

Power source technology for the future

Denyo[®]

DIESEL ENGINE DRIVEN GENERATOR
DCA-Series



Denyo : Making a Difference on Worksites Worldwide

We use electricity every day, taking it for granted. However, there are a surprising number of situations in which electricity supplied by the power company cannot be used or when there is not enough electricity, such as on construction sites, during disasters, and in developing countries. At such times, we supply as much electricity as is needed, whenever and wherever. And we meet the expectations of customers around the world. Taking this as its mission, Denyo has been working to develop better products ever since its foundation.



CONTENTS

DENYO'S STRENGTH	03
SOUNDPROOF TYPE<10.5-1100kVA>	07
ULTRA SOUNDPROOF TYPE	08
SOUNDLESS TYPE	14
OPTIONS	15
HOW TO SELECT A GENERATOR	18
GLOBAL NETWORK	19



Denyo's Strengths

Market share in Japan for
generators

70%

Boasting a high share of the Japanese market, Denyo is a leading company in outdoor power sources

Since its establishment in 1948, Denyo has firmly created its own technology, including the release of high-performance, engine-driven generators featuring excellent energy savings and the commercialization of Japan's first small, lightweight engine-driven welders, and has launched a succession of products specialized for use in outdoor locations without sources of power. As a result, today Denyo has grown into a leading company in outdoor power sources, with a market share of 70% in Japan for engine-driven generators, our main product.

Quality products that come from thorough start-to-finish production from design to product finishing

One reason we can create such high-quality products is our thoroughly integrated production of everything besides the engines, from design and manufacture of machine parts to assembly and finishing. Integrated production also enables us to provide products that truly meet customers' individual needs by rapidly manufacturing made-to-order products.

150
Countries

Our products are used in 150 countries worldwide

Featuring excellent reliability and durability, high sound insulation, and supplying quality electricity, Denyo's generators are used not only as power sources on construction sites but also as precious sources of power for daily life in developing countries and sparsely populated deserts, isolated islands, and mountainous areas not reached by electricity.

They are also used as power sources for events and as backup power sources in times of disaster and power outages. Thus far, our generators have helped people throughout the world, having been selected in important situations, for example, by customers as the power source for Singapore's Independence Day ceremonies and for reconstruction of the areas affected by the major earthquake in Haiti.

We carefully manufacture generator coils from a single wire



Winding of copper wire to the rotor by automatic winding machine



Varnishing of rotors for protection against vibrations, corrosion and harmful substances

High-Performance

The Denyo generating system guarantees the following levels of performance

TEMPERATURE RISE	100°C temperature rise at 40°C ambient (JEC2130*1).
INSULATION	Class F (JEC2130) or Class H (JEC2130)
VOLTAGE REGULATION	Within ±0.5% (except DCA-400SPKII & DCA-400ESK)
FREQUENCY REGULATION	Within 5.0% through no-load to full-load.
VOLTAGE WAVEFORM	Deviation Factor of open-circuit terminal voltage does not exceed 0.06.
ELECTROMAGNETIC INTERFERENCE	Attenuated to meet most commercial requirements.
INSULATION RESISTANCE	Higher than 3 Mega-ohms, measured between armature windings and earth, field windings and earth, field control circuit and earth.

*1 Standard of Japanese Electrotechnical Committee

The innovative excitation system* fitted on all models, in conjunction with the AVR and advanced brushless generator, provides fast voltage regulation in response to load variations, enabling use soon after start up. This system provides output stability during load variations.

*U.S. Patent No. 4268788



Parallel Operation Feature

(Standard feature for DCA-125 to 800.)

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 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

(Details are as per specification table.)

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 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.



Equipped with Electronic Governors

(Details are as per specification table.)

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 Generator from DCA-60USIE and above are set to droop control upon shipment from the plant.

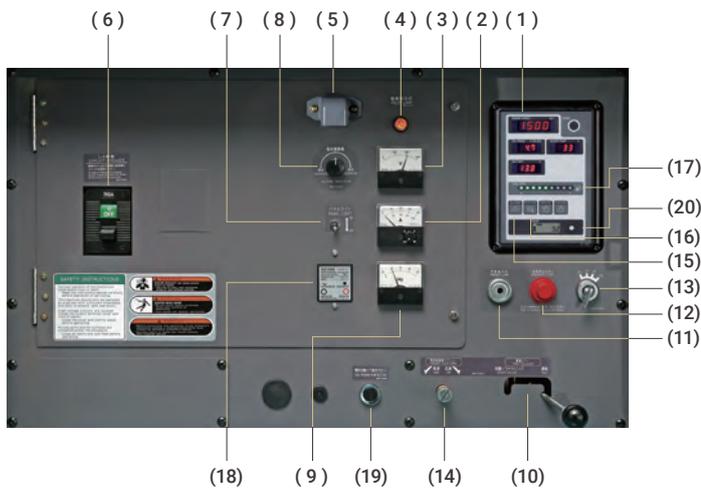
*2 Only isochronous control mode is available for DCA-45USKE



User-Friendly

Control Panel with Outstanding User-Friendliness

Denyo's generators feature a functional panel layout that can be easily operated even by first-timers.



- | | |
|--------------------------|--------------------------------------|
| (1) Indicator | (11) Preheat Lamp |
| (2) AC Ammeter | (12) Emergency Stop Button |
| (3) Voltmeter | (13) Starter Switch |
| (4) Pilot Lamp | (14) Frequency Adjust Screw |
| (5) Panel Light | (15) Warning Lamp(Oil Pressure) |
| (6) Circuit Breaker | (16) Warning Lamp(Water Temperature) |
| (7) Panel Light Switch | (17) Fuel Level Indicator |
| (8) Voltage Regulator | (18) Earth Leakage Relay |
| (9) Frequency Meter | (19) Fuel Priming Pump Button |
| (10) Throttle Lever | (20) Hour Meter |



Output Terminal

- Large fuel gauge is fitted for simple viewing.
- External drain plugs for oil, fuel and water are fitted for convenience in performing routine maintenance.



