Denyo

SOUNDPROOF DIESEL GENERATING SETS

DCA Series

Powerful & Quiet

Denyo

Denyo Co., Ltd.

Three reasons why DENYO POWER GENERATORS set the standards in performance, quality and user-friendliness.

REASON 1

Denyo is a specialized generator manufacturer that relies on its own patented technology and design. The result of this effort is the DCA Series soundproof generator range,which have features and flexibility built into each generator that other makers/assemblers cannot match. At this very moment, Denyo is continuing to develop new technology for tomorrow's power needs.

REASON 2

All Denyo generators are designed and manufactured in order to provide full power performance and are rated on the alternator's actual capabilities. In addition, Denyo utilises engines that can sustain our alternator's 100% load rating.

Oter brands of generators publish and market their generator's output ratings based upon their alternator's maximum output, which totally disregards alternator and engine efficiency loss. Therefore, on paper,these generators may appear powerful in relation to price.

In contrast,Denyo's manufacturing concept means our generators will outperform other brands in terms of effective performance and life-time operating costs. Users around the world can rely on the fact that Denyo generators will perform according to what is written on the generator's name-plate.

REASON 3

The Total Quality Control System employed in each of Denyo's three factories ensures each generator is thoroughly tested during the various phases of production. Each completed generator,before delivery, is then subjected to a full range of tests as prescribed by Denyo's "Code of Manufacturing." This comprehensive quality control system, plus the test card issued with each generator , is Denyo's **guarantee to you that each generator will perform as described herein.**

MAKE YOUR NEXT INVESTMENT IN A GENERATOR WORK FOR YOU: CHOOSE DENYO

GENERAL CONSTRUCTION

The DCA Series generators are complete, standalone generating sets. All models consist of a Denyo alternator which is directly coupled to a diesel engine. The alternator and engine are set on a common skid base. Special vibration isolators are used to minimise vibrations during operation. The generator and electrical components are fully enclosed in a solid-steel, weatherproof canopy. Noise suppression is achieved using highly effective sound insulating materials.

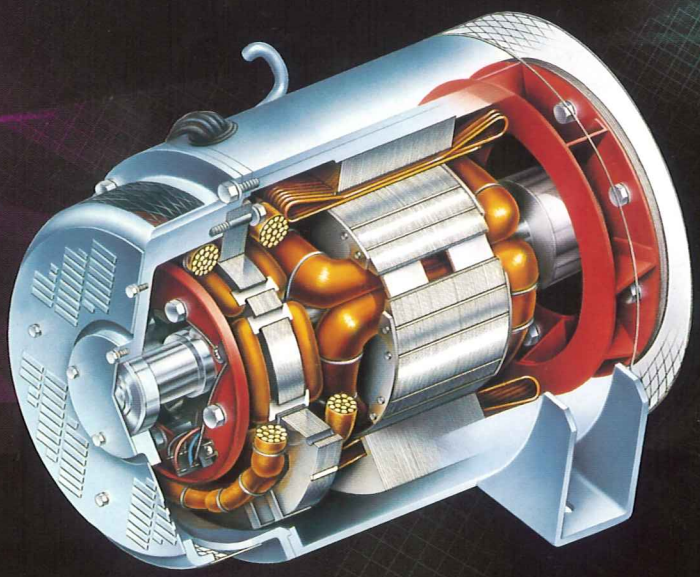
DENYO'S ADVANCED BRUSHLESS GENERATOR

DESIGN: The patented brushless generator is a rotatingfield, self-ventilated, single-bearing, 4-pole synchronous alternator, complete with damper (amortisseur) windings for minimal voltage deviations and to minimize the generator's effect on magnetic/radio waves. This unique design ensures minimum waveform dist ortion, minimum reactance and maximum efficiency, which produces high-quality electricity.

