

NES SERIES

Extreme Ultra-low Noise, Ultra-low Noise, Low Noise Diesel Generators

Diesel Generator

Heavy emphasis on the environment,
High performance,
High quality, Safety



▲NES45EAN



▲NES300EH



▲NES500EM

Software and Hardware Technology

 **NIPPON SHARYO, LTD.**

<http://www.n-sharyo.co.jp/>

CAT. NO. 0409

Conceptualizing all that is excellent to people, to the environment,

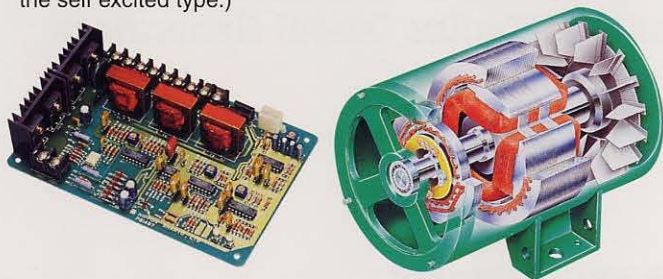
NIPPON SHARYO, LTD. is continuously pursuing safety & environment more on the basis of over 40 years experience.

Finally, We can provide the new models herein.

1 Performance

High Quality Generator Output

Using a separately excited FET type AVR (Automatic Voltage Regulator), this unit delivers high quality electricity with a voltage fluctuation of within $\pm 0.5\%$. The inverter with strong damper windings, rectifier and other features make it possible to use this generator with special loads. (The 13EI2 and 25EI2 are the self excited type.)



Antirust

Employing The ED coating & Acrylic coating are effective for antirust & offshore work. (NES45EH-NES610SM)



2 Environment

Emission Control

New NES series are designed to pass the second emission control regulated By the Japanese land infrastructure & transportation ministry. (Without the NES610SM & NES800SM.)



Sound Level

Special designed housing structure enables to make Low noise & Ultra-low noise condition.

It was admitted as Ultra-low noise & Low noise by the Japanese land infrastructure & Transportation ministry.



Diesel

NES 45

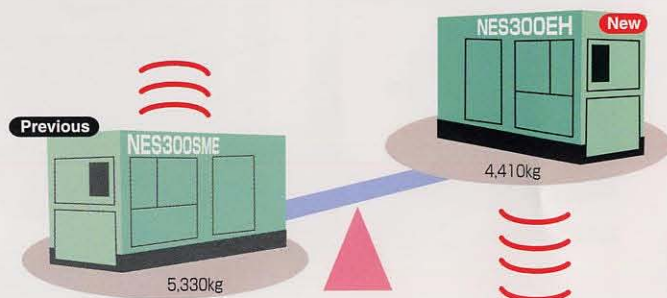


NES SERIES

3 Running Cost.

Compact & Light weight design.

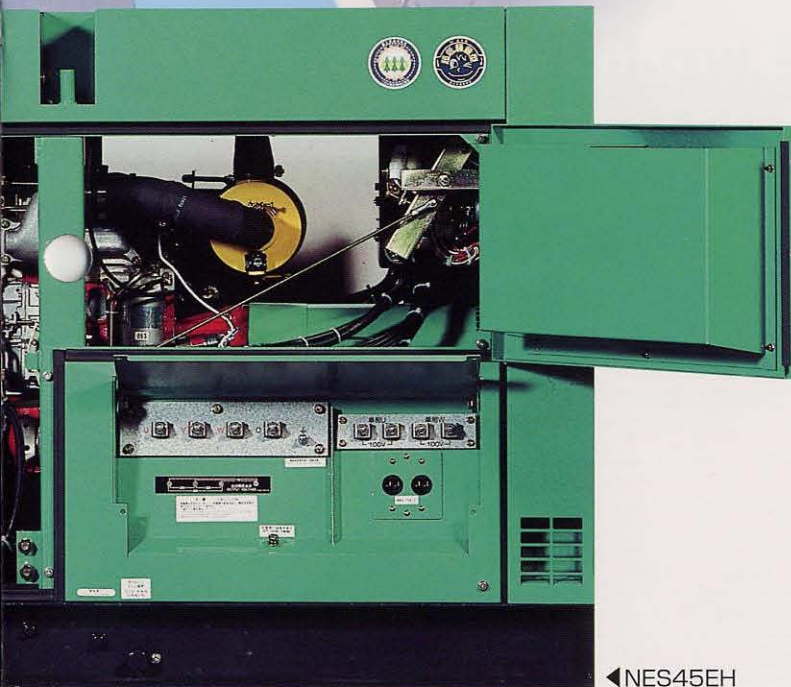
New NES series are designed to be more compact & right weight.



