



Commercial mobile generator set

Onan SD 20
20 kW 60 Hz
U.S. EPA Tier 4



Features

- Tier 4 emissions compliance without requiring diesel exhaust fluid (DEF)
- Over 100 years of Cummins power generation technology and innovation
- Listed to CSA standards for all models
- Powerful 36 hp engine
- Total weight - 1035 lbs. (469 kg)
- Low vibration for smooth operation
- Cross-flow radiator provides increased cooling efficiency
- Warranty supported by a worldwide Cummins twenty-four hour, seven days-a-week, distributor network
- Accepts 100% rated load in a single step
- Standard Power Command Control (PCC) 1300 technology provides digital (precise) frequency and voltage regulation.

Model	Fan	Watts	Voltage	Amps	PF	Phase	Circuit breaker
20HDKDB-01	Pusher	20,000	120/240	83	1.0	1	(1) 3-pole, 100 A
20HDKDB-02			120/208	69	0.8	3	

GenSet ratings are at intermittent power output.
The GenSet continuous rating is 85% of intermittent output.

No. 2 diesel fuel consumption gph (L/hr)

No load	50% load	Full load
0.14 (0.5)	0.70 (2.6)	1.44 (5.5)

Sound

79 dB(A)	Readings at 10 ft. (3 m) before installation at full load. A typical installation will reduce the sound level.
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GenSet specifications

Voltage regulation, no load to full load	±10%
Voltage regulation, constant load	±0.5%
Frequency regulation, no load to full load	±0.5%
Frequency regulation, constant load	±0.2%

Engine specifications

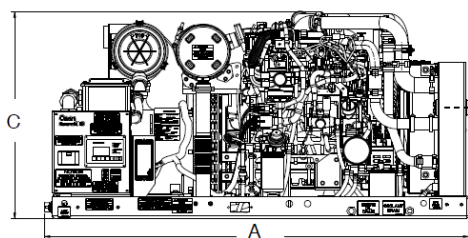
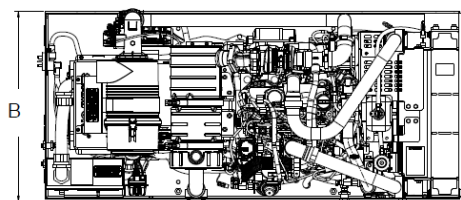
Base engine	Kubota D1803-CR-TIE4BG
Design	4-cycle, liquid-cooled diesel engine
Cylinders	3, inline vertical
Bore	3.43 in. (87 mm)
Stroke	4.03 in. (102.4 mm)
Displacement	111.4 in ³ (1826 cm ³)
Compression ratio	16:1
Lube oil capacity	7.4 qt. (7 L)
Cooling system capacity	2.75 gal. (10.41 L)
Power (max)	At 1800 r/min 36.2 hp (27.0 kW)*
Aftertreatment	Diesel Oxidation Catalyst (DOC)
Starting system	12 V
Minimum Battery Capacity CCA (Cold Cranking Amps)	650 amps down to 0°F (-17°C) 875 amps down to -10°F (-23°C) 1000+ amps down to -20°F (-29 °C)
Combustion chamber	Direct injection
Operating temperature	-20 °F (-29 °C) to 138 °F (59 °C)

*All 60 Hz models operate at 1800 rpm.

Alternator specifications

Design	4-pole synchronous
Insulation system	Class H
Exciter type	Self-exciting
Bearings	Single
Cooling	Direct-drive centrifugal blower

Outline



NOTE: This outline drawing is provided for general reference only and is not intended for design or installation. For more information, see the Installation manual or obtain drawing HDKDB-01 and wiring diagram A064T711 from your distributor/dealer or QuickServe Online.

All models	Dim "A" in. (cm)	Dim "B" in. (cm)	Dim "C" in. (cm)
Open set	58.3 (148)	26.3 (67)	28.2 (72)

GenSet standard features

- 3-cylinder diesel engine, radiator cooled
- Coolant heater with 120V power plug
- Right hand service and maintenance items
- Instant one-touch stop
- Automatic timed glow plugs for quick easy start
- Easy access fuse/relay box
- Maintenance free electronic governor
- Integral enclosed muffler
- Integral 4-point vibration isolation system
- Relocatable bulkhead fuel and battery connections
- Circuit breaker connection
- Electric fuel pump, long-life fuel filter
- Spin-on, full-flow oil filter
- 60 amp battery charging alternator
- Water resistant controls

Optional accessories

- Remote HMI with 30' harness (P/N A067X842)
- Current transformers option
Transformer, Current (P/N A074U294 Qty 3)
Harness, Wiring (P/N A076U238 Qty 1)