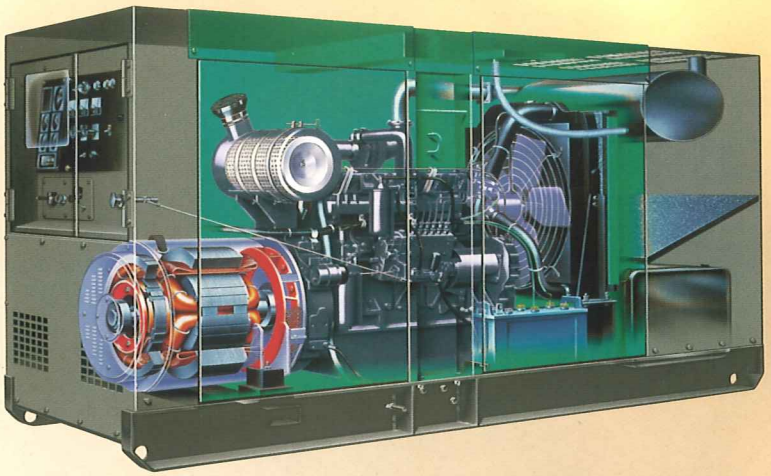
EXCITER: Brushless rotating exciter, 3-phase full wave rectified with silicon diodes, designed for maximum motor starting.

ROTOR: With fitted parts and windings; dynamically balanced and permanently aligned to the engine by flexible disc coupling.

COOLING: Direct-drive centrifugal ventilating fan, for ample air flow and noise suppression.



Powerful & Quiet



PERFORMANCE FEATURES

HIGH-PERFORMANCE

The Denyo generating system guarantees the following levels of performance:

TEMPERATURE RISE : 100℃ temperature rise at 40℃ ambient (JEC2130).

INSULATION : ClassF (JEC2130).

VOLTAGE REGULATION : Within±0.5%
(except DCA-400SP, 400ES)

FREQUENCY REGULATION: Within 5.0% through noload to full-load.

VOLTAGE WAVEFORM : Deviation Factor of open-circuit terminal voltage does not exceed 0.06.
Telephone Influence Factor (TIF) is less than 50.

ELECTROMAGNETIC INTERFERENCE LEVEL : Attenuated to meet most commercial requirements.

INSULATION RESISTANCE: Higher than 3Mega-ohms,measured between armature windings and earth, field windings and earth,field control circuit and earth.

●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 startup. This system provides output stability during load variations.
*U.S.Patent No.4268788

●Synchronous brushless alternator for minimal wear.

●Designed to function in all climatic conditions.

●Will safely power the most sensitive loads, such as thyristors, invertors and computer systems, without the risk of damage to these loads, thanks to the high level electrical characteristics of the generator's output.

ECONOMICAL PERFORMANCE

●Easy starting and quick response.

●Utilising highly reliable diesel engines with low fuel consumption, manufactured by Japan's leading engine manufacturers.

●Uninterrupted generator operation for up to 12 hours under 75% load.

UNSURPASSED FLEXIBILITY

To meel today's varying needs successfully, your equipment must be as flexible as you are. The Denyo DCA Series generator range provides you with the flexibility to get the job done simply and economically, without any delays.

TRUE HEAVY-DUTY PERFORMANCE

For a particular job, you may need that extra power from your generator. With the DCA Series, the standby power rating (110% or 105% load except DCA-610SPM) can be used continuously for 1 hour in every 8 hours of continuous operation.This extra power performance of Denyo generators means you can get the job done, without the inconvenience of using another generator.

PARALLEL OPERATION FEATURE

(except for DCA-100 below)
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

(optional for DCA-25USI,45ESH,45USI,60ESH,60USH)
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.

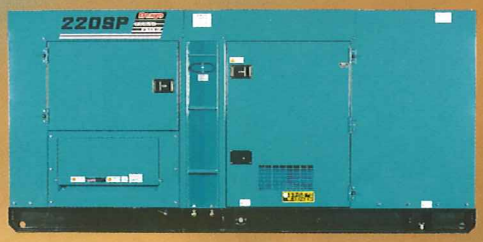
ALL MODELS CAN RUN AT 50Hz/60 Hz

Simply adjust the engine speed on the control panel to use a DCA Series generator at either 50 Hz or 60 Hz.

EXTREMELY QUIET OPERATION

In urban areas and at the worksite, there is an ever increasing demand for reduced noise pollution. In response to these concerns, Denyo has pioneered a soundproof and super soundproof range of generators. The DCA Series generators are extremely quiet when operating at full load, even though all soundproof models are compactly designed. Check the specifications for the sound level of each model.

DENYO GENERATORS: DESIGNED TO BE TOTALLY USER-FRIENDLY



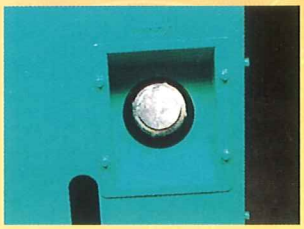
MAINTENANCE MADE SIMPLER

●All daily maintenance requirements can be performed from one side of the machine. The large doors gives you full acces to the engine.

