

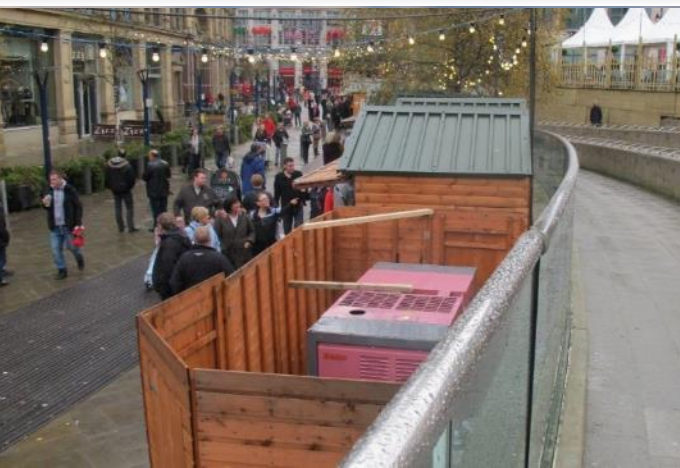
Power Source Technology for the Future

Diesel Engine-Driven Generators and Welders
for the European Market



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.



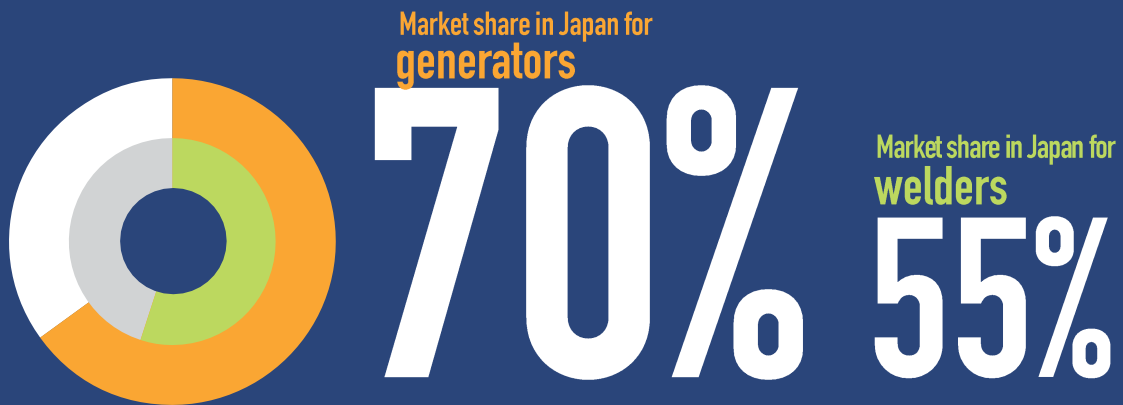
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Denyo's Strengths

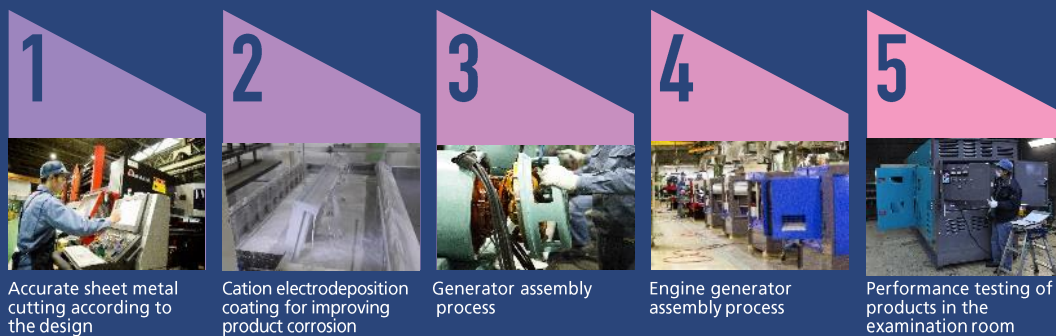
01



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, and 55% of the market for engine-driven welders.

02



Quality products that come from thorough start-to-inish production from design to product inishing

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.