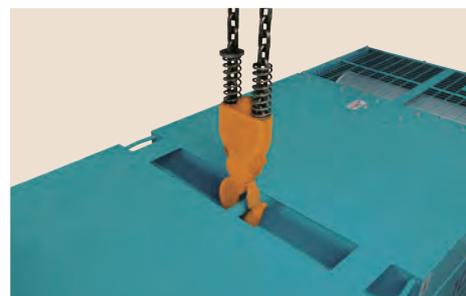
-All daily maintenance requirements can be performed from one side of the machine. The large doors give you full access to the engine.

-For major engine overhauls, the bonnet can be simply unbolted, which allows full access to the engine.



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.



Safety

Provision of Various Protective Devices and Warning Lamps

-A circuit breaker is provided to protect the generator from shorting of the load circuit or an overload.

-An emergency stop device is provided to automatically detect an engine malfunction and shut down the unit as well as a warning lamp.

Item	Operation Display	Engine Shut down	Circuit breaker will trip	Alarm Lamp
Low Oil Pressure		○	○ ^{*1}	○
High water temperature		○	○ ^{*1}	○
Over Current		-	○	-
Earth leakage		-	○	○
Insufficient charging		○	-	○
Low fuel level		- (○ ^{*2})	- (○ ^{*2})	○
Air Element Blinding ^{*3}		-	-	○
Over-speed ^{*3}		○	○ ^{*4}	○ (- ^{*5})

Mark ○ : Operates Mark - : Does not operate

*1 DCA-125 and above. *2 DCA-1100SPK, DCA-1100SPM2 only.

*3 DCA-45 and above. *4 Exclude DCA-125SPK3, DCA-100ESI and below.

*5 Exclude DCA-1100SPM2.

Earth Leakage Relay

To prevent electric shock, it is recommended that these generators are equipped with Earth Leakage Relay.



Emergency Stop Button

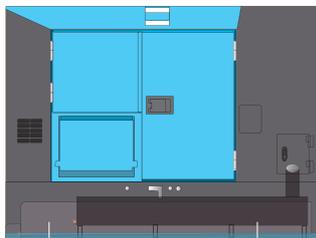


Environment-Friendly

ECO-BASE

(DCA-25USIE/45USKE/25MZ/45MZ/60USIE)

ECO-BASE is a base which has an oil receiver installed inside. You do not need to put an extra tray on the bottom of generator. It is designed to receive fuel, oil and coolant water when they are discharged accidentally.



ECO-BASE (Oil Receiver) Fuel Tank

Fluid Level Indicator

Fluid Level Warning Lamp gauges the level of fluid inside the ECO-BASE. It lights up immediately when fluid reaches 50% capacity.



Fluid Level Warning Lamp

Easy to Drain

Water and oil collected in ECO tank drains easily through large caliber drain valve. Swivel-type oil drain increases the speed of draining compared to conventional type.



Large Caliber



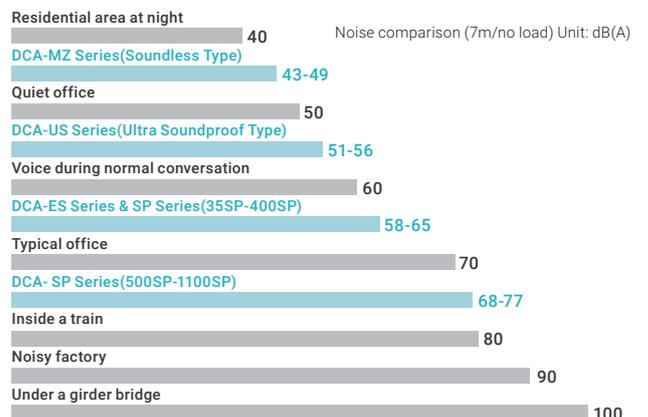
Swivel-type Oil Drain

Quiet Operation

Denyo's generators run quietly thanks to the Company's original soundproofing technology. The Soundless Type & Ultra Soundproof Type in particular features a low-noise engine, low-noise fan, the addition of a silencer, and special structures such as changes to the hood shape, which create a low noise level similar to that of a quiet office.



Soundless Type Ultra Soundproof Type Soundproof Type



SPECIFICATION TABLE

(10.5kVA - 45kVA CLASS SOUNDPROOF TYPE)

