

SOUNDPROOF DIESEL GENERATING SETS

DCA-LS Series

Powerful & Eco Friendly
Low Emission type
25kVA~400kVA



Denyo

100LS

LOW EMISSION & SILENT GENERATOR

ECO FRIENDLY

Clean Engine Meeting Japan's Stringent Exhaust Gas Regulations

“DCA-LS Series” is compliant with Stage III of Japanese exhaust gas regulations by the MLIT Japan.

In line with Japan's exhaust gas reduction regulations, DCA-LS Generators are equipped with super-high-tech clean engine systems, including common-rail type fuel injectors,*1 which inject fuel at the optimum pressure for the load by raising the fuel pressure, as well as Cooled Exhaust Gas Recirculation (EGR)*2, which is a technology that reduces NOx generation by returning some of the exhaust gas to the air supply line. A cooler is also installed in the exhaust returning line to cool down exhaust gases.

These power generators are clean, quiet, and capable of meeting increasingly stringent environmental requirements. Further, we have adopted Positive Crankcase Ventilation (PCV) type engines that generate no blow-by gas. (Isuzu and Kubota engines are used.) There are also other series of power generators equipped with our original blow-by gas treatment systems that can keep the insides of the generators clean.

*1 Equipped DCA-60LS and above.

*2 Equipped DCA-45LS and above (except DCA-150LS)

Quiet operation

Exceptionally quiet operation accomplished through the use of state-of-the-art soundproofing technology. “DCA-LS Series” is designated “Super low noise construction equipment” or “Low noise construction equipment” by the MLIT Japan.

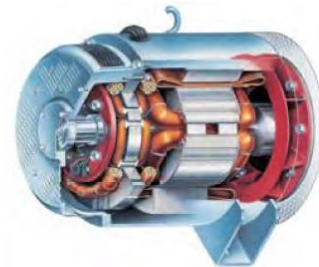


HIGH PERFORMANCE

Equipped with High Performance Generator

Power Generators with Less Waveform Distortion and Voltage Fluctuation

With their intensified damper wiring, our generators are less vulnerable to waveform distortion, even when the load applied to the rectifiers changes. They are also highly resistant to negative-sequence current. Moreover, since they can restrict voltage fluctuation, they can resist inverter load, thyristor load, and computer control load. They are suitable for lighting at event sites, precision apparatuses, and measurement equipment.



Generators with Good Motor Activation

The transient reactance of our generators is low, and with the introduction of original excitation systems, their motor activation performance is good. Moreover, since our generators can reduce instantaneous voltage drops and can restore voltage in a short period of time, they have little effect on the other electric equipment when starting up devices sequentially.

Parallel Operation Feature (DCA-125LS and above.)

From time to time, at a construction site, mine site or in other situations, a large temporary power supply is required for a particular job. To meet this requirement Denyo's DCA-LS Series generators incorporate a built-in parallel operation drive system, allowing you to create a large capacity generating plant on-site, without the need to procure any other equipment.



Dual Voltage System (DCA-45LS/60LS/DCA-100LS and above.)

For companies that operate internationally or have motors that require power at different voltages, a different generator is usually required for each voltage setting. However, the DCA-LS Series generators are equipped with a dual voltage system, so one generator can be used to power motors with different voltage settings. An extremely convenient feature.



Generators Equipped with Electronic Governors

Equipped with electronic governors that control the engine speed electronically, our generators can maintain a constant RPM regardless of the amount of load applied (isochronous control*1). You can shift the control method to droop control if the purpose of use so requires, and you can control the speed using switches in a control box.*2

*1: Only isochronous control mode is available for DCA-25LS and 45LS.

*2: Power generators from DCA-60LS to 400LS series are set to droop control upon shipment from the plant.

* Power generators above DCA-60LS class are equipped with a control mode change switch.



HIGH DURABILITY

Durable Generators Withstanding Long-Term Wear

We develop, manufacture, and assemble all components other than the engines ourselves. We perform stringent durability tests and quality inspections with the assumption that the generators will be used under severe conditions, and so they boast outstanding quality and durability.



Salt Damage-Resistant Specification

Assuming that power generators will be used at offshore construction sites or coastal sites, all of our generators use a cation electrodeposition coating method for high rust resistance. In addition, rust-resistant tightening bolts are used, and stainless bolts are used for all generators above DCA-220LS.

For DCA-300LS and DCA-400LS, insulation performance deterioration prevention treatment is applied to generators and controlling components. The bonnets are coated with chlorine-resistant paint, and caulking treatment is performed as a standard. (The above treatment is available for generators of other series as an option.)



SAFETY DEVICE

Automatic Safety Controls

The generating set shall be equipped with automatic safety controls which will shut down the engine in the event of any abnormal condition.

	Engine shut down	Circuit breaker will trip	Alarm lamp
Low lubricating oil pressure	○	—	○
High jacket water temp.	○	—	○
Over current of generator	—	○	—
Earth leakage	—	○	○
Fuel level failure	—	—	○
Air element blinding	—	—	○
Over speed	○	—	○※1

*Except DCA-25LS

Earth Leakage Relay

To prevent electric shock, it is recommended that these generators are equipped with leakage detectors and a relay circuit breaker.