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 earthquakes, corrosion and harmful substances

03

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 temporary power supply at a vaccination site in USA.



04



We develop environmentally friendly products.

In recent years environmental regulations have become increasingly strict, as countries around the world have become concerned about air pollution and the effects on human health caused by the gases emitted from automobiles and construction machinery. Denyo was quick to work on improving environmental performance and has assembled a line of environmentally friendly engine-driven generators, including the DCA-US Series (Ultra Silent Series), in which we achieved a low noise level on a par with a quiet office.

HIGH-PERFORMANCE

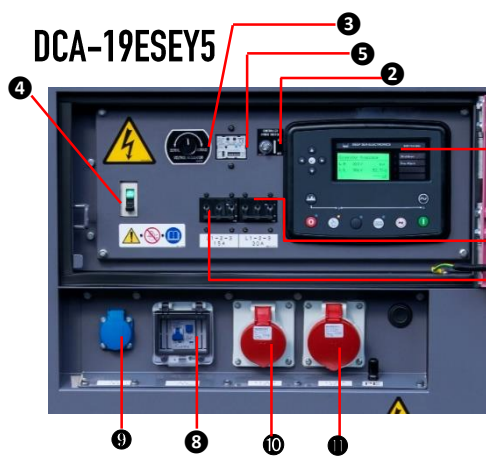
The Denyo generating system guarantees the following levels of performance:

- TEMPERATURE RISE** 100 temperature rise at 40 ambient (JEC2130).
- INSULATION** Class F (JEC2130).
- VOLTAGE REGULATION** Within $\pm 0.5\%$ (except DA-6100SSEK5)
- 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 LEVEL** 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.

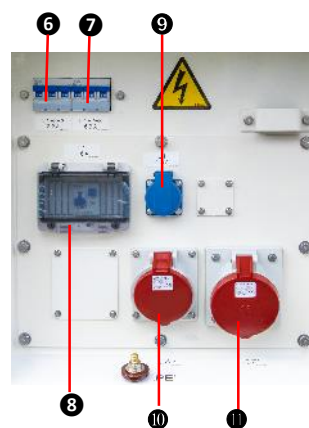
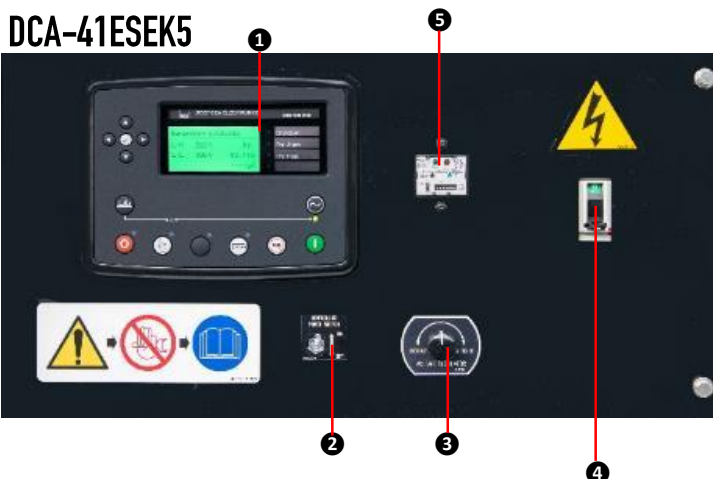
- The innovative excitation system* fitted on all models, in conjunction with the AVR and advanced brushless generator, provides fast voltage regulation in response to load variations, enabling use soon after start up. This system provides output stability during load variations.
*U.S.Patent No.4268788
- Synchronous brushless alternator for minimal wear.
- Designed to function in all climatic

Control Panel with Outstanding Usability

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



- ① MANUAL & AUTO – START GENERATOR CONTROLLER (DSE6110MK II)
- ② CONTROL POWER SWITCH
- ③ VOLTAGE REGULATOR ④ Circuit Breaker (For main)
- ⑤ EARTH LEAKAGE RELAY ⑥ CIRCUIT BREAKER (For 3-Phase Receptacle 30A)
- ⑦ CIRCUIT BREAKER (For 3-Phase Receptacle 15A)
- ⑧ CIRCUIT BREAKER (For 1-Phase Receptacle 16A)
- ⑨ 1-PHASE RECEPTACLE (16A) ⑩ 3-PHASE RECEPTACLE(15A)
- ⑪ 3-PHASE RECEPTACLE (30A)