		DCA-13LSK		DCA-15LSK		DCA-25ESK		DCA-25ESI		DCA-35SPK		DCA-45LSK2			
ALTERNATOR															
Frequency	Hz	50	60	50	60	50	60	50	60	50	60	50	60		
Output Rating (kVA)	Continuous	10.5	13	12.5	15	20	25	20	25	30	35	37	45		
	Standby	11	13.7	13.8	16.5	22	27.5	22	27.5	31.5	36.75	37	45		
No. of Phases		3-Phase, 4-Wire													
Rated Voltage*1		(1) or (3) Single Voltage				(2) Dual Voltage				(1) or (3) Single Voltage		(2) Dual Voltage			
Power Factor		0.8 (Lagging)													
Voltage Regulation %		Within ±0.5													
Excitation		Brushless, Rotating Exciter (With A.V.R.)													
Insulation		Class F										Class H			
ENGINE															
Maker & Model		Kubota D1403-K3A		Kubota D1703-K3A		Kubota V2203-KB		Isuzu AA-4LE2		Kubota V3300-EB		Kubota V3600-T-K3A			
Type		Inlined, Swirl Chambered						Inlined, Direct Injected		Inlined, Swirl Chambered					
Output Rating	PS/rpm	13.9/1500	16.9/1800	16.9/1500	20/1800	25/1500	32.2/1800	26/1500	32/1800	38.5/1500	44.1/1800	45.0/1500	51.3/1800		
	kW/rpm	10.2/1500	12.4/1800	12.4/1500	14.7/1800	18.4/1500	23.7/1800	19.1/1500	23.5/1800	28.3/1500	32.4/1800	33.1/1500	37.7/1800		
No. of Cylinders-Bore x Stroke mm		3-80×92.4		3-87×92.4		4-87×92.4		4-85×96		4-98×110		4-98×120			
Piston Displacement L		1.393		1.647		2.197		2.179		3.318		3.620			
Fuel		ASTM No. 2 Diesel Fuel or Equivalent													
Fuel Consumption*2 L/h		2.4	2.9	2.8	3.4	3.9	4.9	3.3	4.2	5.8	6.9	7.1	8.9		
Lube Oil Sump Capacity L		5.6		5.6		7.6		8.5		13.2		13.2			
Coolant Capacity L		6.4		6.4		7.9		6.6		10.5		10.9			
Battery x Quantity		80D26R×1						95D31Rx1		115D31Rx1					
Fuel Tank Capacity L		62						70		82		100			
Engine Emissions		Stage III (Japanese)				Stage II (Japanese)				Stage I (Japanese)		Stage III (Japanese)			
UNIT															
Dimensions	Length	mm		1390		1390		1540		1540		1900		1850	
	Width	mm		650		650		650		680		860		880	
	Height	mm		900		900		900		900		990		1250	
Dry Weight kg		503		516		591		564		890		935			
SOUND LEVEL															
7m dB(A) 1500/1800rpm*3		58	61	60	63	61	65	60	64	60	63	57	60		

*1 Rated Voltage Classification

*4

*2 Fuel consumption is based on operation at 75% load.

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

*4 Depending on location and area, output voltage may differ from values listed in catalog.

Frequency	(1)	(2)	(3)
50Hz	190 - 220V	190 - 220V	380 - 440V
60Hz	200 - 240V	190 - 240V	380 - 480V



SPECIFICATION TABLE

(50kVA - 150kVA CLASS SOUNDPROOF TYPE)

		DCA-60ESI2		DCA-75SPI		DCA-100ESI		DCA-125SPK3		DCA-125ESK		DCA-150ESK		
ALTERNATOR														
Frequency	Hz	50	60	50	60	50	60	50	60	50	60	50	60	
Output Rating (kVA)	Continuous	50	60	65	75	80	100	100	125	100	125	125	150	
	Standby	55	66	68.3	78.8	88	110	110	138	110	138	138	165	
No. of Phases		3-Phase, 4-Wire												
Rated Voltage*1		(2) Dual Voltage												
Power Factor		0.8 (Lagging)												
Voltage Regulation %		Within ±0.5												
Excitation		Brushless, Rotating Exciter (With A.V.R.)												
Insulation		Class H				Class F								
ENGINE														
Maker & Model		Isuzu BB4BG1T		Isuzu A-6BG1		Isuzu DD-6BG1T		Komatsu SA6D102E-1-A		Komatsu SAA6D102E-2-A		Komatsu SAA6D102E-2-D		
Type		Inlined, Direct Injected, Turbocharged		Inlined, Direct Injected		Inlined, Direct Injected, Turbocharged		Inlined, Direct Injected, Turbocharged, Aftercooled						
Output Rating	PS/rpm	65.1/1500	77.6/1800	80/1500	93/1800	100/1500	124/1800	133/1500	157/1800	133/1500	157/1800	153/1500	183/1800	
	kW/rpm	47.9/1500	57.1/1800	58.8/1500	68.4/1800	73.6/1500	91.3/1800	97.8/1500	115.5/1800	97.8/1500	115.5/1800	113/1500	135/1800	
No. of Cylinders-Bore x Stroke mm		4-105×125		6-105×125		6-105×125		6-102×120		6-102×120		6-102×120		
Piston Displacement L		4.329		6.494		6.494		5.880		5.880		5.880		
Fuel		ASTM No. 2 Diesel Fuel or Equivalent												
Fuel Consumption*2 L/h		8.7	11.0	10.8	12.5	13.5	17.4	15.5	20.1	16.3	21.0	20.6	25.0	
Lube Oil Sump Capacity L		13.2		19.3		22.4		22		22		22		
Coolant Capacity L		15.4		22.9		22.0		22.7		26.4		28.4		
Battery x Quantity		95D31R×1		95E41R×2		95D31R×2		95E41R×2						
Fuel Tank Capacity L		125		155		225		250						
Engine Emissions		Stage II (Japanese)		Stage I (Japanese)		Stage II (Japanese)		Stage I (Japanese)		Stage II (Japanese)				
UNIT														
Dimensions	Length	mm	2200		2630		2750		3000		3000		3250	
	Width	mm	880		1000		1050		1080		1080		1080	
	Height	mm	1250		1300		1350		1500		1500		1500	
Dry Weight kg		1120		1590		1730		2110		2130		2390		
SOUND LEVEL														
7m dB(A) 1500/1800rpm*3		61	64	61	63	59	61	65	68	60	63	62	65	

*1 Rated Voltage Classification

Frequency	(2)	
50Hz	190 - 220V	380 - 440V
60Hz	190 - 240V	380 - 480V

*2 Fuel consumption is based on operation at 75% load.

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

*4 Depending on location and area, output voltage may differ from values listed in catalog.