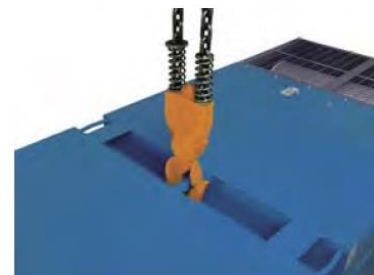
Engine Failure Diagnosis Device

DCA-150LS, DCA-300LS, and DCA-400LS are each equipped with a failure diagnosis device, and in the event of engine failure, the monitor will display 80 failure factors. This system enables you to immediately identify the damaged portions and restore the failures smoothly. (Failures are indicated with preheat display lamps for DCA-25 to 45, and with flashing light patterns on the control boxes for DCA-60LS, 100LS, 125LS, and 220LS.)



TRANSPORTABILITY

- The new designs of the DCA Series range have achieved significant size and weight reductions over previously produced models, through improvements in coupling techniques and alternator design.
- The sturdy weatherproof steel bonnet on a heavy-duty steel skid base allows easy handling by a forklift.
- The balance point lifting hook (lug) fitted on the roof of each machine facilitates easy transportation using a crane.
- All models are modular designed, so that generators can be stacked, thereby making the best use of your valuable storage area.



MAINTENANCE

Large Doors & One-Touch Handles

We have adopted large doors for easy daily inspection and maintenance. The doors have one-touch handles, making them smooth to open and close. They are also equipped with a key lock system.



Easy Daily Maintenance

We have adopted a one-side maintenance system to allow daily maintenance on one side, including maintenance of engine oil, batteries, and cooling water, etc.

Easy Cleaning of Radiators

The open/close-type front covers we have adopted make it easy to clean the radiators without removing them.



OPERABILITY

- Operation switches and meters are arranged functionally, and a one-panel system has been adopted so that the equipment is easy to understand and operate even for people who are unfamiliar with it. Every generator is also equipped with a high-visibility digital engine monitor as a standard.

-The control panel switches are arranged in accordance with operation procedures, and each switch has a number, so that anybody can switch them on and off safely and without error.

-Thanks to the electronic governor system, you can change the engine speed with just a single touch of a switch instead of the conventional lever operation.

FULLY APPOINTED CONTROL PANELS FOR EASE OF USE AND MONITORING GENERATOR PERFORMANCE.

① Indicator
Engine Speed, Oil Press., Water Temp., Battery

② Fuel Level Indicator

③ Warning Lamp
Oil Pressure, Water Temperature, Air Filter, Over Speed

④ Hour Meter

⑤ Frequency Meter

⑥ Panel Light Switch

⑦ Panel Light

⑧ AC Ammeter

⑨ Pilot Lamp

⑩ Voltmeter

⑪ Earth Leakage Relay

⑫ Output Voltage Indication Lamp

⑬ Circuit Breaker (1-Phase, 3-Phase)

⑭ Emergency Stop Button

⑮ Voltage Regulator

⑯ Speed Regulator

⑰ Starter Switch

⑱ Single-Parallel Change Over Switch

⑲ Speed Change Over Switch

⑳ Frequency Change Over Switch

㉑ Synchronizing Lamp

① Indicator
Engine Speed, Oil Press., Water Temp., Battery

② Fuel Level Indicator

③ Warning Lamp
Oil Pressure, Water Temperature, Air Filter, Over Speed

④ Hour Meter

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㉑ Synchronizing Lamp

SPECIFICATION TABLE (25kVA~125kVA CLASS SOUNDPROOF TYPE)

MODEL		DCA-25LSK		DCA-45LSK		DCA-60LSI		DCA-100LSI		DCA-125LSI	
AC Generator											
Frequency	Hz	50	60	50	60	50	60	50	60	50	60
Output Rating	Continuous	20	25	37	45	50	60	80	100	100	125
	kVA ¹⁾ Standby	22	27.5	38.9	47.3	55	66	88	110	110	138
No. of Phases		3-Phase,4-Wire									
Rated Voltage ²⁾		50Hz:190~220 /380~440 60Hz:190~240 / 380~480									
Power Factor		0.8(Lagging)									
Voltage Regulation %		Within ±0.5									
Excitation		Brushless ,rotating exciter(With A.V.R)									
Insulation		Class F									
Engine											
Model		Kubota V2403-K3A		Kubota V3800-DI-T-K3A		Isuzu BJ-4JJ1X		Isuzu BI-4HK1X		Isuzu BI-4HK1X	
Type		Inlined, Swirl Chambered		Inlined, Direct Injected Turbocharged		Common Rail, Inlined, Direct Injected, Turbocharged					
Output Rating	Ps/rpm	25.9/1500	32.2/1800	51.6/1500	62.0/1800	65.1/1500	77.6/1800	124.5/1500	154.5/1800	124.5/1500	154.5/1800
	kW/min ⁻¹	19.1/1500	23.7/1800	38.0/1500	45.6/1800	47.9/1500	57.1/1800	91.6/1500	113.6/1800	91.6/1500	113.6/1800
No. of Cylinders-Bore×Stroke mm		4-87×102.4		4-100×120		4-95.4×104.9		4-115×125		4-115×125	
Piston Displacement L		2.434		3.769		2.999		5.193		5.193	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent									
Fuel Consumption ³⁾ L/h		3.9	4.9	7.0	8.8	8.6	10.3	14.0	18.1	17.1	21.7
Lube Oil Sump Capacity L		9.7		13.2		15.0		23.0		23.0	
Coolant Capacity L		7.9		10.9		11.8		25.0		27.0	
Battery×Quantity		80D26R×1		115D31R×1				170F51×1			
Fuel Tank Capacity L		70		100		140		225		250	
UNIT											
Dimensions	Length mm	1540		1850		2090		2550		2650	
	Width mm	700		880		950		1080		1080	
	Height mm	950		1250		1280		1500		1500	
Dry Weight kg		615		985		1160		1770		1920	
Sound Power Level											
7m dB(A) 1500/1800rpm(min ⁻¹) ⁴⁾		59	64	58	61	61	65	60	64	60	64
LwA dB No load,60Hz		89●		87●		91●		92●		92●	
Exhaust gas regulations		Stage III (Japanese)									

