td>Accessory</td>
<td>171 L/min</td>
<td>45 gpm</td>
</tr>
<tr>
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<td>171 L/min</td>
<td>45 gpm</td>
</tr>
</tbody>
</table>

Valves

<table>
<thead>
<tr>
<th>Main</th>
<th>Two (2)</th>
<th>221 L/min</th>
<th>175 gpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering</td>
<td>One (1)</td>
<td>341 L/min</td>
<td>90 gpm</td>
</tr>
</tbody>
</table>

Cylinders

- Double acting, single stage (diameter)

<table>
<thead>
<tr>
<th>Hoist</th>
<th>230 mm</th>
<th>9.0 in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucket</td>
<td>250 mm</td>
<td>10.0 in</td>
</tr>
<tr>
<td>Steering</td>
<td>140 mm</td>
<td>5.5 in</td>
</tr>
</tbody>
</table>

Braking system

Primary brake system

Electric dynamic braking system is controlled from the accelerator pedal and can bring the loader to a full stop without application of mechanical brakes.

Secondary brake system

Hydraulically modulated traction motor speed disk brakes

- Single disk and caliper on each rear traction motor, dual disks and caliper on front traction motors
- Emergency fail safe brakes are spring applied in the event of hydraulic pressure loss

Parking brake system

Spring applied, hydraulic release traction motor speed disk brakes

24V electrical system

- 24V alternator
- Modular (MRT) wiring system
- Lockable, dual isolation switch system
- Separate, fully isolated auxiliary power supply for fire suppression and radio systems
- 16 x 50 watt LED driving and work lights

Air filtration

Primary
- Dual safety filters for engine air intake with Sy-Klone® DFR precleaner.

Fluid capacities

- Fuel: 757 L (205 gal)
- Hydraulic: 473 L (125 gal)
- SR converter cooling system: 18.9 L (5 gal)
- Engine cooling system: 75.7 L (20 gal)
- Engine oil: 1478 L (39 gal)
- Planetary (each): 7.6 L (2 gal)

Structural

Frames are fabricated from high strength, low alloy steel with excellent weld characteristics and extreme low temperature properties. The front axle is an integral, fixed part of the front frame. The rear axle center oscillates eight degrees.

Unique forged ball and socket joints are utilized in multiple pivot locations (SR arms, rear axle, frame armatures, hoist cylinders). These joints are superior in absorbing and distributing multi-directional stresses. Features easily replaceable brass liners for long life and easy maintenance.

High strength castings are used in key areas of fabricated structures to reduce stress and improve structural life.
Standard features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tires/rims</td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>35/65 R33</td>
</tr>
<tr>
<td>Rims</td>
<td>33 x 28 with 3.5(^\circ) flange</td>
</tr>
</tbody>
</table>

Standard equipment

- Air conditioning/heater-defroster (filtered and pressurized)
- Air tank bleed system
- Adjustable automatic lift height cut off
- Automatic bucket leveling control
- Back-up alarm, audible
- Battery disconnect switch
- Lift arm and articulation locks
- Brake lights
- Central service with fast fuel
- Data analysis and viewing software
- Data logging - downloadable production and maintenance logs
- Door interlock on operators cabin
- Drawbar with tow points
- Electric horn
- Emergency stop buttons (cab and remote mounted)
- Fire extinguisher, manual, 20 lb (9.07 kg)
- FOPS - Falling Object Protection System
- Idle timer
- Interior lights
- Isolation monitor
- Joystick hoist and bucket control
- Joystick steering control
- Jump start
- Emergency steering
- LED working lights
- LINCS II alarms
- LINCS II load weigh and monitoring
- Operator seat (11-way adjustable)
- Overspeed alarm
- Parking brake
- Retractable four point over shoulder harness
- ROPS - Rollover Protection Structure
- Selectable throttle switch
- Starter disconnect switch
- Safety glass throughout
- Turn signals
- Twelve (12) volt power supply in cab
- Twelve (12) volt power port (2)
- Windshield washer reservoir 2.6 gal (9.8 L)
- Windshield wiper and washer (all cab glass)
- Automatic lubrication system
- Manuals: operators, parts (Link One), maintenance and service
- Kinetic Energy Storage System (KESS)
- Removable planetary middle pinion (x4)
- Integrated underside protection system
- Color coded and labelled lifting points

Optional features

- Beacon light kit
- Hood mounted hand rail kit
- Diesel particulate filter (EFP engines only)
- Fire detection and suppression system (automatic)
- Fire suppression system (manual)
- Fluid sampling kit
- PreVail remote health monitoring system
- Ride control system
- Tire pressure monitoring system
- Recovery hitch with automatic brake release
- RCT Control Master - line of sight remote control
- Fast fuel

Buckets

10.0 m\(^3\)/13.1 yd\(^3\), 11.0 m\(^3\)/14.4 yd\(^3\), 12.2 m\(^3\)/16.0 yd\(^3\) and 13.8 m\(^3\)/18.0 yd\(^3\)

For actual bucket configuration and sizing, consult your local representative.

Remote control/automation system

- RCT Control Master - Line of sight remote control
- CAN interface between remote hardware and machine control
- Safety system/fail safe system inter-connectivity hard wired to RCT module (emergency stop, fire system, park brake)
- Functional safety to ISO 62001

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