ENGINE

Model Cummins QSX 11.9
Emissions Certification Tier 4 Interim
Type 4-stroke, turbocharged and air-to-air cooled
Cylinders 6-cylinder in-line
Bore/Stroke 5.12 x 5.91 in (130 x 150 mm)
Displacement 726 in³ (11.9 L)
Fuel DF1 and DF2, ULSD – Ultra Low Sulfur Diesel
Fuel injection Direct injection – electronic
Fuel filter Replaceable, full flow spin-on cartridge
Fuel pump Cummins HP
Gradeability:
   Side-to-side 45°
   Fore and aft 45°
Air filter 2-element dry-type w/ warning restriction indicator
Mid-mount cooling module:
   Mid-mount air/water
Fan – hydraulic driven:
   Style 9 blade puller
   Diameter 34.5 in (876 mm)
Water pump Integral
Engine oil pump operating angle ratings:
   Side-to-side 35°
   Fore and aft 35°
   Oil filtration Replaceable, full flow spin-on cartridge
Engine speeds RPM
   Rated – full load 2100
Horsepower:
   Peak gross @ 1800 RPM 370 hp (276 kW)
   Rated: Gross @ 2000 RPM 355 hp (265 kW)
   Net @ 2200 RPM 351 hp (262 kW)
Torque:
   Peak @ 1400 RPM: 1,250 lb-ft (1 695 N·m)
   Torque rise: Maximum power range 40%


DRIVETRAIN

Transmission:
   4F/3R Proportional w/ Electronic Control
   Module torque sensing autoshift/manual shift and modulation
   Gears Helical cut
   Torque converter stall ratio: 2.51:1
   Torque converter
   Differential:
      Limited slip w/ 30% transfer on front and rear axles
   Rear axle oscillation 26° total
   Front and rear axles:
      Differential ratio 4.25
      Planetary ratio 6.35
      Final axle ratio 27.00
   Planetaries Outboard

Service brakes:
   Hydraulically actuated, maintenance-free, multiple wet disc w/ accumulator to all four wheels
   Brake surface area:
      Front hub – each 1,144 in² (0.74 m²)
      Rear hub – each 1,144 in² (0.74 m²)

Parking brakes:
   Spring-applied hydraulic release disc on transmission output shaft neutralizes power flow to wheels when engaged
   Travel speeds – 4-speed transmission:
      Forward mph (kph)
      Reverse mph (kph)
      1st  3.8 (6.1)  3.8 (6.1)
      2nd  7.1 (11.4)  7.1 (11.4)
      3rd  11.1 (17.9) 15.4 (24.8)
      4th  22.4 (36.0) —
   Travel speeds – 5-speed transmission:
      Forward mph (kph)
      Reverse mph (kph)
      1st  3.8 (6.1)  3.8 (6.1)
      2nd  7.3 (11.8)  7.3 (11.8)
      3rd  11.4 (18.3) 16.5 (26.6)
      4th  16.5 (26.6) —
      5th  25.5 (41.0) —

NOTE: Travel speeds at full engine throttle w/ 29.5 x 25.0 XHA tires.

ELECTRICAL

Voltage 24 Volts, negative ground
Alternator 80 amp
Batteries (2) 12-volt

OPERATOR ENVIRONMENT

ROPS cab w/ A/C, heat; Key start; Articulated power steering w/ tilt column; Fully adjustable, heated, cloth-covered air-suspension seat; Foot throttle; Single lever 2-spool loader control w/ wrist rest; Cup holder; 2 interior rearview mirrors; Rear view camera; 2 in (51 mm) retractable seat belt; Storage tray; Single brake pedal; F/N/R shuttle switch; External, heated rearview mirrors; Pressurized air filtering; Anti-glare window strip; Cab air-conditioning w/ heater; Defroster; Side window, partial/fully open; Roll screen for rear window; Dome light; Wipers, rear and intermittent front; Windshield washers, front and rear; Rubber floor mat; Sunscreen; 12V Power outlet; Horn; AM/FM/MP3 radio; DC converter.

Displays/Gauges:
   Speedometer; Engine coolant temperature; Fuel level; Transmission oil temperature; Hydraulic oil temperature; Battery voltmeter.