DCA-60ESI2

DCA-75SPI

DCA-100ESI

DCA-125SPK3

DCA-125ESK

DCA-150ESK

SPECIFICATION TABLE

(200kVA - 300kVA CLASS SOUNDPROOF TYPE)

		DCA-220SPK3		DCA-220ESK		DCA-300SPK3		DCA-300ESK	
ALTERNATOR									
Frequency	Hz	50	60	50	60	50	60	50	60
Output Rating (kVA)	Continuous	200	220	200	220	270	300	270	300
	Standby	220	242	220	242	297	330	297	330
No. of Phases		3-Phase, 4-Wire							
Rated Voltage*1		(2) Dual Voltage							
Power Factor		0.8 (Lagging)							
Voltage Regulation %		Within ± 0.5							
Excitation		Brushless, Rotating Exciter (With A.V.R.)							
Insulation		Class F							
ENGINE									
Maker & Model		Komatsu S6D125E-2-A		Komatsu SAA6D125E-2-B		Komatsu SA6D125E-2-A		Komatsu SAA6D125E-2-B	
Type		Inlined, Direct Injected, Turbocharged		Inlined, Direct Injected, Turbocharged, Aftercooled					
Output Rating	PS/rpm	242/1500	277/1800	242/1500	277/1800	316/1500	350/1800	316/1500	350/1800
	kW/rpm	178/1500	204/1800	178/1500	204/1800	232/1500	257/1800	232/1500	257/1800
No. of Cylinders-Bore x Stroke mm		6-125x150							
Piston Displacement L		11.040							
Fuel		ASTM No. 2 Diesel Fuel or Equivalent							
Fuel Consumption*2 L/h		31.5	35.7	32.9	37.7	43.6	50.0	39.0	47.0
Lube Oil Sump Capacity L		42		42		62		62	
Coolant Capacity L		43.3		43.3		44.3		50.8	
Battery x Quantity		145G51x2 or 155G51x2				145G51x2 or 155G51x2			
Fuel Tank Capacity L		380				490			
Engine Emissions		Stage I (Japanese)		Stage II (Japanese)		Stage I (Japanese)		Stage II (Japanese)	
UNIT									
Dimensions	Length mm	3650		3700		3750		4000	
	Width mm	1300		1300		1400		1400	
	Height mm	1750		1750		1800		1800	
Dry Weight kg		3680		3790		4170		4360	
SOUND LEVEL									
7m dB(A) 1500/1800rpm*3		63	65	65	67	70	73	66	69

*1 Rated Voltage Classification

Frequency	(2)	
50Hz	190 - 220V	380 - 440V
60Hz	190 - 240V	380 - 480V

*4

*2 Fuel consumption is based on operation at 75% load.

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

*4 Depending on location and area, output voltage may differ from values listed in catalog.



DCA-220SPK3



DCA-220ESK



DCA-300SPK3



DCA-300ESK

SPECIFICATION TABLE

(350kVA - 500kVA CLASS SOUNDPROOF TYPE)

		DCA-400SPKII		DCA-400ESK		DCA-500SPK		DCA-500ESK			
ALTERNATOR											
Frequency		Hz		50	60	50	60	50	60	50	60
Output Rating (kVA)	Continuous	350	400	350	400	450	500	450	500		
	Standby	385	440	385	440	495	550	495	550		
No. of Phases		3-Phase, 4-Wire									
Rated Voltage*1		(2) Dual Voltage									
Power Factor		0.8 (Lagging)									
Voltage Regulation		%		Within ±1.0		Within ±1.0		Within ±0.5		Within ±0.5	
Excitation		Brushless, Rotating Exciter (With A.V.R.)									
Insulation		Class F									
ENGINE											
Maker & Model		Komatsu SA6D140A-1		Komatsu SA6D140E-3-A		Komatsu SA6D170-B-1		Komatsu SAA6D140E-3-B			
Type		Inlined, Direct Injected, Turbocharged, Aftercooled		Common Rail, Inlined, Direct Injected, Turbocharged, Aftercooled		Inlined, Direct Injected, Turbocharged, Aftercooled		Common Rail, Inlined, Direct Injected, Turbocharged, Aftercooled			
Output Rating	PS/rpm	421/1500	485/1800	421/1500	485/1800	520/1500	580/1800	520/1500	580/1800		
	kW/rpm	310/1500	357/1800	310/1500	357/1800	382/1500	427/1800	382/1500	427/1800		
No. of Cylinders-Bore x Stroke		mm		6-140×165		6-170×170		6-140×165			
Piston Displacement		L		15.240		23.150		15.240			
Fuel		ASTM No. 2 Diesel Fuel or Equivalent									
Fuel Consumption*2		L/h		52.1	60.8	56.0	65.1	69.5	83.1	65.8	75.9
Lube Oil Sump Capacity		L		74		79		119		91.5	
Coolant Capacity		L		68.4		67.5		92.5		88	
Battery x Quantity		190H52×2 or 210H52×2									
Fuel Tank Capacity		L		490							
Engine Emissions		Stage I (Japanese)		Stage II (Japanese)		Stage I (Japanese)		Stage II (Japanese)			
UNIT											
Dimensions	Length	mm		4200		4200		5480 (5000)*3		5380(4900)*3	
	Width	mm		1400		1400		1650		1650	
	Height	mm		2100		2100		2400		2100	
Dry Weight		kg		5420		5470		8540		7220	
SOUND LEVEL											
7m dB(A) 1500/1800rpm*4		67	68	65	67	68	71	66	69		

*1 Rated Voltage Classification

*5

Frequency	(2)	
50Hz	190 - 220V	380 - 440V
60Hz	190 - 240V	380 - 480V

*2 Fuel consumption is based on operation at 75% load.

*3 Shown unit lengths are with visor. (without visor)

*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.

*5 Depending on location and area, output voltage may differ from values listed in catalog.