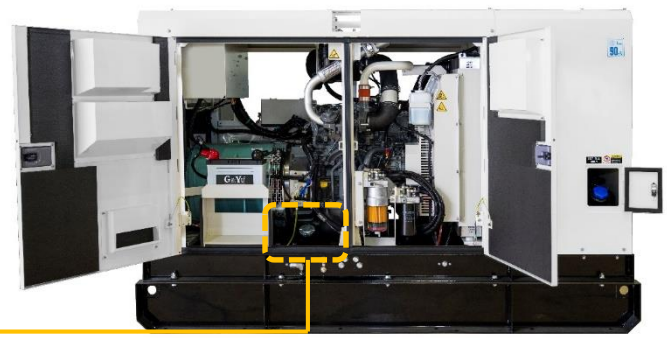


- ① MANUAL & AUTO – START GENERATOR CONTROLLER (DSE 7310MK II)
- ② CONTROL POWER SWITCH
- ③ VOLTAGE REGULATOR
- ④ Circuit Breaker (For main)
- ⑤ EARTH LEAKAGE RELAY
- ⑥ CIRCUIT BREAKER (For 3-Phase Receptacle 32A)
- ⑦ CIRCUIT BREAKER (For 3-Phase Receptacle 63A)
- ⑧ CIRCUIT BREAKER (For 1-Phase Receptacle 16A)
- ⑨ 1-PHASE RECEPTACLE (16A)
- ⑩ 3-PHASE RECEPTACLE(32A)
- ⑪ 3-PHASE RECEPTACLE (63A)

Excellent Maintainability

-Routine maintenance is easy with Denyo's generators. Engine oil, the battery, and coolant are all checked at one location.
 -External drain plugs for oil, fuel and water are fitted for convenience in performing routine maintenance.

The filling structure prevents fuel leakage from generator even if spilled while fueling.



Environmentally Friendly

Compliant with the EU's Emission Regulation 2016/1628 (Stage-V).

Environmental Base

An environmental base catches spilled fuel and oil and stop it from leaking out of the generator (accumulated fuel and oil can be discharged through a drain with a single touch).



Safety

- 4 Pole Main Circuit Breakers
- Controller indicates alarm when something is wrong or automatically shuts the engine down.
- Engine shuts down when door opens.
- Emergency stop button.



Exhaust gas after treatment system

- DOD DPF:**
DCA-41ESEK5, DCA-41USEK5
- DPD SCR:**
DCA-60ESEI5, DCA-60USEI5, DCA-110ESEI5, DCA-110USEI5



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

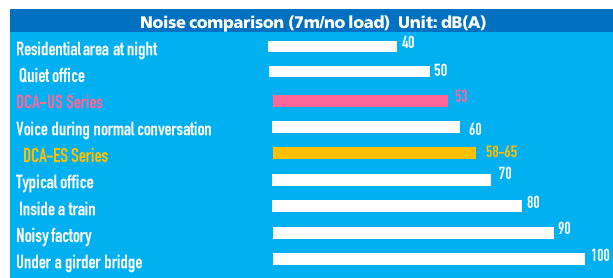


Swivel-type Oil Drain

Quiet Operation

Noise comparison (7m/no load) Unit: dB(A)

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.