Audible/Visual alarms:
   Warning lights:
      Clutch cut-off; High beam; Turn signal.
   Caution alarm:
      Parking brake; Coolant temperature; Hydraulic oil temperature; Transmission error; Air filter clogging; Alternator voltage; Fuel level.
   Critical alarm:
      Engine oil pressure; Brake oil pressure; Hydraulic oil temperature; Service brake oil pressure.
   Backup alarm

NOTE: *If equipped w/ option.

OPERATING WEIGHT

Z-Bar
Unit equipped w/ ROPS cab w/ heater and A/C; Standard counterweight; 29.5 x 25.0 XHA tires; 6.8 yd³ (5.2 m³) GP Pin-on w/ bolt on edge; Full fuel; 175 lb (79 kg) operator; 66,425 lb (30 130 kg)

XR
Unit equipped w/ ROPS cab w/ heater and A/C; Standard counterweight; 29.5 x 25.0 XHA tires; 7.1 yd³ (5.4 m³) GP Pin-on w/ bolt on edge; Full fuel; 175 lb (79 kg) operator; 68,564 lb (31 100 kg)
**HYDRAULICS**

**Load sensing hydraulic system, electro-hydraulic controls**

- **Piston pump @ 2000 RPM:** 111 gpm (420 L/min)
- **Relief setting:** 3,983 psi (280 kg/cm²)

**Steering system:**
- Full hydraulic power steering, flow amplified, load sensing
- **Pilot pump @ 2000 RPM:** 58.1 gpm @ 2,990 psi (220 L/min @ 20 615 kPa)

**Loader control valve:**
- 3-Function valve w/ single or three-lever controls – w/ auxiliary lever

**SERVICE CAPACITIES**

<table>
<thead>
<tr>
<th>Component</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel tank</td>
<td>113.6 gal (430 L)</td>
</tr>
<tr>
<td>Hydraulic system:</td>
<td></td>
</tr>
<tr>
<td>Reservoir</td>
<td>62.0 gal (234 L)</td>
</tr>
<tr>
<td>Total</td>
<td>90.9 gal (344 L)</td>
</tr>
<tr>
<td>Transmission:</td>
<td></td>
</tr>
<tr>
<td>Service w/ filter</td>
<td>11.4 gal (43 L)</td>
</tr>
<tr>
<td>Front and rear axle w/o coolers</td>
<td></td>
</tr>
<tr>
<td>Front axle</td>
<td>15.3 gal (58 L)</td>
</tr>
<tr>
<td>Rear axle</td>
<td>15.3 gal (58 L)</td>
</tr>
<tr>
<td>Engine oil w/ filter</td>
<td>11.4 gal (43 L)</td>
</tr>
<tr>
<td>Cooling system</td>
<td>17.7 gal (67 L)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
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</tr>
<tr>
<td>Cooling system</td>
<td>17.7 gal (67 L)</td>
</tr>
</tbody>
</table>

**OTHER SPECIFICATIONS**

**Lift cylinder:**
- Bore diameter: 7.1 in (180 mm)
- Rod diameter: 4.1 in (105 mm)
- Stroke: 34.0 in (863 mm)

**Dump cylinder:**
- Bore diameter: 5.5 in (140 mm)
- Rod diameter: 3.1 in (80 mm)
- Stroke: 22.8 in (580 mm)

**Loader:**
- Z-Bar loader linkage; Single control for lift and tilt; Positive hold float; Automatic return-to-dig; Automatic return-to-travel; Brake pedal transmission disconnect; Bucket position indicator on bucket.

**Cycle time:**
- Raise w/ rated bucket load: 6.1 sec
- Dump w/ rated bucket load: 1.4 sec
- Power down: 4.8 sec
- Float down: 4.1 sec
### WEIGHT ADJUSTMENTS

<table>
<thead>
<tr>
<th>Select Options</th>
<th>Weight Adjustment</th>
<th>Tipping Load Adjustment Straight</th>
<th>Tipping Load Adjustment 40° Turn</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.5 x 25 L3 Goodyear</td>
<td>-284 lb (-129 kg)</td>
<td>-190 lb (-86 kg)</td>
<td>-556 lb (-252 kg)</td>
</tr>
<tr>
<td>26.5 x 25 L4 Goodyear</td>
<td>+880 lb (+399 kg)</td>
<td>+1,303 lb (+591 kg)</td>
<td>+1,107 lb (+502 kg)</td>
</tr>
<tr>
<td>26.5 x 25 L5 Goodyear</td>
<td>+1,307 lb (+593 kg)</td>
<td>+2,101 lb (+953 kg)</td>
<td>+2,105 lb (+955 kg)</td>
</tr>
</tbody>
</table>

NOTE: Unit equipped with Z-Bar loader arms, 7.1 yd³ (5.4 m³) general purpose pin on bucket, 29.5 x 25.0 XHA tires, ROPS cab with heater, counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator. Adjust select options from rated weight.