●External drain plugs for oil, fuel and water are fitted for convenience in performing routine maintenance.

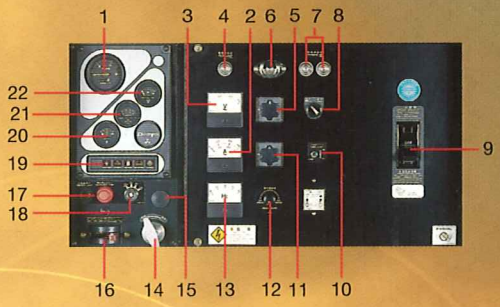
● Large fuel gauge is fitted for simple viewing.

●For major engine overhauls, the canopy (bonnet) can be simply unbolted, which allows full access to the engine.



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

①Tachometer ②AC Ammeter ③ AC Voltmeter ④ Pilot Lamp ⑤ Voltmeter Change-Over Switch ⑥ Panel Light ⑦ Synchroniziang Lamp ⑧ Single Parallel Change-Over Switch ⑨ Circuit Breaker ⑩ Panel Light Switch ⑪ Ammeter Change-Over Switch ⑫ Voltage Regulator ⑬ Frequency Meter ⑭ Throttle Handle ⑮ Preheat Lamp ⑯ Battery Switch ⑰ Emergency Stop Button ⑱ Starter Switcr ⑲ Warning Lamp Unit ⑳ Charging Ammeter ㉑ Oil Pressure Gauge ㉒ Water temperature Gauge



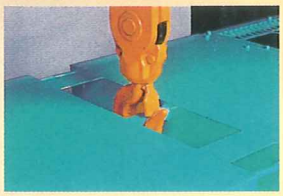
TRANSPORTABILITY

●The new designs of the DCA Series range have achieved significant size and weight reductions over previously producted models, through improvements in coupling techniques and alternator design.

●The sturdy weatherproof steel canopy 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.



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 Stop	Load Interrupt	Malfunction Display	
Low oil pressure	○	—	○	
High water temperature	○	—	○	
Over-current	—	○	—	
Electric leakage	—	○	○	
Insufficient charging	○	—	○	＊1
Low fuel level	—	—	○	
Plugging of air cleaner	—	—	○	＊2
Rise in fuel filter level	—	—	○	＊3
Over-speed	○	—	—	＊4

O:Operates –:Does not operate

＊1 Only for 13 to 35. (Engine stopped/malfunction display not provided for 25ESI, 45–150ESH, US series.)

＊2 Excluding 13–20ES, 25ESK.

＊3 Only for 25ESI, 25USI2, 45USI2.

＊4 Only for 600SPK, 800SPK, 800SPM, 1100SPM.

SPECIFICATION TABLE (SOUNDPROOF TYPE)