Options

- Forklift Pocket Base*1
- Big Tank for 24 hours operation
- Battery Switch
- Customized Color

*About other options, please consult

*1 DCA-60USEI5, DCA-110USEI5 are standard equipment



Engine-Driven Generators

4-Pole Generators | Soundproof Type | Stage V

DCA-19ESEY5



DCA-41ESEK5



MODEL		3-PHASE TYPE (Sound Proof Type)	
		DCA-19ESEY5	DCA-41ESEK5
AC Generator			
Frequency	Hz	50	
Output Rating	Prime	kVA	17.5
	Standby	kVA	19.1
No. of Phases		3-Phase, 4-Wire	
Rated Voltage	V	380 / 400 / 415	
Power Factor		0.8 (Lagging)	
Voltage Regulation	%	Within ± 0.5	
Excitation		Brushless rotating exciter (with AVR)	
Insulation		Class F	
Engine (4-cycle, water-cooled diesel engine)			
Model		Yanmar 4TNV88	Kubota V3800
Type		Swirl chamber Direct injected	Common Rail, Direct injection, cooled EGR, turbocharged
Rated Output	kW	16.8	38.9
Rated Speed	rpm	1500	1500
No. of Cylinders-Bore x Stroke	mm	4-88 x 90	4-100 x 120
Displacement	L	2.189	3.769
Fuel		ASTM No.2 diesel fuel or equivalent	
Fuel Tank Capacity	L	62	110
Fuel Consumption	L/h	3.2	6.9
Lube Oil Capacity	L	7.4	12.0
Coolant Capacity	L	6.0	10.0
Battery x Quantity		12V-65Ah(80D26R) x1	12V-70Ah(115D31R)x 1
Exhaust gas after treatment system		-	DOC DPF
DEF tank capacity (AdBlue tank)	L	-	-
Unit			
Dimensions	Length	mm	1635
	Width	mm	750
	Height	mm	1210
Dry Weight	kg	670	1220
Sound Power Level			
Sound Power Level	LWA dB	87	88

-Prime output rating applies to operation under standard conditions as per ISO8528-1

-Standby output rating applies to intermittent or emergency operation for approximately 1 hour as per ISO8528-1.

-Fuel consumption is based on operation at 75% load.

-Sound level is guaranteed value at 75% rated load by averaging the measurement at four points, each 7 meters from the source.

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

-Specifications given herein are subject to change without notice.

Engine-Driven Generators

4-Pole Generators | Soundproof Type | Stage V

DCA-60ESEI5



DCA-110ESEI5



MODEL		3-PHASE TYPE (Sound Proof Type)	
		DCA-60ESEI5	DCA-110ESEI5
AC Generator			
Frequency	Hz	50	50
Output Rating	Prime kVA	55	100
	Standby kVA	60	110
No. of Phases		3-Phase, 4-Wire	
Rated Voltage	V	380 / 400 / 415	
Power Factor		0.8 (Lagging)	
Voltage Regulation	%	Within ± 0.5	
Excitation		Brushless rotating exciter (with AVR)	
Insulation		Class F	
Engine (4-cycle, water-cooled diesel engine)			
Model		Isuzu 4JJ1	Isuzu 4HK1
Type		Common Rail, Inlined, Direct Injected, Turbocharged Aftercooled	
Rated Output	kW	52.9	92.7
Rated Speed	rpm	1500	1500
No. of Cylinders-Bore × Stroke	mm	4-95.4 × 104.9	4-115 × 125
Displacement	L	2.999	5.193
Fuel		ASTM No.2 diesel fuel or equivalent	
Fuel Tank Capacity	L	150	250
Fuel Consumption	L/h	9.4	16
Lube Oil Capacity	L	15	23
Coolant Capacity	L	21	33
Battery × Quantity		12V-81Ah(115D31R)x1	12V-140Ah(175F51)x1
Exhaust gas after treatment system		DPD SCR	DPD SCR
DEF tank capacity (AdBlue tank)	L	28	28
Unit			
Dimensions	Length	mm	2700
	Width	mm	1060
	Height	mm	1730
Dry Weight	kg	1820	2520
Sound Power Level			
Sound Power Level	LWA dB	93	93

-Prime output rating applies to operation under standard conditions as per ISO8528-1

-Standby output rating applies to intermittent or emergency operation for approximately 1 hour as per ISO8528-1.

- Fuel consumption is based on operation at 75% load.

-Sound level is guaranteed value at 75% rated load by averaging the measurement at four points, each 7 meters from the source.

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

-Depending on location and area, output rating may differ from values listed in catalog.

-Specifications given herein are subject to change without notice.