Fuel consumption

By employing the low fuel consumption engine, running cost become cheap.

Generator

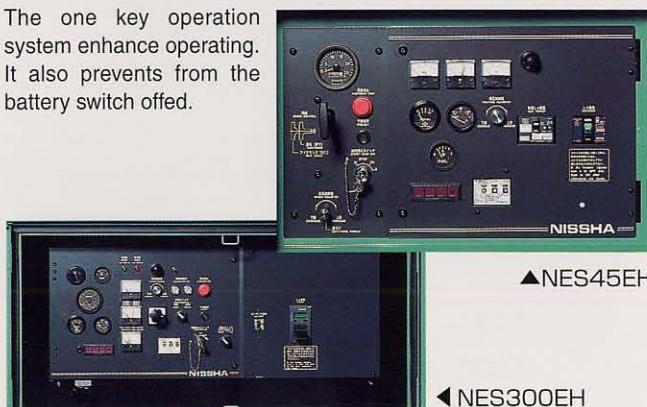


◀ NES45EH

4 Easy Operation

Battery switch less

The one key operation system enhance operating. It also prevents from the battery switch offed.



▲ NES45EH

◀ NES300EH

Easy maintenance

One side maintenance design enable to make easy maintenance.

Antitheft & Safety

The monitor are equipped as standard on all models. The sensor provided for stopping the engine for safety. The antitheft clad protects against theft (NES45EH-NES90EI standard.)

Dual Voltage

NES 150EH ~ NE800SM are designed to be Dual voltage.



▲ NES150EH

Automatic Air Bleeder

The automatic bleeder solves the entrained air trouble. (NES13EI2-NES90EI standard.)

Fuel Switching Valve

The three-way valve (patent pending) is equipped inside of the housing. (NES13EI2-NES300EH standard. NES45EH, 60EH & 90EI are two handle type.)

Large Terminal Block

Large square terminals and high capacity single phase terminals are provided, enabling secure cable connections.



▲ NES150EH

Switching Between Single Phase and Three Phase

A switch is provided to enable easy switching between supply of single phase and three phase power. (13EI2, 25EI2)

Silent Generators



▲NES45EH



▲NES90EI



▲NES150EH

Specifications by Model



Ultra-Low Noise Models

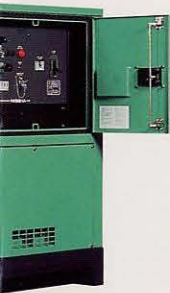
Item		Mode Units	NES13EI2		NES25EI2		NES45EH		NES60EH		NES90EI			
Generator	Frequency	Hz	50	60	50	60	50	60	50	60	50	60		
	Output	kVA	3-phase 10.5 Single phase 3-wire, 6.1	3-phase 13 Single phase 3-wire, 7.5	3-phase 20 Single phase 3-wire, 11.5	3-phase 25 Single phase 3-wire, 14.4	37	45	50	60	75	90		
		kW	3-phase 8.4 Single phase 3-wire, 6.1	3-phase 10.4 Single phase 3-wire, 7.5	3-phase 16 Single phase 3-wire, 11.5	3-phase 20 Single phase 3-wire, 14.4	29.6	36	40	48	60	72		
	Voltage	V	3-phase 200 Single phase 3-wire, 100-200	3-phase 220 Single phase 3-wire, 110-220	3-phase 200 Single phase 3-wire, 100-200	3-phase 220 Single phase 3-wire, 110-220	200	220	200	220	200	220		
	Current	A	30.3	34.1	57.7	65.6	107	118	144	157	217	236		
	Terminals		4											
	Power Factor (*1)		80% Lagging											
	Type		Brushless AC Alternator											
	Single-Phase Output	Voltage	V	100	110	100	110	100	110	100	110	100	110	
		Current	A	—		60×1 Circuits		60×2 Circuits		75×2 Circuits		100×2 Circuits		
Outlets			15A×2		15A×2		15A×2		15A×2		15A×2			

