

# Denyo

## Building the Future

Diesel Engine-Driven Generators and  
Welders for the European Market

Developing  
Technology  
for Tomorrow's  
Power Needs



**Denyo**



Developing  
Technology  
for Tomorrow's  
Power Needs

# 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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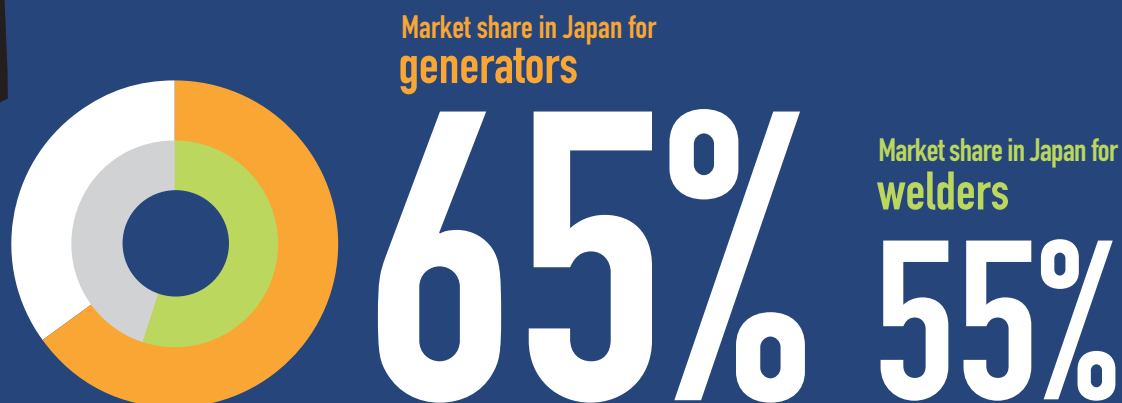
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# Denyo's Strengths

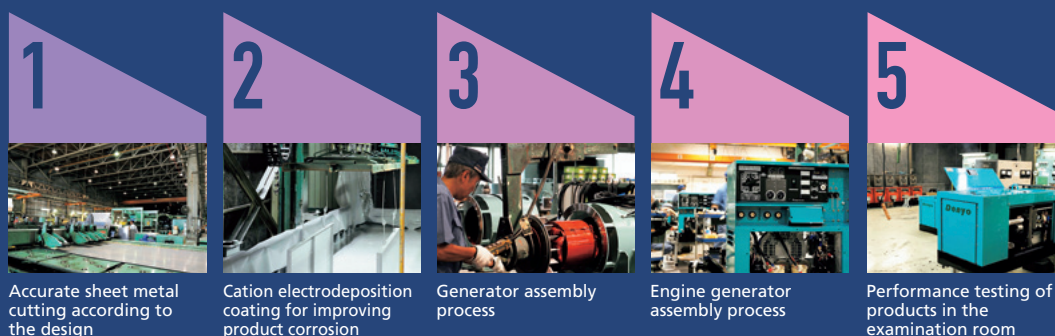
01



## 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 65% 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-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.

**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

# 130

## Countries

### Our products are used in 130 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.



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 DCA-45ESEK, 45USEK, and 125USEI, which have cleared Stage IIIA (the strictest exhaust gas regulation in Europe), and the DCA-US Series (Ultra Silent Series), in which we achieved a low noise level on a par with a quiet office.

# Engine-Driven Generators

4-Pole Generators | Soundproof Type |

## DCA-25ESEK



## DCA-45ESEK



New!

## DCA-125ESEI



2-Pole Generators | Soundproof Type |

## DA-6000SSEK



4-Pole Generators | Ultra Soundproof Type |

## DCA-45USEK



New!

## DCA-125USEI



New!