Engine-Driven Generators

4-Pole Generators | Ultra Soundproof Type | Stage V

DCA-18USEY5



DCA-41USEK5



DCA-110USEI5



MODEL		3-PHASE TYPE (Ultra Sound Proof)				
		DCA-18USEY5	DCA-41USEK5	DCA-60USEI5	DCA-110USEI5	
AC Generator						
Frequency	Hz	50	50	50	50	
Output Rating	Prime	kVA	17	37	55	100
	Standby	kVA	17.5	40.7	58.6	110
No. of Phases		3-Phase, 4-Wire				
Rated Voltage	V	380 / 400 / 415				
Power Factor		0.8 (Lagging)				
Voltage Regulation	%	Within ±0.5				
Excitation		Brushless rotating exciter (with AVR)				
Insulation		Class F				
Engine (4-cycle, water-cooled diesel engine)						
Model		Yanmar 4TNV88	Kubota V3800	Isuzu 4JJ1	Isuzu 4HK1	
Type		Swirl chamber Direct injected	Common Rail, Direct injection, turbocharged cooled EGR	Common Rail, Inlined, Direct Injected, Turbocharged Aftercooled		
Rated Output	kW	17.2	38.9	51.8	92.7	
Rated Speed	rpm	1500	1500	1500	1500	
No. of Cylinders-Bore × Stroke	mm	4-88 × 90	4-100 × 120	4-95.4 × 104.9	4-115 × 125	
Displacement	L	2.189	3.769	2.999	5.193	
Fuel		ASTM No.2 diesel fuel or equivalent				
Fuel Tank Capacity	L	92	170	150	300	
Fuel Consumption	L/h	3.1	7.0	9.4	16	
Lube Oil Capacity	L	7.4	13.25	15	23	
Coolant Capacity	L	6.7	9.4	21	33	
Battery × Quantity		12V-65Ah(80D26R) × 1	12V-81Ah(115D31R) × 1	12V-81Ah(115D31R) × 1	12V-140Ah(175F51) × 1	
Exhaust gas after treatment system		-	DOC DPF	DPD SCR	DPD SCR	
DEF tank capacity (AdBlue tank)	L	-	-	28	28	
Unit						
Dimensions	Length	mm	1635	2150	2800	3300
	Width	mm	860	1060	1260	1500
	Height	mm	1337	1550	1920	2250
Dry Weight	kg	765	1370	2220	3520	
Sound Power Level						
Sound Power Level	LWA dB	82	84	87	88	

-Prime output rating applies to operation under standard conditions as per ISO8528-1

-Standby output rating applies to intermittent or emergency operation for approximately 1 hour as per ISO8528-1.

- Fuel consumption is based on operation at 75% load.

-Sound level is guaranteed value at 75% rated load by averaging the measurement at four points, each 7 meters from the source.

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

-Depending on location and area, output rating may differ from values listed in catalog.

-Specifications given herein are subject to change without notice.

Engine-Driven Generators

2-Pole Generators | Soundproof Type | Stage V

DA-6100SSEK5



MODEL			1-PHASETYPE (2-POLE)
			DA-6100SSEK5
AC Generator			
Frequency		Hz	50
Output Rating	Prime	kVA	5.5
	Standby	kVA	6.1
No. of Phases	Single Phase 2-wire		
Rated Voltage		V	220
Power Factor	1.0		
Voltage Regulation		%	Within ± 6.0
Excitation	Brushless rotating exciter		
Insulation	Class F		
Engine (4-cycle, water-cooled diesel engine)			
Model	Kubota Z482		
Type	Swiri chamber type		
Rated Output		kW	6.5
Rated Speed		rpm	3000
No. of Cylinders-Bore \times Stroke		mm	2-67 \times 68
Displacement		L	0.479
Fuel	ASTM No.2 diesel fuel or equivalent		
Fuel Tank Capacity		L	25
Fuel Consumption		L/h	1.8
Lube Oil Capacity		L	2.5
Coolant Capacity		L	2.75
Battery \times Quantity	12V-45Ah(38B20R) \times 1		
Unit			
Dimensions	Length	mm	1140
	Width	mm	650
	Height	mm	795
Dry Weight		kg	240
Sound Power Level			
Sound Power Level		LWA dB	88

-Prime output rating applies to operation under standard conditions as per ISO8528-1

-Standby output rating applies to intermittent or emergency operation for approximately 1 hour as per ISO8528-1.