MODEL		DCA-13ESK		DCA-13ESY		DCA-15ESK		DCA-20ESK		DCA-25ESK		DCA-25ESI		DCA-35SPK		DCA-45SPI		DCA-45ESH		DCA-60ESH	
ALTERNATOR																					
Frequency	Hz	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60
Output Rating(kVA)	Continuous	10.5	13	10.5	13	12.5	15	17	20	20	25	20	25	30	35	37	45	37	45	50	60
	Standby	11	13.7	11.5	14	13.8	16.5	18.7	22	22	27.5	22	27.5	31.5	36.75	38.9	47.3	38.9	47.3	55	66
No.of Phases		3-Phase,4-Wire																			
Rated Voltage*1	V	①Single Voltage										②Dual Voltage		③Single Voltage		②Dual Voltage		④Single Voltage (Dual Voltage is an option)			
Power Factor		0.8 (Lagging)																			
Voltage Regulation	%	Within ±0.5																			
Excitation		Brushless,Rotating Exciter (With A.V.R.)																			
Insulation		Class F																			
ENGINE																					
Make&Model		Kubota D1403-KA		Yanmar 3TNV84-G		Kubota D1703-KB		Kubota V2203-KB		Kubota V2203-KB		Isuzu AA-4LE2		Kubota V3300-EB		Isuzu B-4BG1		Hino W04D-K		Hino W04D-TG	
Type		Inlined, Swirl Chambered		Inlined, Direct Injected		Inlined,Swirl Chambered						Inlined, Direct Injected		Inlined, Swirl Chambered		Inlined,Direct Injected					
Output Rating	PS/rpm	13.7/1500	16.9/1800	15.3/1500	18.3/1800	13.8/1500	16.5/1800	21.5/1500	25.6/1800	25/1500	32.2/1800	26/1500	32/1800	38.5/1500	44.1/1800	46.5/1500	56/1800	46.5/1500	57/1800	66/1500	78/1800
	kW/min^{-1}	10.1/1500	12.4/1800	11.3/1500	13.5/1800	12.4/1500	14.7/1800	15.8/1500	18.8/1800	18.4/1500	23.71800	19.1/1500	23.5/1800	28.3/1500	32.4/1800	34.2/1500	41.2/1800	34.2/1500	41.9/1800	48.5/1500	57.4/1800
No.of Cylinders-Bore×Stroke	mm	3-80×92.4		3-84×90		3-87×92.4		4-87×92.4		4-87×92.4		4-85×96		4-98×110		4-105×125		4-104×118		4-104×118	
Piston Displacement	L	1.393		1.496		1.647		2.197		2.197		2.179		3.318		4.329		4.009		4.009	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent																			
Fuel Consumption	L/h	2.4	2.9	2.1	2.6	2.8	3.4	3.6	4.3	3.9	4.9	3.3	4.2	5.8	6.9	6.3	7.8	6.5	8.0	8.8	10.6
Lube Oil Sump Capacity	L	5.6		6.7		5.6		6.7		7.6		8.5		13.2		14		16.5		16.5	
Coolant Capacity	L	6.4		3.9		6.4		3.9		7.9		6.6		10.5		13.9		12.2		12.2	
Battery×Quantity		80D26R×1												95D31R×1		65D31R×2		80D26R×2		80D26R×2	
Fuel Tank Capacity	L	62										70		82		100				125	
UNIT																					
Dimensions	Length mm	1390		1390		1390		1540		1540		1540		1900		2000		2000		2050	
	Width mm	650		650		650		650		650		680		860		880		880		880	
	Height mm	900		900		900		900		900		900		990		1250		1250		1250	
Dry Weight	kg	503		490		516		579		591		564		890		1180		1180		1240	
SOUND LEVEL																					
7m dB (A) 1500/1800 rpm (min^{-1})		58	61	61	62	60	63	62	64	62	64	60	64	60	63	63	65	59	61	61	64

*1 Rated Voltage Classification

Frequency	50Hz	60Hz
①	190~220V	200~240V
②	190~220V 380~440V	190~240V 380~480V
③	380~440V	380~480V
④	190~220V (380~440V)	200~240V (380~480V)

( ) indicates options.

DCA-13ESK

DCA-20ESK

DCA-25ESK

DCA-25ESI

DCA-45ESH

MODEL		DCA-60SPI		DCA-75SPI		DCA-100ESI		DCA-125ESM		DCA-125SPK3		DCA-150ESH		DCA-150SPK3		DCA-150ESM		DCA-180SPK3	
ALTERNATOR																			
Frequency	Hz	50	60	50	60	50	60	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	125	150	125	150	150	180
	Standby	55	66	68.3	78.8	88	110	110	138	110	138	138	165	138	165	138	165	165	198
No.of Phases		3-Phase,4-Wire																	
Rated Voltage *1	V	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																			
Make&Model		Isuzu A-6BG1				Isuzu DD-6BG1T		Mitsubishi 6D16-TLE2D		Komatsu SA6D102E-1-A		Hino JO8C-UD		Komatsu S6D108E-2-A		Mitsubishi 6D16-TLE2D		Komatsu SA6D108E-2-A	
Type		Inlined,Direct Injected				Inlined,Direct Injected, Turbocharged		Inlined,Direct Injected, Turbocharged, Aftercooled						Inlined,Direct Injected, Turbocharged		Inlined,Direct Injected, Turbocharged, Aftercooled			
Output Rating	PS/rpm	64/1500	78/1800	80/1500	93/1800	100/1500	124/1800	145/1500	166/1800	133/1500	157/1800	153/1500	183/1800	153/1500	183/1800	153/1500	183/1800	185/1500	220/1800
	kW/min^{-1}	47.1/1500	57.4/1800	58.8/1500	68.4/1800	73.6/1500	91.3/1800	107/1500	122/1800	97.8/1500	115.5/1800	113/1500	135/1800	113/1500	135/1800	113/1500	135/1800	136/1500	162/1800
No.of Cylinders-Bore×Stroke	mm	6-105×125				6-105×125		6-118×115		6-102×120		6-114×130		6-108×130		6-118×115		6-108×130	
Piston Displacement	L	6.494				6.494		7.540		5.880		7.961		7.150		7.540		7.150	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent																	
Fuel Consumption	L/h	9	11.4	10.8	12.5	13.5	17.4	16.5	20.7	15.5	20.1	19.3	23.9	18.9	24.1	19.8	24.0	22.4	28.1
Lube Oil Sump Capacity	L	19.3		19.3		22.4		16		22		24.5		31		16		31	
Coolant Capacity	L	19		22.9		22.0		26.3		23.9		22.9		29.4		26		30.4	
Battery×Quantity		65D31R×2		95E41R×2		95D31R×2		95E41R×2										115F51×2	
Fuel Tank Capacity	L	125		155		225		250										300	
UNIT																			
Dimensions	Length mm	2420		2630		2750		3280		3000		3200		3350		3350		3300	
	Width mm	880		1000		1050		1080		1080		1180		1200		1080		1200	
	Height mm	1250		1300		1350		1500		1500		1500		1500		1500		1500	
Dry Weight	kg	1410		1590		1730		2290		2120		2360		2740		2450		2900	
SOUND LEVEL																			
7m dB (A) 1500/1800 rpm (min^{-1})		63	65	61	63	59	61	61	66	63	66	61	64	65	69	62	67	63	67