DCA-400SPKII

DCA-400ESK



DCA-500SPK

DCA-500ESK



SPECIFICATION TABLE

(550kVA - 1100kVA CLASS SOUNDPROOF TYPE)

		DCA-600SPK		DCA-610SPM		DCA-800SPK		DCA-1100SPK		DCA-1100SPM2	
ALTERNATOR											
Frequency	Hz	50	60	50	60	50	60	50	60	50	60
Output Rating (kVA)	Continuous	550	600	554	610	700	800	1000	1100	1000	1100
	Standby	605	660	554	610	770	880	1100	1210	1100	1210
No. of Phases		3-Phase, 4-Wire									
Rated Voltage*1		(2) Dual Voltage						(3) Single Voltage			
Power Factor		0.8 (Lagging)									
Voltage Regulation %		Within ±0.5									
Excitation		Brushless, Rotating Exciter (With A.V.R.)									
Insulation		Class F									
ENGINE											
Maker & Model		Komatsu SA6D170-A-1		Mitsubishi S6R-PTA		Komatsu SA12V140		Komatsu SAA12V140		Mitsubishi S12H-PTA	
Type		Inlined, Direct Injected, Turbocharged, Aftercooled				Direct Injected Turbocharged, Aftercooled					
Output Rating	PS/rpm	639/1500	698/1800	703/1500	768/1800	834/1500	1000/1800	1171/1500	1324/1800	1210/1500	1292/1800
	kW/rpm	470/1500	513/1800	517/1500	565/1800	613/1500	736/1800	861/1500	974/1800	890/1500	950/1800
No. of Cylinders-Bore x Stroke mm		6-170×170		6-170×180		12-140×165		12-140×165		12-150×175	
Piston Displacement L		23.150		24.500		30.480		30.480		37.110	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent									
Fuel Consumption*2 L/h		81.8	93.7	82.0	96.4	102	120	152	169	161	188
Lube Oil Sump Capacity L		119		92		151		207		200	
Coolant Capacity L		112		118		170		237		210	
Battery x Quantity		190H52×2 or 210H52×2				190H52×4 or 210H52×4		145G51×4 or 155G51×4		190H52×4 or 210H52×4	
Fuel Tank Capacity L		490				600		800			
Engine Emissions		-									
UNIT											
Dimensions	Length mm	5580(5100)*3		5280(4800)*3		6110(5500)*3		6510(5900)*3		6510(5900)*3	
	Width mm	1650		1650		1950		2200		2200	
	Height mm	2400		2400		2500		2790		2790	
Dry Weight kg		8860		8700		11200		13000		14180	
SOUND LEVEL											
7m dB(A) 1500/1800rpm*4		67	71	69	72	70	72	70	74	73	77

*1 Rated Voltage Classification

*5

Frequency	(2)		(3)
50Hz	190 - 220V	380 - 440V	380 - 440V
60Hz	190 - 240V	380 - 480V	380 - 480V

*2 Fuel consumption is based on operation at 75% load.

*3 Shown unit lengths are with visor. (without visor)

*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.

*5 Depending on location and area, output voltage may differ from values listed in catalog.



DCA-600SPK



DCA-610SPM



DCA-800SPK



DCA-1100SPK



DCA-1100SPM2



SPECIFICATION TABLE

(20kVA - 60kVA CLASS **ULTRA SOUNDPROOF TYPE**)

		DCA-25USIE		DCA-45USKE		DCA-60USIE		DCA-60USI		
ALTERNATOR										
Frequency	Hz	50	60	50	60	50	60	50	60	
Output Rating (kVA)	Continuous	20	25	37	45	50	60	50	60	
	Standby	22	27.5	40.7	49.5	55	66	55	66	
No. of Phases		3-Phase, 4-Wire								
Rated Voltage*1		(5) Multi Voltage						(2) Dual Voltage		
Power Factor		0.8 (Lagging)								
Voltage Regulation	%	Within ±0.5								
Excitation		Brushless, Rotating Exciter (With A.V.R.)								
Insulation		Class F			Class H					
ENGINE										
Maker & Model		Isuzu BV-4LE2		Kubota V3800-DI-T-K3A		Isuzu BJ-4JJ1X		Isuzu BB-4BG1T		
Type		Inlined, Direct Injected		Inlined, Direct Injected, Turbocharged, Cooled EGR		Common Rail, Inlined, Direct Injected, Turbocharged Aftercooled		Inlined, Direct Injected, Turbocharged		
Output Rating	PS/rpm	26/1500	31.1/1800	51.6/1500	62.0/1800	65.1/1500	77.6/1800	65/1500	77/1800	
	kW/rpm	19.1/1500	22.9/1800	38.0/1500	45.6/1800	47.9/1500	57.1/1800	47.9/1500	57.1/1800	
No. of Cylinders-Bore x Stroke	mm	4-85×96		4-100×120		4-95.4×104.9		4-105×125		
Piston Displacement	L	2.179		3.769		2.999		4.329		
Fuel		ASTM No. 2 Diesel Fuel or Equivalent								
Fuel Consumption*2	L/h	3.6	4.5	6.7	8.5	8.6	10.2	8.6	10.5	
Lube Oil Sump Capacity	L	8.7		13.2		15.0		13.2		
Coolant Capacity	L	6.8		9.4		12.9		16.0		
Battery x Quantity		80D26×1		115D31R×1			120E41R×1			
Fuel Tank Capacity	L	80		170						
Engine Emissions		Stage III (Japanese)						Stage II (Japanese)		
UNIT										
Dimensions	Length	mm	1570		1990		2350		2200	
	Width	mm	790		950		1000		950	
	Height	mm	1100		1490		1490		1450	
Dry Weight	kg	710		1160		1370		1310		
SOUND LEVEL										
7m dB(A) 1500/1800rpm*3		51	53	50	54	51	56	51	55	

*1 Rated Voltage Classification *4

Frequency	(2)		Phase (5)		
	1φ	3φ	3φ	3φ	1φ
50Hz	190 - 220V	380 - 440V	380-440V	190-220V	100/200-115/230V
60Hz	190 - 240V	380 - 480V	380-440V	200-240V	100/200-125/250V

*2 Fuel consumption is based on operation at 75% load.

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

*4 Depending on location and area, output voltage may differ from values listed in catalog.