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**DIMENSIONS**

A. Height to top of ROPS cab 152.2 in (3 865 mm)
   Height to drawbar 46.7 in (1 185 mm)
B. Wheelbase 145.7 in (3 700 mm)
C. Ground clearance 19.5 in (495 mm)
D. Angle of departure 23°

Width:
   - Overall* without bucket 126.8 in (3 220 mm)
   - Centerline tread 96.1 in (2 440 mm)

Turning radius* – outside 298.6 in (7 585 mm)

Turning angle:
   - From center 40°
   - Total angle 80°

Rear axle oscillation, total 26°

NOTE: *Dimensions taken with 29.5 x 25.0 XHA tires. Additional dimensions on page 4.
### PERFORMANCE DATA

#### 1221F Z-Bar

<table>
<thead>
<tr>
<th>Specification</th>
<th>6.8 yd³ (5.2 m³) GP Pin On Bucket with Bolt-on Adapters and Pin On Teeth</th>
<th>7.1 yd³ (5.4 m³) GP Pin On Bucket with Bolt-on Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE bucket capacity – struck</td>
<td>5.8 yd³ (4.4 m³)</td>
<td>6.0 yd³ (4.6 m³)</td>
</tr>
<tr>
<td>Heaped</td>
<td>6.8 yd³ (5.2 m³)</td>
<td>7.1 yd³ (5.4 m³)</td>
</tr>
<tr>
<td>Bucket width – outside</td>
<td>135.8 in (3 450 mm)</td>
<td>135.8 in (3 450 mm)</td>
</tr>
<tr>
<td>Bucket weight</td>
<td>5,699 lb (2 585 kg)</td>
<td>6,063 lb (2 750 kg)</td>
</tr>
<tr>
<td>F. Operating height – fully raised with spillguard</td>
<td>247.8 in (6 295 mm)</td>
<td>247.8 in (6 295 mm)</td>
</tr>
<tr>
<td>G. Hinge pin height – fully raised</td>
<td>179.5 in (4 560 mm)</td>
<td>179.5 in (4 560 mm)</td>
</tr>
<tr>
<td>H. Overall length – bucket level on ground</td>
<td>386.6 in (9 820 mm)</td>
<td>379.1 in (9 630 mm)</td>
</tr>
<tr>
<td>J. Dump angle – fully raised</td>
<td>47°</td>
<td>47°</td>
</tr>
<tr>
<td>K. Dump height – fully raised, 45° dump</td>
<td>123.8 in (3 145 mm)</td>
<td>129.9 in (3 300 mm)</td>
</tr>
<tr>
<td>L. Bucket reach – fully raised, 45° dump</td>
<td>63.0 in (1 600 mm)</td>
<td>56.3 in (1 430 mm)</td>
</tr>
<tr>
<td>Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump</td>
<td>87.8 in (2 230 mm)</td>
<td>84.6 in (2 150 mm)</td>
</tr>
<tr>
<td>Operating load – ISO</td>
<td>22,862 lb (10 370 kg)</td>
<td>22,972 lb (10 420 kg)</td>
</tr>
<tr>
<td>Maximum material density – ISO</td>
<td>3,531 lb/yd³ (2 095 kg/m³)</td>
<td>3,253 lb/yd³ (1 930 kg/m³)</td>
</tr>
<tr>
<td>Tipping load – ISO:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straight</td>
<td>52,624 lb (23 870 kg)</td>
<td>52,823 lb (23 960 kg)</td>
</tr>
<tr>
<td>40° turn</td>
<td>45,724 lb (20 740 kg)</td>
<td>45,944 lb (20 840 kg)</td>
</tr>
<tr>
<td>Lift capacity:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full height</td>
<td>30,909 lb (14 020 kg)</td>
<td>30,710 lb (13 930 kg)</td>
</tr>
<tr>
<td>Maximum reach</td>
<td>50,662 lb (22 980 kg)</td>
<td>50,376 lb (22 850 kg)</td>
</tr>
<tr>
<td>Ground</td>
<td>74,670 lb (33 870 kg)</td>
<td>73,767 lb (33 460 kg)</td>
</tr>
<tr>
<td>Breakout force with tilt cylinder</td>
<td>55,733 lb (25 280 kg)</td>
<td>52,360 lb (23 750 kg)</td>
</tr>
<tr>
<td>Maximum rollback:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. Ground</td>
<td>42°</td>
<td>42°</td>
</tr>
<tr>
<td>Carry position</td>
<td>48°</td>
<td>48°</td>
</tr>
<tr>
<td>@ Maximum reach</td>
<td>63°</td>
<td>63°</td>
</tr>
<tr>
<td>@ Full height</td>
<td>63°</td>
<td>63°</td>
</tr>
<tr>
<td>N. Dig depth</td>
<td>2.6 in (65 mm)</td>
<td>4.1 in (105 mm)</td>
</tr>
<tr>
<td>Maximum grading angle with bucket – back dragging</td>
<td>59°</td>
<td>59°</td>
</tr>
<tr>
<td>Loader clearance circle with bucket</td>
<td>606.7 in (15 410 mm)</td>
<td>589.4 in (14 970 mm)</td>
</tr>
</tbody>
</table>