Engine	Engine Name			Isuzu 3LD1		Isuzu AA-4LE1		Hino W04D-K		Hino W04D-TG		Isuzu DD-6BG1T		
	Type			Swirl Chamber Type				Direct Injection Type						
	Cylinders Bore×Stroke		mm	3-83.1×92		4-85×96		4-104×118		4-104×118		6-110×130		
	Total Displacement		ℓ	1.496		2.179		4.009		4.009		6.494		
	Rated Output		kW	12.2	14.5	19.1	23.5	34.9	41.9	50.4	59.6	73.6	91.2	
			PS	16.6	19.7	26	32	47.5	57	68.5	81	100	124	
	Speed		min ⁻¹	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	
	Fuel Con- sumption	50% Load	ℓ/H	1.8	2.2	2.9	3.6	4.6	5.7	6.2	7.7	9.6	12	
		75% Load	ℓ/H	2.3	2.8	3.9	5.0	6.3	7.8	8.6	10.5	13	17	
	Engine Oil Volume		ℓ	7		8		16.5		16.5		20		
	Battery			80D26R(NX110-5)		80D26R(NX110-5)		55B24L(NX100-S6)		55B24L(NX100-S6)		95D31R(NX120-7)		
	Fuel Tank Capacity		ℓ	62		65		100		125		200		
	Fuel			Diesel Fuel										

Dimensions, Weight	Height	mm	950		950		1,190		1,190		1,290		
	Length (*2)	mm	1,450		1,550		1,995		2,245		2,730		
	Width	mm	700		700		880		880		1,050		
	Dry Weight	kg	530		580		1,150		1,200		1,650		
	Mass in Working Order	kg	590		650		1,260		1,335		1,850		
Sound Power Level (*3)		dB	86		89		90		92		91		
Noise Reference Value (Previous Calculation)		dB	60		63		62		63		63		

(*1) Power factor 100% when single-phase 3-wire is used
 (*2) Values in () are dimensions when the rain cover is removed.
 (*3) 60 Hz/No load, New standard formula (Lwa)

1. The NES13~NES90 are fixed frequency type generators. They are preset at the factory.
 2. Either 3-phase 3-wire or 3-phase 4-wire can be used. 3. A single phase load can be used.



▲NES220EM



▲NES500EM



Low Noise Models

Cells in the model column with the color show models which are equipped with engines that comply with Stage 2 Exhaust Emissions Standards set by the Ministry of Land, Infrastructure and Transport.

*Cells in the model column with the color show models which are equipped with engines that comply with Stage 2 Exhaust Emissions Standards set by the Ministry of Land, Infrastructure and Transport.