### 2-POLE TYPE Soundproof

MODEL	DA-6000SSEK	TLG-18ESEK
<b>AC Generator</b>		
Frequency	Hz	50
Output Rating	Standby	5.5
	Continuous	6.1
No. of Poles	2	2
No. of Phases	1	3
Rated Voltage	V	220
Power Factor (Lagging)	1	0.8
Voltage Regulation	%	Within 6.0
Excitation	Brushless rotating exciter	Brushless rotating exciter (with AVR)
Insulation		Class F

Engine (4-cycle, water-cooled diesel engine)

Model	Kubota E2B	Kubota D1005-B
Type	Swirl chamber type	
Rated Output	kW	6.5
Rated Speed	min <sup>-1</sup>	3000
No. of Cylinders	2	3
Bore x Stroke	mm	67 x 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 x Quantity	12V-45Ah x 1	12V-45Ah x 1

Dimensions, Weight and Sound Power Level

Dimensions	Length mm	1140	1400
	Width mm	650	720
	Height mm	795	770
Dry Weight	kg	240	437
Sound Power Level	LWAdB	87	92

### 4-POLE TYPE Soundproof

MODEL		DCA-15ESEK	DCA-25ESEK	DCA-35ESEK	DCA-45ESEK	DCA-70ESEI
AC Generator						
Frequency		Hz	50	50	50	50
Output Rating	Standby	12.5	20	30	37	60
	Continuous	13.8	22	31.5	40.7	66
No. of Poles		4	4	4	4	4
No. of Phases		3	3	3	3	3
Rated Voltage		V	380/400/415	380/400/415	380/400/415	380/400/415
Power Factor (Lagging)		0.8	0.8	0.8	0.8	0.8
Voltage Regulation		%	Within ± 0.5			
Excitation		Brushless rotating exciter (with AVR)				
Insulation		Class F				

Engine (4-cycle, water-cooled diesel engine)

Model	Kubota D1703-E2B	Kubota V2203-E2B	Kubota V3300-E2B	Kubota V3800	Isuzu 4JJ1X
Type	Swirl chamber type			Direct injection, turbocharged, cooled EGR	Direct injection, turbocharged type
Rated Output	kW	12.4	18.4	28.3	38
Rated Speed	min <sup>-1</sup>	1500	1500	1500	1500
No. of Cylinders	3	4	4	4	4
Bore x Stroke	mm	87 x 92.4	87 x 92.4	98 x 110	100 x 120
Displacement	L	1.647	2.197	3.318	3.769
Fuel	ASTM No. 2 diesel fuel or equivalent				
Fuel Tank Capacity	L	62	62	82	100
Fuel Consumption	L/h	2.8	3.9	5.9	6.99
Lube Oil Capacity	L	5.6	7.6	13.2	13.2
Coolant Capacity	L	6.4	7.9	10.5	10.9
Battery x Quantity	12V-65Ah x 1	12V-65Ah x 1	12V-70Ah x 1	12V-70Ah x 1	12V-110Ah x 1

Dimensions, Weight and Sound Power Level

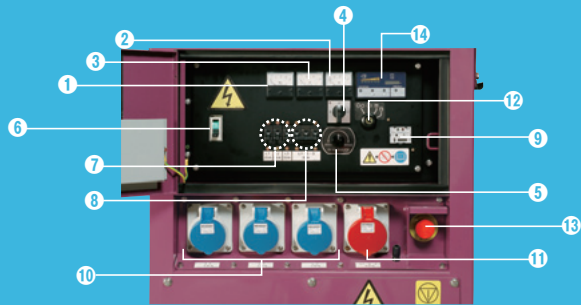
Dimensions		Length mm	1390	1540	1900	1900	2400
		Width mm	650	650	860	880	1000
		Height mm	1050	1050	1130	1400	1550
Dry Weight		kg	565	640	950	1100	1530
Sound Power Level		LWAdB	88	85	89	88	93

●Continuous output rating applies to operation under standard conditions as per JIS B8014. ●Standby output rating applies to intermittent or emergency operation for approximately 1 hour as per JIS B8014. ●Fuel consumption is based on operation at 75% load. ●Sound level reflects 75% rated load and is calculated by averaging the measurements at four points, each 4 meters from the source. ●Colors of products would be different from printed ones of catalogues. ●Specifications given herein are subject to change without notice.