*1 Depending on voltage, output rating(kVA) may differ from values listed in catalog. *2 Depending on location and area, output voltage may differ from values listed in catalog.

*3 Fuel consumption is based on operation at 75% load.*4 Sound level reflects high-speed no-load operation and is calculated by averaging the measurements at four points, each 7 meters from the source.

●: Super low noise construction equipment designated by the MLIT Japan



DCA-25LSK



DCA-45LSK



DCA-60LSI



DCA-100LSI



DCA-125LSI

Other Options

The following options are also available:

– **Reverse power relay**

For DCA-125LS and above.

– **AC power meter**

For DCA-125LS and above.

– **Bearing/stator temperature gauge**

For DCA-125LS and above.

– **Lubricant temperature gauge**

Provided as standard feature for DCA-220LS and above.

– **Keyed fuel tank cap**

For DCA-25LSKE, 25LSK to 400LSK

Provided as standard feature for DCA-45LSKE to 400LSKE,
DCA-25LSKB to 220LSIB

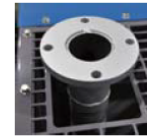
– **Keyed rear door**



– **3 way valve**



– **Mounting of muffler flange**



*Other options for different ranges and operating capabilities are available. Please feel free to consult with Denyo.

* Some options may not be available depending upon the model. Confirm the details with a Denyo sales person.

HOW TO SELECT A GENERATOR

Range of motor capacities that can be used with Denyo generators.

Choosing generator output according to motors and other loads is made simple by referring to the motor capacity range and generator output in this table.

Item \ Model		DCA-25		DCA-45		DCA-60		DCA-100		DCA-125	
		50	60	50	60	50	60	50	60	50	60
Frequency (Hz)		50	60	50	60	50	60	50	60	50	60
EG capacity (kVA)		20	25	37	45	50	60	80	100	100	125
Motor capacity (kW)	Direct startup	6.3	7.6	12.3	14.9	16	20.5	27.2	34.5	34.5	42.5
	Y-Δ startup (1)	9.5	11.4	18.5	22.4	24	30.8	40.8	51.8	51.8	63.8
	Y-Δ startup (2)	15.7	19.5	28.2	34.3	38.4	46	62	68	68	97

Item \ Model		DCA-150		DCA-220		DCA-300		DCA-400	
		50	60	50	60	50	60	50	60
Frequency (Hz)		50	60	50	60	50	60	50	60
EG capacity (kVA)		125	150	200	220	270	300	350	400
Motor capacity (kW)	Direct startup	42.5	51	68	76	91	102	119	136
	Y-Δ startup (1)	63.8	76.5	102	114	136	153	179	204
	Y-Δ startup (2)	97	115	154	172	208	231	270	308

Motor usage examples in the above table are benchmark values : generator capacity will differ according to the required momentary voltage drop, motor load factor, and size of startup capacity, as well as motor age and efficiency.

Notes

- Momentary voltage drop when a motor starts up is assumed to be within 30% of no-load voltage.
- Motor startup kVA is assumed to be 7kVA per 1kW.
- Motor efficiency is assumed to be 85%, and load factor about 90%.
- Values shown for Y-Δ startup (1) and Y-Δ startup (2) are open and closed, respectively; needed generator capacity differs depending on startup state.
- Not appropriate for determining the capacity of emergency generating equipment (especially disaster-prevention generating equipment).



ISO 9001:2008 Certified
ISO 14001:2004

Denyo[®] The Denyo trademark is widely recognized as a brand, and is a registered trademark in 90 countries around the world.

Direct inquiries to the nearest Denyo distributor or to Denyo co.,Ltd.

 **Denyo Co.,Ltd.**

Head office:2-8-5,Nihonbashi-horidomecho,Chuo-ku,Tokyo

103-8566,Japan

Tel:+81-3-6861-0055 Fax:+81-3-6861-1188

www.denyo.co.jp/english/