*1 Rated Voltage Classification

Frequency	50Hz	60Hz
②	190～220V 380～440V	190～240V 380～480V

DCA-60ESH

DCA-100ESI

DCA-125SPK3

DCA-150SPK3

DCA-180SPK3

SPECIFICATION TABLE

MODEL		DCA-220ESM		DCA-220SPK3		DCA-300SPK3		DCA-400ESM		DCA-400SPKⅡ		DCA-400ESV		DCA-500SPK		DCA-500ESM		DCA-600SPK		DCA-610SPM	
ALTERNATOR																					
Frequency	Hz	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60
Output Rating(kVA)	Continuous	200	220	200	220	270	300	350	400	350	400	350	400	450	500	450	500	550	600	554	610
	Standby	220	242	220	242	297	330	385	440	385	440	385	440	495	550	495	550	605	660	554	610
No.of Phases		3-Phase,4-Wire																			
Rated Voltage*1	V	② Dual Voltage																			
Power Factor		0.8 (Lagging)																			
Voltage Regulation	%	Within ±0.5						Within ±1.0						Within ±0.5							
Excitation		Brushless,Rotating Exciter (With A.V.R.)																			
Insulation		Class F																			
ENGINE																					
Make&Model		Mitsubishi 6D24-TLE2B		Komatsu S6D125E-2-A		Komatsu SA6D125E-2-A		Mitsubishi S6B3-E2PTAA-3		Komatsu SA6D140-A		VOLVO TAD 1241GE		Komatsu SA6D170-B		Mitsubishi S6A3-E2PTAA-1		Komatsu SA6D170A		Mitsubishi S6R-PTA	
Type		Inlined,Direct Injected, Turbocharged,Aftercooled		Inlined,Direct Injected, Turbocharged		Inlined,Direct Injected,Turbocharged,Aftercooled															
Output Rating	PS/rpm	246/1500	270/1800	242/1500	277/1800	316/1500	350/1800	420/1500	470/1800	421/1500	485/1800	438/1500	467/1800	520/1500	580/1800	519/1500	581/1800	639/1500	698/1800	762/1500	768/1800
	kW/min^{-1}	181/1500	199/1800	178/1500	204/1800	232/1500	257/1800	309/1500	346/1800	310/1500	357/1800	323/1500	344/1800	382/1500	427/1800	382/1500	427/1800	470/1500	513/1800	517/1500	565/1800
No.of Cylinders-Bore×Stroke	mm	6-130×150		6-125×150				6-135×170		6-140×165		6-131×150		6-170×170		6-150×175		6-170×170		6-170×180	
Piston Displacement	L	11.940		11.040				14.600		15.240		12.130		23.150		18.560		23.150		24.500	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent																			
Fuel Consumption	L/h	33.7	38.1	31.5	35.7	43.6	50.0	54.8	67.4	52.1	60.8	49.0	58.3	69.5	83.1	67.6	78.3	81.8	93.7	82.0	96.4
Lube Oil Sump Capacity	L	37		42		62		85		74		35		119		100		119		92	
Coolant Capacity	L	42		36		37		69.4		64		44		92.5		114.5		112		118	
Battery×Quantity		145G51×2						190H52×2				145G51×2		190H52×2							
Fuel Tank Capacity	L	380				490															
UNIT																					
Dimensions	Length mm	3700		3650		3750		4500		4200		4200		5480 (5000)*2		5280 (4800)*2		5580 (5100)*2		5280 (4800)*2	
	Width mm	1300		1300		1400		1400		1400		1400		1650		1650		1650		1650	
	Height mm	1750		1750		1800		2100		2100		2100		2400		2400		2400		2400	
Dry Weight	kg	3630		3670		4160		5610		5420		5050		8540		7920		8860		8700	
SOUND LEVEL																					
7m dB (A) 1500/1800 rpm (min^{-1})		61	63	63	65	68	71	65	69	67	68	66	70	68	71	65	69	67	71	69	72

