



NES SERIES

DIESEL GENERATOR SET

Get a step ahead toward
environmental awareness.



The answer is here...

NES SERIES



Diesel Generator Set

Open a vista on the future.

The history & the progress of Diesel Generator Sets can not be told without NIPPON SHARYO, LTD. We have inscribed the epoch by launching various power production facilities with new innovative concepts.

NIPPON SHARYO, LTD. perseveres in its efforts to contribute to the Environment and to Ergonomics through improving our products day by day.



1 Performance

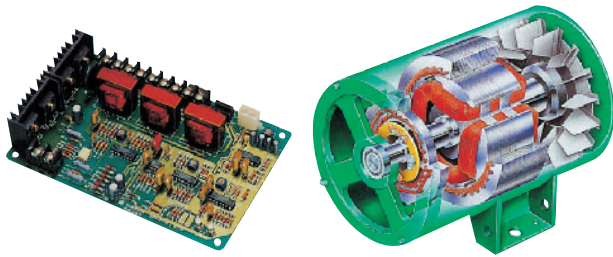
2 Environment

3 Cost

4 Maintenance

High Quality Generator Output

Using a FET type AVR (Automatic Voltage Regulator), this unit delivers high quality electricity with voltage regulation within $\pm 0.5\%$.

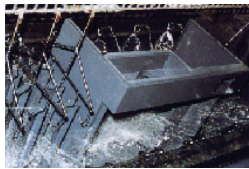


NES series is designed based on the following standards:
 JIS: JAPANESE INDUSTRIAL STANDARDS
 JEC: Standard of JAPANESE ELECTRO-TECHNICAL COMMITTEE
 JEM: Standard of JAPANESE ELECTRICAL MANUFACTURER'S ASSOCIATION
 NEGA: Standard of NIPPON ENGINE GENERATOR ASSOCIATION



Anti-rust

Electrodeposition & Acrylic coatings are effective for anti-rust & anti-salt.



Emission Control

NES series (NES13EK~NES500EM) is designed to pass the second emission regulation by the Ministry of Land, Infrastructure & Transport, Japan.



Sound Level

Sound proofed & weather proofed enclosure makes for silent operation. All NES series are approved under the Silent & Super Silent classifications of the Ministry of Land, Infrastructure & Transportation, Japan.



Economical

Our Diesel Generator Sets are designed with low fuel consumption Diesel Engines.

The compact design of the Diesel Generator Sets reduces transport charges. And the durability of the whole set makes a longer life, i.e. the initial investment will be repaid over time.

Easy access

One side maintenance design gives you easier access for maintenance duties.



▲For example

Anti-theft & Safety

The safety monitor is equipped as standard on all models, with a sensor, which stops the engine for safety. The anti-theft cover is provided for security. (NES45EN, NES60EH, NES100EI)

Dual Voltage

Dual voltage is designed for NES125EM~NES800SM.



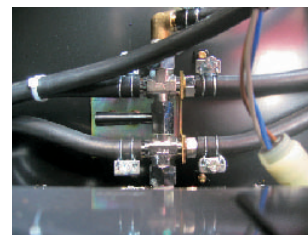
▲NES150EH

Automatic Air Bleeder

The automatic air bleeder solves the problem of entrained air obstruction. (standard for NES13EK-NES100EI)

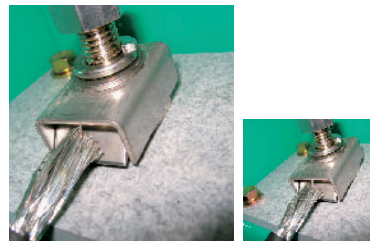
Fuel Switching Valve

The three-way valve (patent pending) is equipped inside the housing. (standard for NES13EK~NES300EH)



Easy Connection

Large terminals provide easy open wire & terminal connection.



▲NES45AP

Standard Type Specification Table



Super Silent Models Silent Models

Models marked ★ have passed the 2nd Emission Regulation by the Ministry of Land, Infrastructure and Transport, JAPAN.