-Fuel consumption is based on operation at 75% load.

-Sound level is guaranteed value at 75% rated load by averaging the measurement at four points, each 7 meters from the source.

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

-Depending on location and area, output rating may differ from values listed in catalog.

-Specifications given herein are subject to change without notice.

Engine-Driven Welder

Praised for their stable welding performance with little reduction in voltage as a result of their durability and drooping characteristic, Denyo's engine-driven welders are found in use in countries throughout the world. They can even be used as high-performance engine-driven generators. Equipped with idle-control systems that reduce fuel consumption, Denyo's welders provide excellent economic efficiency.

Exceptional Welding Performance

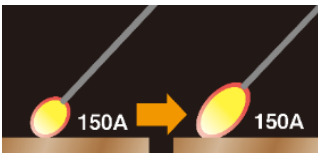
A built-in high-performance generator ensures a stable supply of welding current. This enables outstanding welding performance with an extremely long arc and little arc interruption with the welding electrode.

Welding mode selector switch

Change "Welding mode selector switch" to DROOP/CC to get suitable welding conditions.

DROOP (Drooping characteristic): For stick welding and if you want to change the conditions by the arc length.

CC (Constant Current characteristic): For stick welding and if you want to do stable welding.



CC(Constant current characteristic)
Even when the arc length becomes long and thus the voltage rises, the current remains same.



DROOP(Drooping characteristic)
When the arc length becomes long and thus the voltage rises, the current decreases.

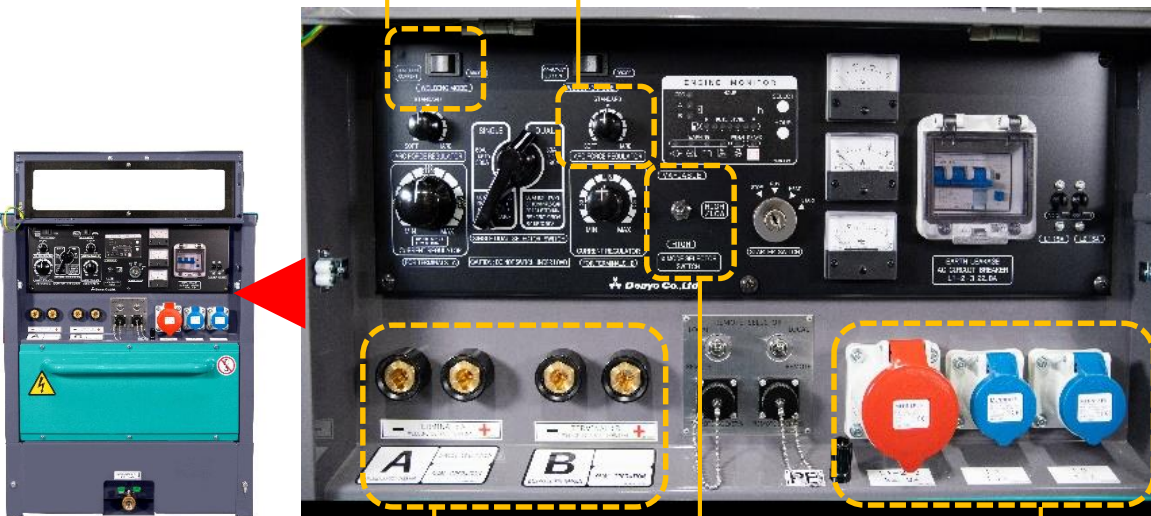
Arc Force Regulator

Adjust "Arc Force Regulator" SOFT, HARD or STANDARD".

SOFT: Pipe welding and welding in all types of positions. Able to get the end result looks more manicured because of the less spatter.