*1 Rated Voltage Classification

Frequency	50Hz	60Hz
②	190～220V 380～440V	190～240V 380～480V

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

DCA-220ESM

DCA-400ESV

DCA-400SPKⅡ

DCA-500SPK

DCA-800SPM

SUPER SOUNDPROOF Type

MODEL		DCA-800SPK		DCA-800SPM		DCA-1100SPM	
ALTERNATOR							
Frequency	Hz	50	60	50	60	50	60
Output Rating(kVA)	Continuous	700	800	700	800	1000	1100
	Standby	770	880	770	880	1100	1210
No.of Phases		3-Phase,4-Wire					
Rated Voltage*1	V	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				Class H	
ENGINE							
Make&Model		Komatsu SA12V140		Mitsubishi S12A2-PTA		Mitsubish S12H-PTA	
Type		V12 Direct Injected Turbocharged,Aftercooled					
Output Rating	PS/rpm	834/1500	1000/1800	830/1500	920/1800	1209.2/1500	1292.5/1800
	kW/min-1	613/1500	736/1800	610/1500	677/1800	890/1500	950/1800
No.of Cylinders-Bore×Stroke	mm	12-140×165		12-150×160		12-150×175	
Piston Displacement	L	30.480		33.93		37.110	
Fuel		ASTM No. 2 Diesel Fuel or Equivalent					
Fuel Consumption	L/h	102	120	103	125	154	180
Lube Oil Sump Capacity	L	151		120		200	
Coolant Capacity	L	170		205		244	
Battery×Quantity		190H52×4					
Fuel Tank Capacity	L	490				800	
UNIT							
Dimensions	Length mm	6110 (5500)*2		6210 (5600)*2		6110 (6000)*2	
	Width mm	1950		1950		2350	
	Height mm	2500		2500		2950	
Dry Weight	kg	11200		11350		14500	
SOUND LEVEL							
7m dB (A) 1500/1800 rpm (min-1)		70	72	67	69	72	74

DCA-25USI2		DCA-45USI2		DCA-60USH		DCA-100USI		DCA-125USH		DCA-150USK	
50	60	50	60	50	60	50	60	50	60	50	60
20	25	37	45	50	60	80	100	100	125	125	150
22	27.5	38.9	47.3	55	66	88	110	110	138	138	165
3-Phase,4-Wire											
④ Single Voltage (Dual Voltage is an option.)						② Dual Voltage					
0.8 (Lagging)											
Within ±0.5											
Brushless,Rotating Exciter (With A.V.R.)											
Class F											
Isuzu AA-4LE2		Isuzu BB-4JG1T		Hino W04D-TG		Isuzu DD-6BG1T		Hino J08C-UP		Komatsu SAA6D102E-2-D	
Inlined, Direct Injected		Inlined,Direct Injected,Turbocharged								Inlined,Direct Injected, Turbocharged,Aftercooled	
26/1500	32/1800	46.5/1500	56/1800	66/1500	78/1800	101/1500	126/1800	133/1500	156/1800	154/1500	184/1800
19.1/1500	23.5/1800	34.2/1500	41.2/1800	48.5/1500	57.4/1800	74.5/1500	92.8/1800	97.8/1500	115/1800	113/1500	135/1800
4-85×96		4-95.4×107		4-104×118		6-105×125		6-114×130		6-102×120	
2.179		3.059		4.009		6.494		7.961		5.880	
ASTM No. 2 Diesel Fuel or Equivalent											
3.2	3.9	6.7	8.4	8.3	10.2	13.4	17.1	16.7	21.9	20.5	25.1
8.5		10		16.5		22.4		25.5		22	
6.4		10		11.5		20		19.6		22.4	
80D26R×1		95D31R×1		80D26R×2		95D31R×2				95E41R×2	
92		170		170		225		250			
1400		1580		2250		2650		2950		3100	
790		950		950		1100		1240		1240	
1350		1550		1300		1500		1600		1600	
773		1100		1440		1940		2400		2600	
52	52	51	53	50	53	55	57	53	56	55	58