Item	Mode Units	Super Silent Models					Silent Models																						
		NES13EK-3★	NES25EK-3★★	NES45EN2★	NES60EH★	NES100EI★	NES125EH★	NES150EH★	NES220EM★	NES300EH★	NES400EM★	NES500EM★	NES610SM★	NES800SM															
Frequency	Hz	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60				
Output	Prime	kVA	10.5	13	20	25	37	45	50	60	80	100	100	125	125	150	195	220	270	300	350	400	450	500	554	610	700	800	
	Standby	kVA	11.6	14.3	22	26.3	40.7	47.3	55	66	84	105	110	138	138	165	215	242	297	315	385	440	495	550	582	641	735	800	
Voltage(*1)	V	①Single Voltage (Dual Voltage is available as option)										②Dual Voltage																	
No. of poles		4										4																	
Power Factor		80% Lagging										80% Lagging																	
Type & No of Phase		Brushless Alternator, 3-Phase,4-Wire										Brushless Alternator, 3-Phase,4-Wire																	
Engine Model		KUBOTA D1503	KUBOTA V2403	NISSAN 2A-BD30T	HINO W04D-TG	ISUZU DD-6BG1T		HINO J08C-UD	HINO J08C-UD	MITSUBISHI 6D24-TLE2B	HINO K13C-TY	MITSUBISHI S6B3-E2PTAA-3	MITSUBISHI S6A3-E2PTAA-1	MITSUBISHI S6R-PTA	MITSUBISHI S12A2-PTA														
Type		Swirl Chamber Type			Direct injection type with turbo charger			Direct injection type with turbo charger & cooler																					
Cylinders Bore × Stroke	mm	3-83×92.4	4-87×102.4	4-96×102	4-104×118	6-105×125		6-114×130	6-114×130	6-130×150	6-135×150	6-135×170	6-150×175	6-170×180	12-150×160														
Total Displacement	ℓ	1.499	2.434	2.953	4.009	6.494		7.961	7.961	11.94	12.9	14.6	18.56	24.5	33.9														
Rated Output	kW	11.5	13.7	19.1	23.7	34.5	43.5	50.4	59.6	73.6	91.2		118	140	118	140	181	199	242	269	309	346	405	467	517	565	676	757	
	PS	15.6	18.6	26	32.2	47.5	57	68.5	81	100	124		160	190	160	190	246	271	329	366	420	471	551	635	703	768	920	1030	
Speed	min ⁻¹	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800		1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	
Fuel Consumption	100% Load	ℓ / H	2.9	3.6	5.2	6.6	8.5	10	11	13	18	23		21	26	26	32	39	47	56	69	73	91	97	115	108	127	135	165
	75% Load	ℓ / H	2.4	3.0	4.0	5.0	6.3	7.9	8.6	10	13	17		15	19	20	24	30	36	42	52	56	69	73	87	84	99	113	141
Engine Oil Volume	ℓ	7	9.5	11	16.5	20		24.5	24.5	37	47	50	80	92	130(Subtank-85)														
Battery		80D26R × 1	80D26R × 1	80D26L × 1	55B24L × 2	95D31R × 2		95D31R × 2	95D31R × 2	150F51 × 2	150F51 × 2	180G51 × 2	180G51 × 2	180G51 × 2	180G51 × 4														
Fuel Tank Capacity	ℓ	58	70	100	125	200		250	250	370	490	490	490	580	730														
Fuel		Diesel Fuel										Diesel Fuel																	
Dimensions, Weight	Height	mm	950	980	1,350	1,190	1,290		1,450	1,450	1,750	1,790	2,090	2,280	2,400	2,580													
	Length(*2)	mm	1,480	1,550	1,740	2,245	2,730		3,180	3,180	3,840	3,980	4,550	5,270(4,790)	5,173(4,690)	6,235(5,600)													
	Width	mm	650	700	880	880	1,050		1,130	1,130	1,290	1,415	1,415	1,650	1,650	1,950													
	Dry Weight	kg	520	610	990	1,200	1,650		2,170	2,270	3,530	3,940	5,510	6,810	8,190	11,000													
	Mass in Working Order	kg	580	680	1,090	1,335	1,850		2,420	2,520	3,910	4,410	6,030	7,400	8,860	12,000													
Sound Power Level(*3)	dB	83	90	90	92	93		94	95	95	99	101	98	101	101														
Sound Pressure Level(*4)	dB	57	62	60	63	65		66	67	67	69	71	68	72	73														




(*1) Rated Voltage Classification (*2) exclude the rain cover dimension (*3) 60Hz/No load (LwA) (*4) 60Hz/No load at 7m