	NES150EH		NES220EM		NES300EH		NES400EM		NES500EM		NES610SM		NES800SM	
	50	60	50	60	50	60	50	60	50	60	50	60	50	60
	125	150	195	220	270	300	350	400	450	500	554	610	700	800
	100	120	156	176	216	240	280	320	360	400	443	488	560	640
	200/400	220/440	200/400	220/440	200/400	220/440	200/400	220/440	200/400	220/440	200/400	220/440	200/400	220/440
	361/180	394/197	563/281	577/289	779/390	787/394	1010/505	1050/525	1299/650	1312/656	1599/800	1600/800	2021/1010	2100/1050
					4									
					80% Lagging									
					Brushless AC Alternator									
	100	110	100	110	100	110	100	110	100	110	100	110	100	110
	100×2 Circuits		—		—		—		—		—		—	
	15A×2		15A×2		15A×2		15A×2		15A×2		15A×2		15A×2	
	Hino J08C-UD		Mitsubishi 6D24-TLE2B		Hino K13C-TY		Mitsubishi S6B3-E2PTAA-3		Mitsubishi S6A3-E2PTAA-1		Mitsubishi S6R-PTA		Mitsubishi S12A2-PTA	
	Direct injection type with turbo charger				Direct injection type with turbo charger & after cooler									
	6-127×130		6-137×150		6-135×150		6-135×170		6-150×175		6-170×180		12-150×160	
	7.961		11.94		12.9		14.6		18.56		24.5		33.9	
	118	140	181	199	242	269	309	346	405	467	517	565	676	757
	160	190	246	271	329	366	420	471	551	635	703	768	920	1030
	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800
	14	17	22	26	29	36	40	49	51	62	60	72	82	105
	20	24	30	36	42	52	56	69	73	87	84	99	113	141
	24.5		37		47		50		80		92		130 (Subtank-85)	
	95D31R(NX120-7)		150F51(NT200-12)		150F51(NT200-12)		180G51(NT250-15)		180G51(NT250-15)		180G51×2(NT250-15×2)		180G51×4(NT250-15×4)	
	250		370		490		490		490		580		730	
					Diesel Fuel									
	1,450		1,750		1,790		2,090		2,280		2,400		2,580	
	3,180		3,840		3,980		4,550		5,270 (4,780)		5,173 (4,690)		6,235 (5,600)	
	1,130		1,290		1,415		1,415		1,650		1,650		1,950	
	2,270		3,530		3,940		5,510		6,810		8,190		11,000	
	2,520		3,910		4,410		6,030		7,400		8,860		12,000	
	95		95		99		101		98		101		101	
	67		67		69		71		68		72		73	

Factory at 200V/50 Hz for 50 Hz areas and 220V/60Hz for 60 Hz areas.
can be used with the auxiliary outlets. (100V · 15A x 2 outlets, total 30A)

Extreme Ultra-low Noise Diesel Generators

Fin in with Silent Area

(Environment Advance Series)



- Equipped with Stage 2 Exhaust Emissions Standards Compliant Engines

- At times and in places where people notice operating noise



Used as a power supply for hospitals, schools, libraries and events, or at all-night construction sites that are close to residential areas.

- Dual Voltage Specifications

- Operation Panel and Output Terminal Block



▲NES25EAI

- A large fuel tank enables extended operation.

A 3-way cock that enables simple switching to an external fuel tank is standard equipment. This gives peace of mind concerning continuous operation.

Specifications by Model

Item			Model Units	NES25EAI				NES45EAN				NES60EAI			
Generator	Frequency		Hz	50		60		50		60		50		60	
	Output		kVA	20		25		37		45		50		60	
	Voltage		v	200	400	220	440	200	400	220	440	200	400	220	440
	Current		A	57.7	28.9	65.6	32.8	107	53.4	118	59.0	144	72.2	157	78.7
	Single-Phase Output	Voltage	v	100		110		100		110		100		110	
		Exclusive Terminals	kVA	3.0	1.5	3.3	1.65	6.0×2		6.6×2		7.5×2		8.25×2	
Outlets			15A×2				15A×2				15A×2				
Engine	Engine Name			Isuzu AA-4LE1				Nissan 2A-BD30T				Isuzu BB-4BG1T			
	Total Displacement		ℓ	2.179				2.953				4.329			
	Rated Output		kW(PS)	19.1 (26)		23.5(32)		34.5(47)		43.5 (59)		48.1 (65)		57.4(78)	
	Speed		min ⁻¹	1500		1800		1500		1800		1500		1800	
	Fuel Tank Capacity		ℓ	95				162				162			
	Fuel Consumption, 75% Load		ℓ/H	4.1		5.2		6.3		7.8		8.6		10.6	
	Usable Time (*1)		Approx. (h)	20.7		16.7		25.7		20.8		18.8		15.3	
	Engine Oil Volume		ℓ	8				10				14			
	Battery			80D26R-MF				80D26R-MF				80D26R-MF			
	Fuel			Diesel Fuel				Diesel Fuel				Diesel Fuel			
	Unit Dimensions (H×L×W)		mm	1,050×1,890×800				1,300×1,995×950				1,300×2,090×950			
	Dry Weight		kg	880				1,105				1,280			
Mass in Working Order		kg	970				1,270				1,440				
Sound Power Level (*2)		dB	81				82				83				
Noise Reference Value (Previous Calculation)		Approx. dB	51		54		51		53		55		56		

(*1) Usable time shows in cases where there is a 75% load.