## Control Panel with Outstanding User-Friendliness

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



- 1 FREQUENCY METER 2 AC AMMETER 3 AC VOLTMETER 4 AMMETER CHANGE OVER SWITCH 5 VOLTAGE REGULATOR 6 Circuit Breaker (For main) 7 CIRCUIT BREAKER (For 1-Phase Receptacle) 8 CIRCUIT BREAKER (For 3-Phase Receptacle) 9 EARTH LEAKAGE RELAY 10 1-PHASE RECEPTACLE 11 3-PHASE RECEPTACLE 12 STARTER SWITCH 13 EMERGENCY STOP BUTTON 14 ENGINE MONITOR

## Consideration for the Global Environment

- Compliant with the EU's exhaust gas regulations (Stage II or Stage III).
- Comes with an environmental base to catch 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).
- The fill opening features a structure that prevents fuel from leaking outside the generator even if it is spilled when fueling.



## Excellent Maintainability

Routine maintenance is easy with Denyo's generators. Engine oil, the battery, and coolant are all checked at one location. When conducting repairs or maintenance, the fuel tank comes in and out easily for cleaning by removing the front cover. The radiator can also be cleaned easily.



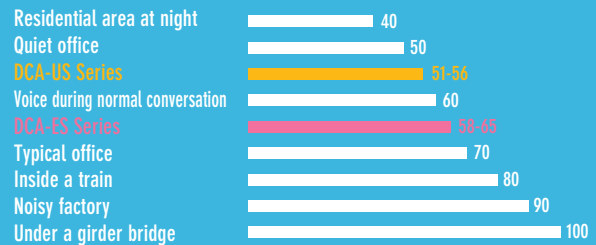
## Consideration for Safety

- Breakers compliant with CE marking.
- Warning lamp indicates on the engine monitor when something is wrong or automatically shuts the engine down.
- Emergency stop button.



## Quiet Operation

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



Denyo's generators run quietly thanks to the Company's original soundproofing technology. The 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.

### 4-POLE TYPE Soundproof

MODEL	DCA-125ESEI	DCA-180ESEI	DCA-220ESEI	DCA-400ESEI
<b>AC Generator</b>				
Frequency	Hz	50	50	50
Output Rating	Standby	100	150	200
	Continuous	110	165	220
kVA		110	165	220
No. of Poles		4	4	4
No. of Phases		3	3	3
Rated Voltage	V	380/400/415	380/400/415	380/400/415
Power Factor (Lagging)		0.8	0.8	0.8
Voltage Regulation	%	Within $\pm 0.5$		
Excitation		Brushless rotating exciter (with AVR)		
Insulation		Class F		

#### Engine (4-cycle, water-cooled diesel engine)

Model	Isuzu 4HK1	Isuzu 6HK1	Isuzu 6UZ1	Isuzu 6WG1
Type	Direct injection, turbocharged type		Direct injection, turbocharged with after cooler	
Rated Output	kW	91.6	133	203
Rated Speed	min <sup>-1</sup>	1500	1500	1500
No. of Cylinders		4	6	6
Bore x Stroke	mm	115 x 125	115 x 125	120 x 145
Displacement	L	5.193	7.79	9.839
Fuel	ASTM No. 2 diesel fuel or equivalent			
Fuel Tank Capacity	L	250	300	460
Fuel Consumption	L/h	17.1	25.9	33.1
Lube Oil Capacity	L	23	40.5	41
Coolant Capacity	L	20.2	27.8	54
Battery x Quantity		12V-150Ah x 1	12V-100Ah x 2	12V-150Ah x 2

#### Dimensions, Weight and Sound Power Level

Dimensions	Length mm	3100	3500	3790	4620
	Width mm	1140	1200	1450	1450
	Height mm	1650	1700	2000	2200
Dry Weight	kg	2210	2760	3870	5460
Sound Power Level	LWAdB	93	95	94	97

### 4-POLE TYPE Ultra Soundproof

MODEL	DCA-25USEI	DCA-45USEK	DCA-125USEI
<b>AC Generator</b>			
Frequency	Hz	50	50
Output Rating	Standby	20	37
	Continuous	22	40.7
kVA		22	40.7
No. of Poles		4	4
No. of Phases		3	3
Rated Voltage	V	380/400/415	380/400/415
Power Factor (Lagging)		0.8	0.8
Voltage Regulation	%	Within $\pm 0.5$	
Excitation		Brushless rotating exciter (with AVR)	
Insulation		Class F	