DCA-25USIE



DCA-45USKE



DCA-60USIE



DCA-60USI

SPECIFICATION TABLE

(80kVA - 150kVA CLASS **ULTRA SOUNDPROOF TYPE**)

		DCA-100USI3		DCA-125USI3		DCA-150USK3	
ALTERNATOR							
Frequency	Hz	50	60	50	60	50	60
Output Rating (kVA)	Continuous	80	100	100	125	125	150
	Standby	88	110	110	138	138	165
No. of Phases		3-Phase, 4-Wire					
Rated Voltage*1		(2) Dual Voltage					
Power Factor		0.8 (Lagging)					
Voltage Regulation	%	Within ±0.5					
Excitation		Brushless, Rotating Exciter (With A.V.R.)					
Insulation		Class F					
ENGINE							
Maker & Model		Isuzu BI-4HK1X				Komatsu SAA6D107E-1-C	
Type		Common Rail, Inlined, Direct Injected, Turbocharged, Aftercooled					
Output Rating	PS/rpm	131.2/1500	156.1/1800	131.2/1500	156.1/1800	153.6/1500	183.6/1800
	kW/rpm	96.5/1500	114.8/1800	96.5/1500	114.8/1800	113/1500	135/1800
No. of Cylinders-Bore x Stroke	mm	4-115×125				6-107×124	
Piston Displacement	L	5.193				6.690	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent					
Fuel Consumption*2	L/h	13.6	17.4	16.7	20.8	24.0	29.6
Lube Oil Sump Capacity	L	23.0		23.0		24.8	
Coolant Capacity	L	27.0		27.0		22.0	
Battery x Quantity		170F51×1				95D31R×2	
Fuel Tank Capacity	L	225			250		
Engine Emissions		Stage III (Japanese)					
UNIT							
Dimensions	Length	mm	2900		3050		3150
	Width	mm	1240		1240		1200
	Height	mm	1500		1600		1600
Dry Weight	kg	2040		2370		2530	
SOUND LEVEL							
7m dB(A) 1500/1800rpm*3		53	57	56	60	55	58

*1 Rated Voltage Classification *4

Frequency	(2)	
50Hz	190 - 220V	380 - 440V
60Hz	190 - 240V	380 - 480V

*2 Fuel consumption is based on operation at 75% load.

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

*4 Depending on location and area, output voltage may differ from values listed in catalog.



DCA-100USI3



DCA-125USI3



DCA-150USK3



SPECIFICATION TABLE

(20kVA - 45kVA CLASS **SOUNDLESS TYPE**)

		DCA-25MZ		DCA-45MZ	
ALTERNATOR					
Frequency	Hz	50	60	50	60
Output Rating (kVA)	Continuous	20	25	37	45
	Standby	21	26.3	40.7	49.5
No. of Phases		3-Phase, 4-Wire			
Rated Voltage*1		(5) Multi Voltage			
Power Factor		0.8 (Lagging)			
Voltage Regulation %		Within ±0.5			
Excitation		Brushless, Rotating Exciter (With A.V.R.)			
Insulation		Class F		Class H	
ENGINE					
Maker & Model		Isuzu BV-4LE2		Kubota V3800-DI-T-K3A	
Type		Inlined, Direct Injected		Direct Injected, Turbocharged, Cooled EGR	
Output Rating	PS/rpm	26/1500	31/1800	53.3/1500	62.7/1800
	kW/rpm	19.1/1500	22.9/1800	39.2/1500	46.1/1800
No. of Cylinders-Bore x Stroke mm		4-85x96		4-100x120	
Piston Displacement L		2.179		3.769	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent			
Fuel Consumption*2 L/h		3.2	4.2	6.6	8.2
Lube Oil Sump Capacity L		8.7		13.2	
Coolant Capacity L		9.5		12.1	
Battery x Quantity		80D26R×1		115D31R×1	
Fuel Tank Capacity L		80		170	
Engine Emissions		Stage III (Japanese)			
UNIT					
Dimensions	Length	mm	1750	2200	
	Width	mm	1000	1200	
	Height	mm	1220	1490	
Dry Weight kg		920		1530	
SOUND LEVEL					
7m dB(A) 1500/1800rpm*3		43	47	44	49

*1 Rated Voltage Classification

Phase	(5)		
	3ø	3ø	1ø
50Hz	380-440V	190-220V	100/200-115/230V
60Hz	380-440V	200-240V	100/200-125/250V

*2 Fuel consumption is based on operation at 75% load.

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

*4 Depending on location and area, output voltage may differ from values listed in catalog.



DCA-25MZ



DCA-45MZ



NOTE 1 OUTPUT RATING

- Continuous output rating applies to operation under standard conditions as per JIS D0006-1*.
- Standby output rating applies to intermittent or emergency operation for approximately 1 hour in every 8 hours of continuous operation as per JIS D0006-1.
- Kilowatts(kW) is calculated by multiplying output kVA by 0.8.

*JIS D0006: Standard air conditions Temperature 25°C Atmospheric pressure 100kPa Relative humidity 30%RH

NOTE 2 RATED VOLTAGE

- Line to neutral voltage is calculated by dividing line to line voltage by $\sqrt{3}$.
- Besides the voltages shown on the specification table, other voltages are available upon request.

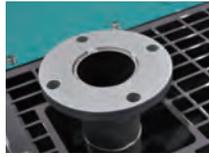
NOTE 3

Colours of products would be different from printed ones of catalogues.

Options

Exhaust gas on upside flange

Connects generator muffler and external piping



Exhaust gas on side flange

Available to change exhaust gas direction laterally for installation location



Exhaust tailpipe

Prevents rainwater to muffler part with extended forward muffler



Ventilation air hood

Available to change ventilation air direction and prevent rainwater to ventilation part



Ventilate air forward

Available to change ventilation air direction and connect external ducts for installation location



Automatic Start and Stop Device

Available to start and stop a generator remotely by external signals. Mainly used with the combination of ATS (Automatic transfer switch).