* 1 Rated Voltage Classification

Frequency	50Hz	60Hz
②	190~220V 380~440V	190~240V 380~480V
③	380~440V	380~480V
④	190~220V (380~440V)	200~240V (380~480V)

( ) indicates options.

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

DCA-1100SPM

DCA-45USI2

DCA-60USH

DCA-100USI

NOTE 1 OUTPUT RATING

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

*JIS D0006:Standard air conditions Tenperature 25℃ Atmospheric pressure 100kPa Relative humidity 319%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

Fuel consumption is based on operation at 75% load.

NOTE 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.

NOTE 5

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

Host of Options

Remote Control Devices

The engine generator can be remotely changed from low speed to high speed operation, started and stopped, and otherwise controlled. The ability to perform these procedures automatically or manually at the location where work is being performed when the engine generator is separated by a considerable distance provides high fuel and oil savings, extends engine life substantially, and leads to a surprising level of reduction in manpower and energy requirements. In addition, this also minimizes noise and exhaust gas discharge levels, and in turn helps improve the worksite environment.

Automatic Idling Device or Slowdown Device

Automatic Idling Device

(For DCA-45 to 150, provided as standard feature for DCA-220 and above)
(Cannot be used with 45ESI,45USI)

This device automates warm-up operation when the engine is started. The addition of a remote-control box allows remote changeover between low-speed and high-speed operation. (Please note that the engine cannot be started and stopped with the remote-control box.)

Slowdown Device

(For DCA-45 to 150) (Cannot be used with 45ESI,45USI)

In addition to a slowdown function that automatically changes to high-speed operation when a load is applied, and to low-speed operation when there is no load, this device has an automatic idling function that performs warm-up operation when the engine is started (between 5 and 180 seconds depending upon the room temperature where the unit is located). Furthermore, the addition of a remote-control box allows the engine starting/stopping and automatic idling function as well as the slowdown function to be operated from a remote location.

■Remote Controller (For DCA-220 to 1100)

This device allows the engine starting/stopping and automatic idling function (idling when engine is started) to be operated from a remote location. In addition to a switch for changeover between high-speed and low-speed operation, the remote-control box has a high-speed/low-speed operation indicator lamp, a startup warming lamp (comes on when generator set is not started up using normal remote controller operation), and a malfunction indicator lamp (illuminated when the emergency stop device is triggered).

Note: The remote-control box for the DCA-800SPM differs from the picture.

Automatic Oil Lubrication Device

(For DCA-25 to 800, provided as standard feature for DCA-500ESM, 610SPM, 800SPM and1100SPM) (Cannot be used with 25USI,25ESK)

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.)

Salt Corrosion Specifications

(For DCA-13 to DCA-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.

Three-Phase/Single-Phase Output Changeover Device

(For DCA-13ESK, 13ESY, DCA-25ESI, 25USI, 45ESH, 45USI, 60ESH, 60USH)

This device facilitates easy changeover between the three-phase and single-phase output modes with the three-phase/single-phase changeover switch in the control panel. The control panel has an output mode confirmation window and indicator lamp so that the output mode can be confirmed at any time.
(45USI and 60USH only provided with indicator lamp.)

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.

Operation / Method	Engine Starting / Stopping	Synchronization Verification/ Activation	Load Sharing	Remarks
Manual Parallel Operation Device	Manual	Manual	Manual	Standard feature for DCA-125 to 1100
Automatic Load Sharing Device	Manual	Manual	Automatic	For DCA-150 and above
Automatic Parallel Operation Device	Manual	Auto operation with pushbutton	Automatic	For DCA-220 and above. Standard feature for DCA-1100SPM.
Fully Automatic Parallel Operation Device (with GCP generator controller)	Semi-automatic Automatic	Automatic	Automatic	Refer to (4) below for applicable units.