	50Hz	60Hz
①	190~210V	210~240V
②	190~210V	210~240V
	380~420V	420~480V

Ultra Super Silent Type

Specification Table

Get at **APEX**
 Ultra Super Silent + Friendly + Easy Maintenance
AP Series

			EA Series		AP Series				
									
Item		Mode Units	NES25EA12		NES45AP		NES60AP		
Alternator	Frequency	Hz	50	60	50	60	50	60	
	Output	Prime	kVA	20	25	37	45	50	60
		Standby	kVA	22	26.3	40.7	47.3	55	66
	Voltage (*1)	V	①Single Voltage						
	No.of poles		4						
	Power Factor		80% Lagging						
	Type & No of Phase		Brushless Alternator, 3-Phase,4-Wire						
Engine	Engine Model		ISUZU AA-4LE1		NISSAN 2A-BD30T		HINO WO4D-TG		
	Total Displacement	ℓ	2,179		2,953		4,009		
	Rated Output	kW	19.1	23.5	34.5	43.5	50.4	59.6	
	Speed	min ⁻¹	1500	1800	1500	1800	1500	1800	
	Fuel Tank Capacity	ℓ	75		180		180		
	Fuel Consumption	100%Load		5.0	6.4	8.5	10	11	13
		75%Load		3.7	4.7	6.3	7.9	8.4	10
	Engine Oil Volume	ℓ	8		11		16.5		
	Battery		80D26R × 1		80D26L × 1		55B24L × 2		
Fuel		Diesel Fuel							
Dimension (H×L×W)	mm	1,050×1,570×800		1,445×1,760×995		1,550×2,000×995			
Dry Weight	kg	690		1,185		1,430			
Mass in Working Order	kg	765		1,355		1,610			
Sound Power Level (*2)	dB	82		82		83			
Sound Pressure Level(*3)	dB	54		55		55			

(*1) Rated Voltage Classification

	50Hz	60Hz
①	190~210V	210~240V

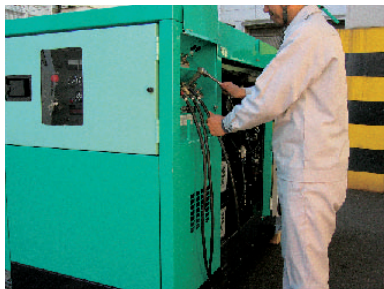
(*2) 60Hz/No load (LWA)

(*3) 60Hz/No load at 7m

Friendly

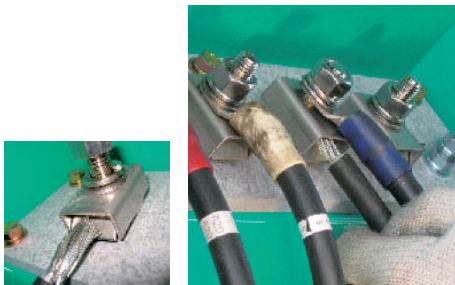
Terminal

The terminal is located on the upper section of the enclosure. It can provide access to the connection without the need to squat down.



Easy Connection

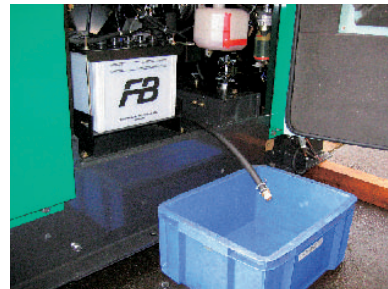
Large terminals offer easy access to open wire & terminal connection.



Easy Maintenance

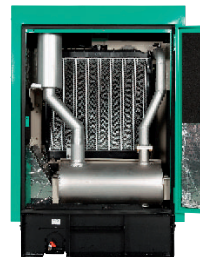
One touch Oil Changer

Newly designed oil changer without any special tools. It is very easy to use. Only 1 second lead time.



Washable

Flat floor provides easy access to wash. The radiator cover is hinged, making the radiator easier to wash.



Quiet acoustics

Your daily conversation is louder than AP series!

Optional Devices

1 Automatic Parallel Running Controller (Synchro-Auto)

(NES220 & upper range from NES400)
<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 wiring of signal lines between generators is not needed anymore.
- It controls synchronization failure and reverse power and enables safe parallel running.
- It is also highly resistant to harsh environmental conditions.



3 Energy Saving Remote Control

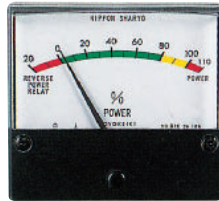
This Remote Control selects the engine speed, idling or rated. It saves fuel consumption in operation.



2 Percent Power Meter

(upper range from NES220)

This meter displays the percentage load sharing of each generator during parallel running, so that the operator can check the power balance easily. Reverse Power Protection is also facilitated by the Percent Power Meter which is useful for manual operation of parallel running.



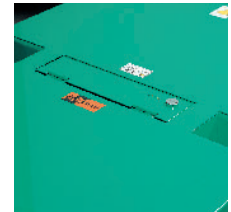
4 Auto Start-Stop Unit

This compact device can be mounted inside the generator housing in the NES series upper range from NES125. It can start and stop the generator using external signals.



5 Anti-theft Cover

The anti-theft cover is provided for security.



List of Options ○=Optional attachment, — = Not available (N.A.)