#### Engine (4-cycle, water-cooled diesel engine)

Model	Isuzu BV-4LE2	Kubota V3800	Isuzu 4HK1
Type	Direct injection type	Direct injection, turbocharged, cooled EGR	Direct injection, turbocharged with after cooler
Rated Output	kW	19.1	38
Rated Speed	min <sup>-1</sup>	1500	1500
No. of Cylinders		4	4
Bore x Stroke	mm	85 x 96	100 x 120
Displacement	L	2.179	3.769
Fuel	ASTM No. 2 diesel fuel or equivalent		
Fuel Tank Capacity	L	92	170
Fuel Consumption	L/h	3.5	6.74
Lube Oil Capacity	L	8.5	13.2
Coolant Capacity	L	6.4	9.4
Battery x Quantity		12V-65Ah x 1	12V-150Ah x 1

#### Dimensions, Weight and Sound Power Level

Dimensions	Length mm	1770	2010	3050
	Width mm	790	950	1240
	Height mm	1170	1470	1800
Dry Weight	kg	785	1200	2460
Sound Power Level	LWAdB	80	80	87

●Continuous output rating applies to operation under standard conditions as per JIS B8014. ●Standby output rating applies to intermittent or emergency operation for approximately 1 hour as per JIS B8014. ●Fuel consumption is based on operation at 75% load. ●Sound level reflects 75% rated load and is calculated by averaging the measurements at four points, each 4 meters from the source. ●Colors of products would be different from printed ones of catalogs. ●Specifications given herein are subject to change without notice.

# Engine-Driven Welders

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.

## DAW-300SSEK



## DLW-300ESEW





## 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.
- The Arc Force Regulator allows users to adjust the short cut current according to the application (excluding the DAW-300SSEK).

"Soft": Enables smooth vertical and pipe welding.  
"Hard": Enables a smooth arc start.



## Economic Efficiency

Fuel consumption can be reduced with e-mode, which controls engine revolutions, making them more efficient.

### DAW-300SSEK

DAW-300SSEK is a non-step automatic control with a microcomputer that assures optimum engine revolutions under any load conditions, with slow-down (low-speed) revolutions.



### DLW-300ESEA, 400ESEA

When welding work starts or the equipped AC Generator starts to operate, the welder works at high-speed mode, and when the unloaded condition of current is applied, the machine operates at low-speed mode.

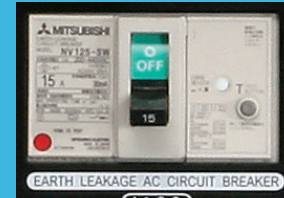


## Environmentally Friendly

- Equipped with environmentally friendly clean engines, Denyo's welders are compliant with the EU's exhaust gas regulations (Stage II).

## Safety

- Equipped with an emergency stop button
- 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

- Denyo's welders provide "one-side maintenance" in which daily checks and maintenance can be performed just by opening a single door.



MODEL	DAW-300SSEK		DLW-300ESEA		DLW-400ESEA	
			Full-range Operation	e-mode Operation	Full-range Operation	e-mode Operation

### DC Welding Output

Rated Output	kW	8.74	7.9	4.22	10.96	7.1
Rated Current	Single A	280	260	160	330	240
	Dual A	-	130	80	165	120
Rated Voltage	Single V	31.2	30.4	26.4	33.2	29.6
	Dual V	-	25.2	23.2	26.6	24.8
Current Range	Single A	30 ~ 300 (2200 ~ 3000min <sup>-1</sup> )	60 ~ 280	60 ~ 160	60 ~ 380	60 ~ 240
	Dual A	-	30 ~ 140	30 ~ 80	30 ~ 190	30 ~ 120
Rated Speed	Single min <sup>-1</sup>	3000	3000	2200	3000	2200
	Dual min <sup>-1</sup>	-	3000	2200	3000	2200
Rated Duty Cycle	Single %	50	50	100	60	100
	Dual %	-	50	100	60	100
Applicable Electrode	Single mm	2.0 ~ 6.0	2.0 ~ 6.0	2.0 ~ 4.0	2.0 ~ 8.0	2.0 ~ 5.0
	Dual mm	-	2.0 ~ 3.2	2.0 ~ 2.6	2.0 ~ 4.0	2.0 ~ 3.2