#### 1221F XR

<table>
<thead>
<tr>
<th>Specification</th>
<th>6.8 yd³ (5.2 m³) GP Pin On Bucket with Bolt-on Adapters and Pin On Teeth</th>
<th>7.1 yd³ (5.4 m³) GP Pin On Bucket with Bolt-on Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE bucket capacity – struck</td>
<td>5.8 yd³ (4.4 m³)</td>
<td>6.0 yd³ (4.6 m³)</td>
</tr>
<tr>
<td>Heaped</td>
<td>6.8 yd³ (5.2 m³)</td>
<td>7.1 yd³ (5.4 m³)</td>
</tr>
<tr>
<td>Bucket width – outside</td>
<td>135.8 in (3 450 mm)</td>
<td>135.8 in (3 450 mm)</td>
</tr>
<tr>
<td>Bucket weight</td>
<td>5,699 lb (2 585 kg)</td>
<td>6,063 lb (2 750 kg)</td>
</tr>
<tr>
<td>F. Operating height – fully raised with spillguard</td>
<td>247.8 in (6 295 mm)</td>
<td>247.8 in (6 295 mm)</td>
</tr>
<tr>
<td>G. Hinge pin height – fully raised</td>
<td>179.5 in (4 560 mm)</td>
<td>179.5 in (4 560 mm)</td>
</tr>
<tr>
<td>H. Overall length – bucket level on ground</td>
<td>403.5 in (10 250 mm)</td>
<td>396.1 in (10 060 mm)</td>
</tr>
<tr>
<td>J. Dump angle – fully raised</td>
<td>47°</td>
<td>47°</td>
</tr>
<tr>
<td>K. Dump height – fully raised, 45° dump</td>
<td>138.6 in (3 520 mm)</td>
<td>144.5 in (3 670 mm)</td>
</tr>
<tr>
<td>L. Bucket reach – fully raised, 45° dump</td>
<td>61.4 in (1 560 mm)</td>
<td>58.3 in (1 480 mm)</td>
</tr>
<tr>
<td>Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump</td>
<td>100.8 in (2 560 mm)</td>
<td>97.2 in (2 470 mm)</td>
</tr>
<tr>
<td>Operating load – ISO</td>
<td>19,048 lb (8 640 kg)</td>
<td>20,018 lb (9 080 kg)</td>
</tr>
<tr>
<td>Maximum material density – ISO</td>
<td>3,042 lb/yd³ (1 805 kg/m³)</td>
<td>2,860 lb/yd³ (1 697 kg/m³)</td>
</tr>
<tr>
<td>Tipping load – ISO:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straight</td>
<td>46,914 lb (21 280 kg)</td>
<td>48,876 lb (22 170 kg)</td>
</tr>
<tr>
<td>40° turn</td>
<td>38,095 lb (17 280 kg)</td>
<td>40,036 lb (18 160 kg)</td>
</tr>
<tr>
<td>Lift capacity:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full height</td>
<td>29,476 lb (13 370 kg)</td>
<td>29,542 lb (13 400 kg)</td>
</tr>
<tr>
<td>Maximum reach</td>
<td>46,833 lb (21 243 kg)</td>
<td>46,811 lb (21 233 kg)</td>
</tr>
<tr>
<td>Ground</td>
<td>63,903 lb (28 986 kg)</td>
<td>63,427 lb (28 770 kg)</td>
</tr>
<tr>
<td>Breakout force with tilt cylinder</td>
<td>54,300 lb (24 630 kg)</td>
<td>50,993 lb (23 130 kg)</td>
</tr>
<tr>
<td>Maximum rollback:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. Ground</td>
<td>42°</td>
<td>42°</td>
</tr>
<tr>
<td>Carry position</td>
<td>49°</td>
<td>49°</td>
</tr>
<tr>
<td>@ Maximum reach</td>
<td>63°</td>
<td>63°</td>
</tr>
<tr>
<td>@ Full height</td>
<td>65°</td>
<td>65°</td>
</tr>
<tr>
<td>N. Dig depth</td>
<td>3.0 in (75 mm)</td>
<td>4.5 in (115 mm)</td>
</tr>
<tr>
<td>Maximum grading angle with bucket – back dragging</td>
<td>62°</td>
<td>62°</td>
</tr>
<tr>
<td>Loader clearance circle with bucket</td>
<td>609.4 in (15 480 mm)</td>
<td>603.0 in (15 310 mm)</td>
</tr>
</tbody>
</table>