Option Item	Model	13EK	25E13	25EA12	45EN	45AP	60EH	60AP	100EI	125EH	150EH	220EM	300EH	400EM	500EM	610SM	800SM
Synchro-Auto		—	—	—	—	—	—	—	—	—	—	○	—	○	○	○	○
%Power Meter		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Energy Save Remote Control		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Auto-Start Stop unit		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Anti-theft Cover		○	○	○	Standard	○	Standard	○	Standard	○	○	○	—	—	—	—	—
3-phase /Single phase Switching		Standard	Standard	Standard	○	○	○	○	○	—	—	—	—	—	—	—	—
Dual Voltage		○	○	○	○	○	○	○	○	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Simultaneous 200/400V use		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Battery charger		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Slowdown Deice		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Anti-Salt Treatment		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Muffler Flange		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
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	Standard	○	○	○	○
Auto Oil Filler		—	—	—	—	—	—	—	—	—	—	○	—	○	○	○	○

In case that the user has specific requirement about option, please consult with us.

Generator Selection

Generator Selection

This generator selection table shows suitable selection under the Squirrel-Cage induction motor load. (hereinafter referred to as motor).

Details of generator selection should be decided according to motor specification. Please contact us when you need to decide actual selection.

Table 1 Generator selection at steady operation

Motor capacity(kW)	1.5	2.2	3.7	5.5	7.5	11	19	22	37	45	60
Generator capacity(kVA)	2.2	3.2	5.4	8.1	11.0	16.2	27.9	32.4	54.4	66.2	88.2

Table 2 Generator selection at starting

Motor capacity(kW)	1.5	2.2	3.7	5.5	7.5	11	19	22	37	45	60	
Generator Capacity(kVA)	Direct Starting	4.9	7.2	12.1	18.0	24.5	35.9	62.1	71.9	121	147	196
	Y-Δ	3.3	4.8	8.1	12.0	16.3	24.0	41.4	47.9	80.6	98.0	131

(1) Single or Multi Motor starting at the same time.

Referring to the above tables 1 & 2, suitable generator capacity should be selected to cover the necessary motor capacity. The higher figure of generator capacity is to be selected.

Starting 3.7kW and 5.5kW motors at the same time

Motor Capacity (kW)	3.7	5.5	3.7+5.5	
Generator Capacity (kVA)	Table 1	5.4	8.1	5.4+8.1=13.5
	Table 2	12.1	18.0	12.1+18.0=30.1

Minimum Generator demand is 30.1kVA

(2) Multi Motor sequential starting.

The selection of the generator capacity should be the addition of the following two elements.

- 1) Generator capacity needed for the steady operation of the preceding motor already started. (ref. Table 1)
- 2) Generator capacity needed for the motor starting last. (ref. Table 2)

Starting 7.5kW, 11kW and 19kW(Y-Δ) motor sequentially

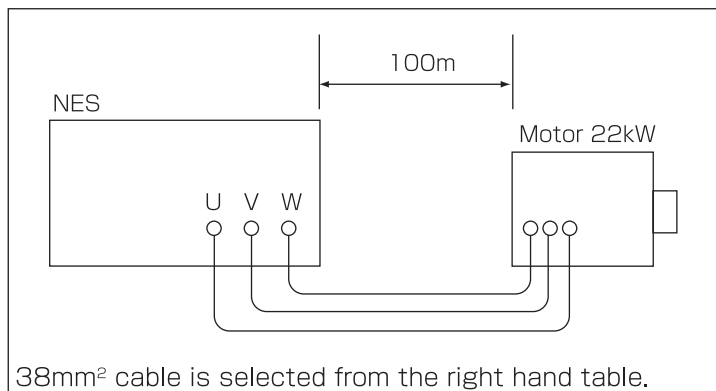
Motor Capacity (kW)	7.5	11	19	7.5+11+19
Generator Capacity (kVA)	Table 1	11.0	16.2	11.0+16.2+41.4
	Table 2			41.4

Minimum Generator demand is 68.6kVA

Guidance for cable selection

- 1 Voltage drop for the cable is designed within 10(V) based on the following conditions.
- 2 Current for each 1 square millimeter is around 3(A).

For example.



If magnetic contactors are chattering while the motor is started, please reselect a cable larger than the one initially selected.

Cable square (mm²)

Motor Capacity (kW)	Current at full Load (A)	Within 20m	Within 100m	Within 200m
1.5	7.3	3.5	3.5	5.5
2.2	10	3.5	5.5	8
3.7	16	5.5	5.5	14
5.5	24	8	14	22
7.5	31	14	14	22
11	45	22	22	38
19	74	30	30	60
22	87	38	38	80
37	143	50	60	100
45	175	60	80	150
60	220	80	100	200

Distributor

Manufacturer

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- Specification in this catalog subject to change without notice.
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- Instruction manual must be read thoroughly before operating the generator set.
- Modification, remodeling at customer side is not accepted.

Due to company's policy of continuous development and improvement, the right is reserved to change the specifications without notice.

109BE (Apr.2007)