GenSet derates

Altitude		Derate					
feet	meters						
11811	3600	0.87	0.80	0.74	0.68	0.63	0.59
10827	3300	0.90	0.83	0.76	0.70	0.65	0.61
9843	3000	0.92	0.85	0.79	0.73	0.67	0.62
8858	2700	0.95	0.88	0.81	0.75	0.69	0.64
7874	2400	0.98	0.90	0.83	0.77	0.72	0.66
6890	2100	1.00	0.93	0.86	0.80	0.74	0.69
5906	1800	1.00	0.96	0.89	0.82	0.76	0.71
4921	1500	1.00	0.99	0.91	0.85	0.78	0.73
3937	1200	1.00	1.00	0.94	0.87	0.81	0.75
2953	900	1.00	1.00	0.97	0.90	0.83	0.78
1969	600	1.00	1.00	1.00	0.93	0.86	0.80
984	300	1.00	1.00	1.00	0.95	0.89	0.82
0	0	1.00	1.00	1.00	0.98	0.91	0.85
Ambient °F (°C)*		32 (0)	50 (10)	68 (20)	86 (30)	104 (40)	122 (50)

*Ambient is defined as the air temperature measured at the cooling air inlet to the GenSet.

GenSet test conditions

- GenSet was tested at -20 °F (-29 °C) for starting and operation.
- GenSet was tested with commercial loads.
- GenSet was tested in high humidity conditions

NOTE: This GenSet is designed to resist salt spray corrosion damage. However, Cummins advises avoiding the use of this GenSet in environments involving direct salt spray.

PowerCommand® 1.1 control system



The PowerCommand Control is an integrated GenSet control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional GenSet control systems. Prototype tested; UL, CSA, and CE compliant. The PowerCommand Control system includes:

Environment

- Ambient operating temperature from: -40 to +70 °C (-40 to 158 °F) HMI from -20 to +70 °C (-4 to 158 °F)
- Operating altitude up to 5000 m (13,000 ft)

Features

- Control boards potted for environmental protection
- InPower™ PC-based service tool available for detailed diagnostics
- Battery monitoring and testing features and smart starting control system

AC protection

- Field overload
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Integrated digital electronic voltage regulator

Digital voltage regulation

- Three-phase line-to-line sensing
- Configurable torque matching
- Integrated digital electronic voltage regulator

Engine data

- DC voltage battery charge
- Lube oil pressure
- 12 VDC battery configuration

Alternator data

- 60 Hz frequency
- Three-phase AC current
- AC: Single or three-phase line-to-line or line-to-neutral
- Digital output voltage regulation within +/-10% any loads between no load to full Drift equals no more than +/-10% for 40 °C (104 °F) temperature change in eight hours

Control functions

- Cycle cranking
- Configurable input (1)
- Configurable output (1)
- Remote emergency stop
- Time delay start and cooldown

Engine protection

- Cranking lockout
- Overspeed shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Sensor failure indication
- Low fuel level warning or shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low, and weak battery voltage warning

Operator/display panel

- Manual off switch
- Alphanumeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)

Other display data

- Fault history
- Start attempts, starts, running hours
- Data logging and fault simulation (requires InPower™ service tool)

After sales support

Cummins GenSets are supported by the largest and best trained worldwide authorized distributor/dealer network in the industry. This network of knowledgeable Cummins distributor/dealers will help you select and install the right GenSet and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly-used GenSet maintenance parts, accessories and products plus manuals and specification sheets. They can answer your questions regarding proper operation, maintenance schedules, and more.

Manuals:

The Installation manual (A066T981) and the Operation and Maintenance manual (A066T982) ship with the GenSet. To obtain additional manual copies or other documents for this model, visit QuickServe Online or request them from your Cummins sales or service representative.

Parts:

A spare parts list (A066T983) is available through QuickServe Online.

Warranty:

The limited warranty covers any failures of the product resulting from a defect in material or factory workmanship under normal use and service for 2 years from warranty start date or 2,000 hours, whichever occurs first. Parts and labor will be covered for warrantable failures except routine maintenance during the two year warranty coverage period.

To easily locate the nearest Cummins distributor/dealer in your area, or for more information, contact us at 1-800-CUMMINS, or www.power.cummins.com

Applicable codes and standards

US EPA Tier 4 certified for mobile applications.

ISO 9001:2015 This product has been manufactured under the controls established by an approved management systems that conforms with ISO 9001:2015.



CSA Group tests products under a formal process to ensure that they meet the safety and/or performance requirements of applicable standards. This GenSet is certified to: CSA 22.2 No. 100 Motors and Generators; CSA 22.2 No. 0.4-044 Bonding of Electrical Equipment; CSA 22.2 No. 14 Industrial Control Equipment; and CSA 22.2 No. 0 General Requirements - Canadian Electrical Code, Part II.

Warning: Do not use this generator set on a boat. Such use may violate U.S. Coast Guard regulations, and can result in severe personal injury or death from fire, explosion, electrocution, or carbon monoxide poisoning.

Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect GenSets to any building electrical system except through an approved device or after the building main disconnect is open. Neutral connection must be bonded in accordance with National Electrical code.

Specifications are subject to change without notice

Power You Can Rely On

To order, contact kristin.m.schmitt@cummins.com.

Visit power.cummins.com to view all your power solutions.



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Printed in U.S.A.
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