(1) **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, where no addition equipment is required for the DCA-125 and above.

(2) **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.

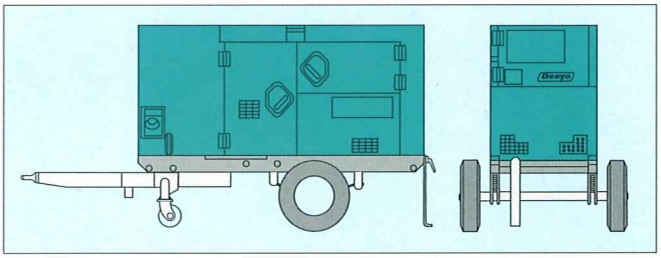
(3) **Automatic Parallel Operation Device:** The troublesome synchronization verification and synchronization activation process can be automatically performed by simply pressing a pushbutton. After synchronization is activated, the Automatic Load Sharing Device is capable of performing stable parallel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

(4) **Fully Automatic Parallel Operation Device:** 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.
Applicable models: DCA-220ESM,400ESM,500ESM,610SPM,800SPK,provided as standard feature for DCA-800SPM.

(5) The generator may be classified as a normal use generator according to the Electricity Enterprises Law depending upon the installation and operation procedure. Consult with a sales person for details.

Trailer

Trailers can be fitted to generators to facilitate on-site movement (trailers for DCA-60 and below are two-wheel; those for DCA-75SP through 400 are four-wheel). Bolt connectors make mounting and dismounting simple.



Other Options

The following options are also available:

- **Reverse power relay** (For DCA-125 and above. Provided as standard feature for DCA-800SPK,800SPM,DCA-1100SPM)
- **AC power meter** (For DCA-125 and above. Provided as standard feature for DCA-800SPK,800SPM,DCA-1100SPM)
- **Dual-voltage specifications** (For DCA-25USI,45ESH,45USI,60ESH,60USH. Provided as standard feature for DCA-25ESI,45SPI,60SPI,75SPI,DCA-100 to 800. Not available for DCA-13ESK,DCA-13ESY,15ESK,20ESK,25ESK,35SPK)
- **Bearing/stator temperature gauge** (For DCA-125 and above. Provided as standard feature for DCA-800SPK,800SPM,DCA-1100SPM)
- **Lubricant temperature gauge**
(Provided as standard feature for DCA-220 and above)
- **Overspeed protection device**
(Provided as standard feature for DCA-800SPK,800SPM,1100SPM)
- **Keyed fuel tank cap**
(For DCA-13 to 1100)
- **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-35		DCA-45		DCA-60		DCA-75		DCA-100		DCA-125	
Frequency (Hz)		50	60	50	60	50	60	50	60	50	60	50	60	50	60
EG capacity (kVA)		20	25	30	35	37	45	50	60	65	75	80	100	100	125
Motor capacity (kW)	Direct startup	6.3	7.6	9.4	11.6	12.3	14.9	16	20.5	21.5	25	27.2	34.5	34.5	42.5
	Y-△ startup(1)	9.5	11.4	14.3	17.5	18.5	22.4	24	30.8	32.3	37.5	40.8	51.8	51.8	63.8
	Y-△ startup(2)	15.7	19.5	23.1	27.7	28.2	34.3	38.4	46	48.8	56.3	65	77	77	97

Item \ Model		DCA-150		DCA-220		DCA-300		DCA-400		DCA-500		DCA-600/610		DCA-800	
Frequency (Hz)		50	60	50	60	50	60	50	60	50	60	50	60	50	60
EG capacity (kVA)		125	150	200	220	270	300	340	400	450	500	550/554	600/610	700	800
Motor capacity (kW)	Direct startup	42.5	51	68	76	91	102	115	136	155	175	185	205	210	243
	Y-△ startup(1)	63.8	76.5	102	114	136	153	173	204	233	263	278	308	315	365
	Y-△ startup(2)	97	115	151	172	208	231	262	308	351	390	432	460	508	575

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.

Note

- 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-△ startup(1)and Y-△ 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 Certified

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
103-0012, Japan
Tel:+81-3-6861-1111 Fax:+81-3-6861-1181
http://www.denyo.co.jp

PRINTED WITH SOY INK
Trademark of American Soybean Association

R100
Percentage of Waste Paper pulp 100%

CAT.No.FG04-09-20061210-05

Printed in japan (T)