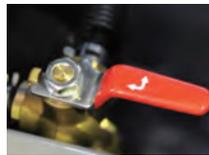


*Terminal board for remote control

Three-way valve

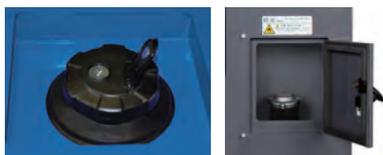
(For DCA-13 to 400, provided as standard feature for DCA-500-1100 and ECO-BASE series.)

Available to switch to external fuel tank



Keyed fuel tank cap

(For DCA-13 to 1100, provided as standard feature for DCA-45USKE,60USIE,45MZ)



Trailer

Trailers can be fitted to generators to facilitate on-site movement. Bolt connectors make mounting and dismounting simple.

*Trailer is not designed for driving on the road. Maximum speed 25km/h.



Two-wheel type
(For DCA-60 and below)



Four-wheel type
(For DCA-75SP through 400)

Salt Corrosion Resistant Specifications

(For DCA-13 to 220, provided as standard feature for DCA-300 and above.)

These specifications are designed for when the unit will be used on the coast or on the ocean, and include treatment to prevent insulation resistance from dropping, and corrosion resistant treatment of the parts.

Automatic Oil Lubrication Device

(For DCA-35 to 1100, provided as standard feature for 610SPM and 1100SPM2)

This system automatically maintains engine oil at the proper level, making it possible to reduce costs for oil-related maintenance, and eliminates the need to check the engine oil level.



Automatic Fuel Replenishment Device

(For DCA-25ESI, 45 to 60)

When the level in the unit tank drops after an extended period of operation, a level sensor detects this and an electric pump is operated to automatically replenish fuel in the unit tank from a separate tank. (Cannot be used with three-way valve.)

Bearing/stator temperature gauge

(For DCA-125 and above, provided as standard feature for DCA-800SPK, DCA-1100SP)

Lubricant temperature gauge

(Provided as standard feature for DCA-220 and above)

Overspeed protection device

(Provided as standard feature for DCA-600SPK, DCA-610SPM, DCA-800SPK, DCA-1100SP)

Parallel Operation Device

A variety of optional devices are available to change from manual parallel operation to the desired type of automatic operation. Select the desired option from the table below according to the power supply application, site conditions and other factors.

Method \ Operation	Engine Starting / Stopping	Synchronization Verification/ Activation	Load Sharing	Remarks
Manual Parallel Operation Device	Manual	Manual	Manual	Standard feature for DCA-125 to 800
Automatic Load Sharing Device	Manual	Manual	Automatic	For DCA-150 to 800
Automatic Parallel Operation Device	Manual	Auto operation with pushbutton	Automatic	For DCA-220 and above. Standard feature for DCA-1100SP
Fully Automatic Parallel Operation Device (with EASY GEN)	Semi-automatic Automatic	Automatic	Automatic	For DCA-400ESK, 500ESK and 600SP-1100SP



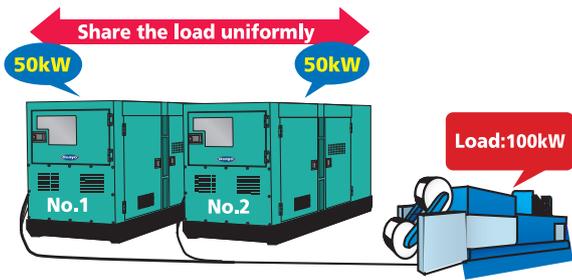
Manual Parallel Operation Device

Parallel operation system with unique Denyo AVR equipped with a cross-current compensation circuit (CCR system). This is the most inexpensive system and standard feature for DCA-125 to 800.

For more secure operation in manual parallel mode, we recommend "Reverse power relay " & "AC power meter" as options.

Automatic Load Sharing Device

This device operates a governor motor to share the load uniformly among the respective generators when parallel operation is being performed. It facilitates stable parallel operation, and dramatically reduces the workload of monitoring during parallel operation.



Automatic Parallel Operation Device

The troublesome synchronization verification and synchronization activation process can be automatically performed by simply pressing a pushbutton. After synchronization is activated, the Automatic Load Sharing Device is capable of performing stable parallel operation.

Fully Automatic Parallel Operation Device "EASY GEN"

High-speed digital control enables all operations from starting and stopping to synchronization verification, synchronization activation and load sharing to be performed at the touch of one button. This device has multiple functions that enable parallel operation of generators with differing capacities, the number of units being operated to be controlled and other operations.



EASY GEN 3500



Reverse power relay

(For DCA-125 and above. Provided as standard feature for DCA-800, DCA-1100SP, Automatic Load Sharing Device, Automatic parallel operation Device and Fully Automatic parallel operation Device.)

In parallel operation, a reverse power relay will monitor the direction of power for each generator, and when a reverse power set up is exceeded, the breaker is tripped for protection of relevant engine generator. (Recommended for manual parallel operation.)

AC power meter

(For DCA-125 and above. Provided as standard feature for DCA-800, DCA-1100SP, Automatic Load Sharing Device, Automatic parallel operation Device and Fully Automatic parallel operation Device.)

This is an indispensable instrument for monitoring the load sharing and conducting the load transferring in parallel operation. (Recommended for manual parallel operation.)