### 3-Phase AC Power Output

Rated Output	kVA	-	9.9	13.2
Rated Voltage	V	-	380	380
Rated Current	A	-	15	20
Rated Speed	min <sup>-1</sup>	-	3000	3000
Frequency	Hz	-	50	50
Power Factor	-	-	0.8	0.8
Rating	-	-	Continuous	Continuous

### 1-Phase AC Power Output

Rated Output	kVA	3	3.3 × 2
Rated Voltage	V	220	220
Rated Current	A	13.6	15 × 2
Frequency	Hz	-	50
Power Factor	-	-	1
Rating	-	-	Continuous

### Engine (4-cycle, water-cooled diesel engine)

MODEL	Kubota D722	Kubota D905	Kubota D1005
Type	Vertical, 4-cycle, water-cooled diesel engine, swirl chamber type		
Rated Output	11.7	14.7	16.5
Rated Speed	3000		
No. of Cylinders-Bore x Stroke	3-67 × 68	3-72 × 73.6	3-76 × 73.6
Displacement	0.719	0.898	1.001
Fuel	ASTM No. 2 diesel fuel or equivalent		
Fuel Tank Capacity	19	36	42
Fuel Consumption	2.1	2.33	3.24
Lube Oil Capacity	3.76	5.1	5.1
Coolant Capacity	3.8	4.7	4.7
Battery x Quantity	12V-45Ah x 1 (55B24L)		

### Dimensions, Weight and Sound Power Level

Dimensions	Length x Width x Height mm	1270 × 680 × 740	1410 × 680 × 770	1520 × 720 × 770
Dry Weight	kg	310	415	470
Sound Power Level	LWAdB	90	89	92

● Rated welding load at rated duty cycle. e-mode data is calculated by rated duty cycle at full-range operation. ● Sound level reflects 75% rated load and is calculated by averaging the measurements at four points, each 4 meters from the source.

# Global Network

## Denyo Group



**Denyo Europe B.V.**  
Molensteyn 48, 3454 PT De Meern,  
The Netherlands



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



**Denyo United Machinery Pte. Ltd.**  
**Denyo Asia Pte. Ltd.**  
27 Pioneer Sector 1, Jurong,  
Singapore 628433

## Corporate Information

### Company Outline



Denyo Head Office, Tokyo Japan

**Company Name**  
**Representative**  
**Established**  
**Head Office**  
**Paid-in Capital**  
**Fiscal Year-End**  
**Plants**  
**Number of Issued Shares**  
**Business Lines**

Denyo Co., Ltd.  
Shigeru Koga, President  
July 2, 1948  
2-8-5, Nihonbashi-horidomecho, Chuo-ku, Tokyo 103-8566, Japan  
¥1,954 million  
March 31  
Fukui and Shiga, Japan  
25,359 thousand  
Manufacture and sales of engine-driven generators, welders,  
air compressors and other special machinery



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



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

## Brief History

July 1948	Established Japan Power Welding Machine Co., Ltd.
March 1959	Developed and manufactured high-speed engine-driven welders
December 1961	Began to manufacture engine-driven generators
February 1966	Developed sound-proof generators and began production of sound-proof engine-driven generators and welders
July 1966	Changed the corporate name to Denyo Co., Ltd.
July 1970	Completed construction on the Shiga Plant
March 1976	Established a joint venture, P.T. Denyo Indonesia
April 1976	Completed construction on the Fukui Plant
February 1983	Denyo was listed on the Second Section of the Tokyo Stock Exchange
December 1992	Established a U.S. subsidiary, Denyo America Corporation
August 1995	Established a joint venture, Denyo Manufacturing Corporation in the United States
December 1997	Received ISO 9001 certification for the Fukui Plant
March 2000	Listed on the First Section of the Tokyo Stock Exchange
July 2000	Established a Singapore subsidiary, Denyo Asia Pte. Ltd.
December 2006	Moved its head office to Nihonbashi-horidomecho in Tokyo
October 2007	Established Denyo Europe B.V. in the Netherlands
July 2009	Merged with Denyo Techno Services Co., Ltd. and Denyo Trading Co., Ltd.
May 2010	Established a Vietnamese subsidiary, Denyo Vietnam Co., Ltd.





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