(*2) 60 Hz/No load, New standard formula (LwA)

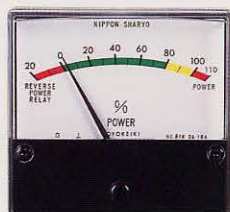
1 Automatic synchronous operation equipment (Synchro-Auto) (NES220 · 400 or higher) <Patented>

- This unit is microcomputer controlled, so it is extremely compact. It can be mounted inside the generator housing. It enables automatic synchronous start and load distribution, and is easy to operate.
- Troublesome signal lines between generators are not needed.
- It monitors synchronization congestion and reverse power flow and enables safe synchronous operation.
- It is also strong against harsh environmental conditions and can withstand outdoor temperatures ranging from -10°C ~ +45°C.



2 Percent Power Meter (NES220 and higher models)

This meter displays power distribution of each generator during synchronous operation in percent units, enabling the operator to check the power balance with a single glance. It is also equipped with a reverse power flow protective device, and can be used even in cases of manual synchronous operation.



3 Salt Damage Countermeasures

The following salt damage countermeasures are available to guard the generator from corrosion and insulation breakdown from salt damage due to seashore and marine construction and similar harsh conditions of use.

- Special molded type generator.
- Air intake cover that prevents penetration by rain water.
- A corrosion resistant silicone resin overcoat on terminals in the control panel.

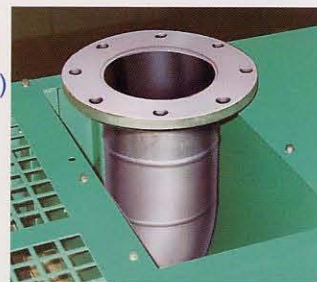
4 Automatic Starter

This device is compact and can be mounted internally inside the generator housing in the NES150 and higher models. It can start and stop the generator using external signals.



5 Muffler outlet flange mounting (NES45 or higher models)

This flange is used if the generator is installed indoors or when modifying the exhaust system.



6 Cover with Anti-theft lock (NES13, 25, 150, 220)

The external view of our generators, which in the past were found to be easy to steal, has undergone an extensive review, with modifications to prevent theft including a special cover on the suspension hooks. These covers are of course fitted with locks.



List of Options

○ marks under the model name indicate that the option is applicable to that model.

Option Item	Model	13EI2	25EI2	25EAI	45EH	45EAN	60EH	60EAI	90EI	150EH	220EM	300EH	400EM	500EM	610SM	800SM
3-phase/Single phase Switching		Standard	Standard	—	○	○	○	○	○	—	—	—	—	—	—	—
Multiple voltages		○	○	Standard	○	Standard	○	Standard	○	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Simultaneous 200/400V use		—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Automatic Starter		○	○	—	○	—	○	—	○	○	○	○	○	○	○	○
Battery charger		—	○	—	○	—	○	—	○	○	○	○	○	○	○	○
Synchro-Auto		—	—	—	—	—	—	—	—	—	○	—	○	○	○	○
% Power Meter		—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Slowdown Deice		○	○	—	—	—	—	—	—	○	○	○	○	○	○	○
Salt Damage Countermeasures		○	○	—	○	—	○	—	○	○	○	○	○	○	○	○
Muffler Flange		—	—	—	○	—	○	—	○	○	○	○	○	○	○	○
Anti-theft Clad		○	○	○	Standard	○	Standard	○	Standard	○	○	—	—	—	—	—
Panel Door with key		—	—	—	○	—	○	—	○	○	○	○	○	○	○	○
Fuel Filler Inlet with Key		○	○	—	○	—	○	—	○	○	○	○	○	○	○	○
Auto Fuel Filler		○	○	—	○	—	○	—	○	○	○	○	○	○	○	○
Three-way Cock		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	○	○	○	○
Auto Oil Filler		○	○	—	—	—	—	—	—	—	○	○	○	○	○	Standard
Skids		Standard	Standard	Standard	○	Standard	○	Standard	○	○	○	○	○	○	○	○
Trailer Specifications		—	—	—	○	—	○	—	○	○	○	○	○	—	—	—

Deciding Generator Output

NES SERIES

In the case of Motors

If the load is to be 3-phase squirrel cage induction motors (hereafter, motors), use the following as a guide to selecting the required generator output.