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-13		DCA-15		DCA-25		DCA-35		DCA-45		DCA-60	
Frequency	Hz	50	60	50	60	50	60	50	60	50	60	50	60
EG capacity	kVA	10.5	13	12.5	15	20	25	30	35	37	45	50	60
Motor capacity (kW)	Direct startup	3.4	4.1	4	5	6.3	7.6	9.4	11.6	12.3	14.9	16	20.5
	Y- Δ startup(1)	5.2	6.4	6	7.5	9.5	11.4	14.3	17.5	18.5	22.4	24	30.8
	Y- Δ startup(2)	8.3	10.2	9.6	11.9	15.7	19.5	23.1	27.7	28.2	34.3	38.4	46

Item \ Model		DCA-75		DCA-100		DCA-125		DCA-150		DCA-220		DCA-300	
Frequency	Hz	50	60	50	60	50	60	50	60	50	60	50	60
EG capacity	kVA	65	75	80	100	100	125	125	150	200	220	270	300
Motor capacity (kW)	Direct startup	21.5	25	27.2	34.5	34.5	42.5	42.5	51	68	76	91	102
	Y- Δ startup(1)	32.3	37.5	40.8	51.8	51.8	63.8	63.8	76.5	102	114	136	153
	Y- Δ startup(2)	48.8	58	62	68	68	97	97	115	154	172	208	231

Item \ Model		DCA-400		DCA-500		DCA-600/610		DCA-800		DCA-1100	
Frequency	Hz	50	60	50	60	50	60	50	60	50	60
EG capacity	kVA	350	400	450	500	550/554	600/610	700	800	1000	1100
Motor capacity (kW)	Direct startup	119	136	155	175	185	205	210	243	306	337
	Y- Δ startup(1)	179	204	233	263	278	308	315	365	459	505
	Y- Δ startup(2)	270	308	351	390	432	460	508	575	734	808

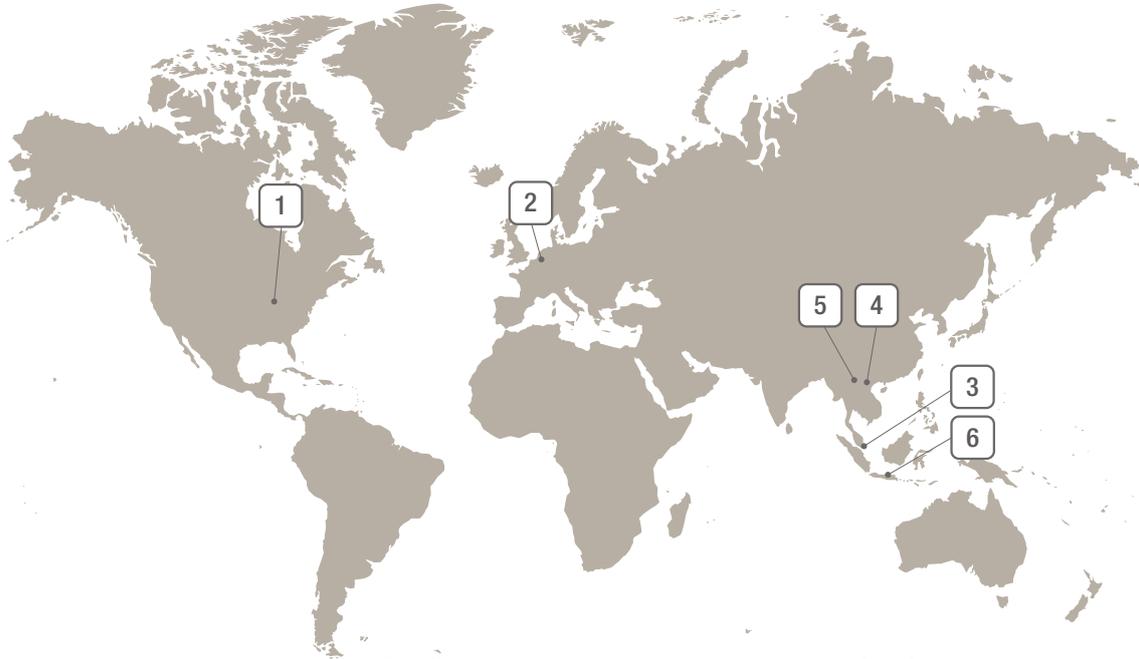
Motor usage examples in the above table are benchmark values : generator capacity will differ according to the required momentary voltage drop, motor load factor, and size of startup capacity, as well as motor age and efficiency

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).

Our Global Network

Denyo's products are valued by customers around the world and employed in diverse settings. In addition to its locations in Japan, Denyo operates a highly responsive global manufacturing and sales system with three overseas production sites (in Indonesia, the United States, and Vietnam) and four sales and after-sales service sites (in the United States, Singapore, Vietnam and the Netherlands).



1



Denyo America Corporation
1450 Minor Road, Danville, Kentucky,
40422 U.S.A.

Denyo Manufacturing Corporation
1450 Minor Road, Danville, Kentucky,
40422 U.S.A.

2



Denyo Europe B.V.
Naamrijk 1, 3454PX De Meern,
The Netherlands

3



Denyo Asia Pte. Ltd.
NO.9 NEYTHAL ROAD SINGAPORE 628614

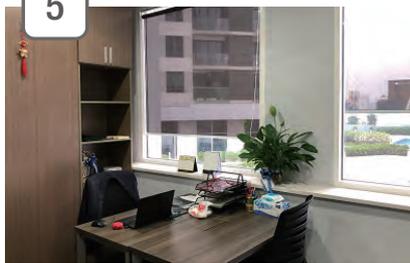
Denyo United Machinery Pte. Ltd.
NO.9 NEYTHAL ROAD SINGAPORE 628614

4



Denyo Vietnam Co., Ltd.
Plot A3, Thang Long Industrial Park II, Yen
My District, Hung Yen Province, Vietnam

5



Denyo Trading Vietnam Co., Ltd.
Room 606.03, 6th Floor, Indochina Plaza
Hanoi Tower, No. 241 Xuan Thuy Street,
Dich Vong Hau Ward, Cau Giay District,
Hanoi City, Vietnam

6



P.T. Dein Prima Generator
JL. Raya Bekasi Km. 28, Medan Satria,
Bekasi 17132 Jawa Barat, Indonesia



ISO 9001:2015
ISO 14001:2015
Certified

Denyo® The Denyo trademark is widely recognized as a brand, and is a registered trademark in 93 countries and 8 regions.

The specifications given herein are subject to change without notice.



 **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/