NOTE: Performance data unit equipped with 29.5 x 25.0 XHA tires, ROPS cab with heater and air conditioner, standard counterweight, standard batteries, wide front and rear fenders, full fuel and 175 lb (79 kg) operator. Specifications per SAE J732, J1234, J695, J742, and J818.
STANDARD EQUIPMENT

OPERATOR ENVIRONMENT
See page 1

ENGINE
Cummins QSX 11.9
Tier 4 Interim Certified
Turbocharger
Charge air cooling
Automatic fan belt tensioner
Integral engine oil cooling
Fuel filter with water trap
Dual element air cleaner
Liquid-cooled radiator
Non spark-arresting muffler
Grid heater
Fuel heater

HYDRAULICS
3-spool joystick and auxiliary control lever
Low-effort steering
Hydraulic driven fan
Reversing fan
Temperature controlled
8 Diagnostic quick couplers

POWERTRAIN
4-wheel drive
Axle coolers
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
Downshift button
Torque converter
Outboard planetary axles
Front locking differentials
Transmission oil cooler
Brake pedal transmission disconnect
Hydraulic wet disc brakes
Spring-applied hydraulic release parking brake

LOADER
See page 2

ELECTRICAL
70 amp alternator
(2) 1000 CCA 12-volt batteries
Lights:
2 front driving headlights – high/low beam
2 front flood
2 stop/tail lights
2 rear flood
Front and rear turn signal/flash
Backup alarm

OTHER
Front and rear fenders
Standard counterweight
Drawbar hitch
Articulation locking bar
Lift and tie-down points – front/rear
RH steps and platform
Heated side mirrors
DC converter – 24 Volt to 12 Volt
Radio/USB/CD player – Bluetooth hands-free

TELEMATICS
CASE SiteWatch™ Telematics – includes hardware. Use special instructions for the 3-yr Advanced data subscription activation and reimbursement

OPTIONAL EQUIPMENT

OPERATOR ENVIRONMENT
Fire extinguisher
Additional cab lights:
  2 front
  2 rear
Rotating beacon
Second brake pedal
Two pedal brake

ENGINE
Engine air pre-cleaner

POWERTRAIN
F/N/R switch in loader control joystick handle
5-speed transmission

HYDRAULICS
Ride Control
3-spool loader valve with 3-lever loader control
Joystick steering
Emergency steering system

LOADER
XR configuration

TIRES
29.5 X 25.0, 28PR L5 Bias
29.5 X 25.0, 22PR L3 Radial – Triangle
26.5 X 25.0, Bias Ply

OTHER
Tool box
Sound Shield noise suppression package
Wheel chocks
XTD counterweight on standard machine – additional 1,210 lb (549 kg)

NOTE: All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.
NOTE: All engines meet current EPA emissions requirements.
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