Motor Use Examples

(These examples of use apply to the use conditions shown at right.
Requirements differ depending on conditions, so please contact our sales representatives directly for details.)

For 50 Hz Areas

Model		NES 13	NES 25	NES 45	NES 60	NES 90	NES 150	NES 220	NES 300	NES 400	NES 500	NES 610	NES 800	
Capacity	kVA	10.5	20	37	50	75	125	195	270	350	450	554	700	
	kW	8.4	16	29.6	40	60	100	156	216	280	360	443	560	
Capacity of Usable Motors (kW)	Simultaneous Start	Direct Start	3.2	6.1	11.3	15.3	23.0	38.3	59.7	76.5	107	138	214	
		Star-Delta starting (A)	4.8	9.2	17.0	23.0	34.4	57.4	89.5	115	161	207	253	321
		Star-Delta starting (B)												
	Successive Start	Direct Start	7.9	15.1	28.0	37.8	56.7	94.4	147	189	264	340	416	529
		Star-Delta starting (A)												
		Star-Delta starting (B)												

Caution

1. The voltage blowout on startup of the motor does not exceed 30%.
2. The starting kVA of the motor is 7 kVA per kW.
3. The steady state load figures are as follows.
(1) Load factor 90%.
(2) Efficiency is 85%.
4. Even if the motors are switched on sequence, The total output of the motors what are switched on Simultaneously at first does not exceed left table ③.
5. Star-Delta starting (A): Open Δ - Δ method.
Star-Delta starting (B): Close Δ - Δ method.
6. These numbers on the table is rough standarded.
Please contact our staff when you need to consult for more detail.
7. The load that input to the engine is Depended on the effective pressure.

For 60 Hz Areas

Model		NES 13	NES 25	NES 45	NES 60	NES 90	NES 150	NES 220	NES 300	NES 400	NES 500	NES 610	NES 800	
Capacity	kVA	13	25	45	60	90	150	220	300	400	500	610	800	
	kW	10.4	20	36	48	72	120	176	240	320	400	488	640	
Capacity of Usable Motors (kW)	Simultaneous Start	Direct Start	4.0	7.7	13.8	18.4	27.6	45.9	67.3	91.8	122	153	184	245
		Star-Delta starting (A)	6.0	11.5	20.7	27.6	41.3	68.9	101	138	184	230	276	367
		Star-Delta starting (B)												
	Successive Start	Direct Start	9.8	18.8	34.0	45.3	68.0	113	166	227	302	378	453	604
		Star-Delta starting (A)												
		Star-Delta starting (B)												

Motor Selection Examples

Example: NES150 (125kVA 50Hz) adoption.

1. In case of simultaneously switching.
1) Across the line starting method.
Regardless of plural motors or single motor, Total output of the motor(s) should be within 38.3kW.
2) Star-Delta starting method.
Total output of the motor(s) should be within 94.9kW.
2. In case of sequent switching.
Total output of the motor(s) should be within 94.4kW.
But Maximum output of the motor(s) which is switched at same time
Should be within 38.3kW.

Example: Rated current calculation:

$$I^{(A)} = \frac{kVA}{\sqrt{3} \cdot V} \times 1000$$



Caution

- The specifications in this catalog are subject to change without notice.
- Before using Nippon Sharyo generators, please be sure to read the operation manual thoroughly and observe all the cautions included therein.
- Users are expressly warned not to attempt to modify the generator in any way. Nippon Sharyo shall not be liable for any damages or other results if such modifications are attempted.

Manufacturing, Sales



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