HARD: Overlay welding, Underwater welding, Arc air gouging. Makes arc start easier. (Prevent the electrode from getting stuck on the base material.)

STANDARD: Fillet welding. If you are ever in doubt, choose "STANDARD".



Dual Operator Welding

DLW-400ESEW5 can be used for welding by two operators at the same time. This helps reduce purchasing costs for welding machines and contributes significantly to work efficiency improvements.

e-mode (3 Position)

Automatically adjust the engine rpm based on welding current.

Able to do double-duty at all kinds of work sites. Denyo Engine Welders can provide high quality electricity. It can be used for the power source for the precision machinery such as computer.

Safety

- Equipped with an earth leakage relay
- A warning lamp notifies users when an abnormality has occurred (drop in oil pressure, rise in water temperature, poor battery charge).

Maintainability

DLW-400ESEW5 provides "one-side maintenance" in which daily checks and maintenance can be performed just by opening a single door.



Environmentally Friendly

Equipped with environmentally friendly clean engines, DLW-400ESEW5 complies with the EU's emission regulations (Stage V).

ECO-BASE:

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.



Engine-Driven Welder

Soundproof Type Stage V

DLW-400ESEW5



MODEL	DLW-400ESEW5	
DC Welding		
Rated Output	kW	11.9
Rated Current	A	Single: 350 / Dual: 175
Rated Voltage	V	Single: 34.0 / Dual: 27.0
Current Range	A	Single: 60-380 / Dual: 30-190
Rated Duty Cycle	%	75
Applicable Electrode	mm	Single: 2.0-8.0 / Dual: 2.0-4.0
3-Phase AC Power Output		
Rated Output	kVA	15.0
Rated Voltage	V	380
Rated Current	A	22.8
Frequency	Hz	50
Power Factor		0.8
Rating		Continuous
1-Phase AC Power Output		
Rated Output	kVA	6.6 (3.3 × 2)
Rated Voltage	V	220
Rated Current	A	15 × 2
Frequency	Hz	50
Power Factor		1
Rating		Continuous
Engine (4-cycle, water-cooled diesel engine)		
Model	Kubota D1105	
Type	Vertical, 4-cycle, water-cooled diesel engine, swirl chamber type	
Rated Output	kW	18.0
Rated Speed	min ⁻¹	3000
No. of Cylinders-Bore × Stroke	mm	3-78 × 78.4
Displacement	L	1.123
Fuel	ASTM No.2 diesel fuel or equivalent	
Fuel Tank Capacity	L	42
Fuel Consumption	L/h	4.94
Lube Oil Capacity	L	5.1
Coolant Capacity	L	4.7
Battery × Quantity	12V-45Ah × 1 (55B24L)	
Dimensions, Weight and Sound Power		
Dimensions	Length × Width × Height	mm
		1570 × 720 × 870
Dry Weight	kg	523
Sound Power Level	LWAdB	92

- Rated welding load at rated duty cycle. e-mode data is calculated by rated duty cycle at full-range operation.
- Sound level is guaranteed value at 100% rated load by averaging the measurement at four points, each 7 meters from the source.

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



2 Denyo America Corporation
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4 Denyo Trading Vietnam Co., Ltd.
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5

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

NO.9 NEYTHAL ROAD
SINGAPORE 628614



Vietnam

3&4

5

Singapore

6

Indonesia



6

P.T. Dein Prima Generator

JL. Raya Bekasi Km. 28, Medan Satria,
Bekasi 17132 Jawa Barat, Indonesia

Company Outline



Denyo Head Office



Fukui Plant

Company Name	Denyo Co., Ltd.
Representative	Shoichi Shiratori, President
Established	July 2, 1948
Head Office	2-8-5, Nihonbashi-horidomecho, Chuo-ku, Tokyo 103-8566, Japan
Paid-in Capital	¥1,954 million
Fiscal Year-End	March 31
Plants	Fukui and Shiga Prefectures, Japan
Business Lines	Manufacture and sales of engine-driven generators, welders, air compressors and other special machinery

Domestic Denyo Group Companies

Denyo Kosan Co., Ltd.

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<http://www.denyo.co.jp/english>

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