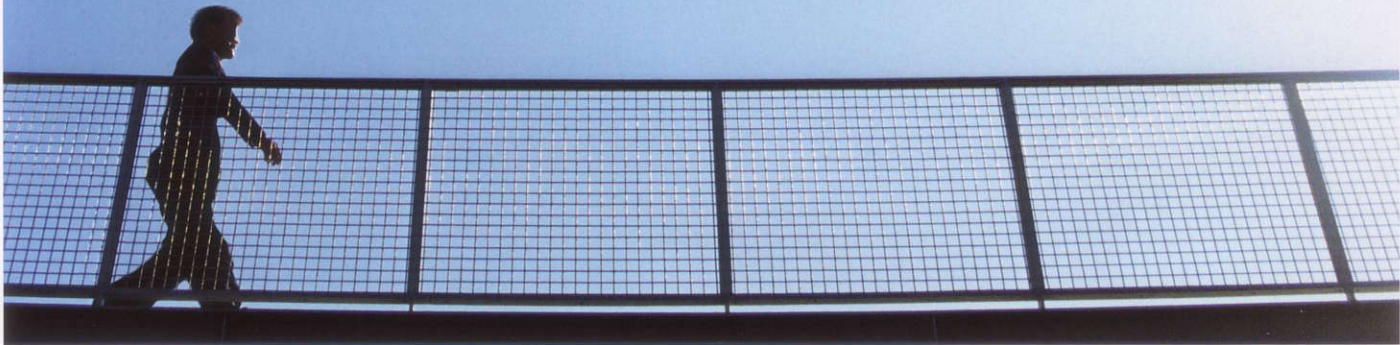




NES SERIES

DIESEL GENERATOR

Get a step ahead to the
environmental awareness.



The answer is here...

NES SERIES



Diesel Generator

Open a vista for the future.

NIPPON SHARYO,LTD. is walking paralleled with generator history from 1959.

The flow of history is drastic changed while back.

People all over the world gather strength to environmental requires in now.

What should manufacturer do?

Environment, Ergonomics...



1 Performance

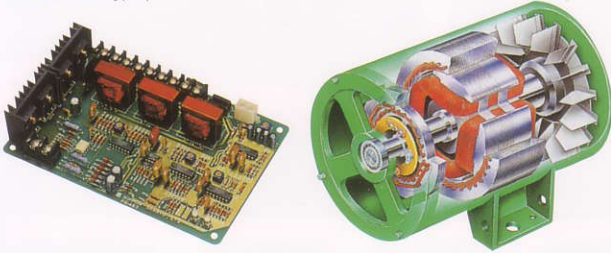
2 Environment

3 Cost

4 Maintenance

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 13EK and 25EI3 are the self excited type.)



NES series are designed based on below standard.
 JIS: JAPANESE INDUSTRIAL STANDARDS
 JEC: Standard of JAPANESE ELECTRO-TECHNICAL COMMITTEE
 JEM: Standard of JAPAN ELECTRICAL MANUFACTURER'S ASSOCIATION
 NEGA: Standard of NIPPON ENGINE GENERATOR ASSOCIATION



Antirust

Employing The ED coating & Acrylic coating are effective for antirust & offshore work. (NES45EH-NES800SM)



Emission Control

New NES series are designed to pass the second emission control regulated by Ministry of Land, Infrastructure & Transport, JAPAN (Check off the NES610SM & NES800SM.)



Sound Level

Sound attenuated & weather proofed enclosure can make a silent condition. All series are approved Low Noise Class & Ultra Low Noise Class by Ministry of Land, Infrastructure & Transport.



Economical

Compact design administers to minimize a transportation cost. Latest clean diesel engine improves fuel efficiency.

Easy access

One side maintenance design give you unrestricted access to maintenance parts.



▲NES45EH

Antitheft & Safety

The monitor are equipped as standard on all models. The sensor provided for stopping the engine for safety. The antitheft cover protects against theft (NES45EH-NES100EI standard.)

Dual Voltage

NES125EH~NES800SM are designed to be dual voltage.



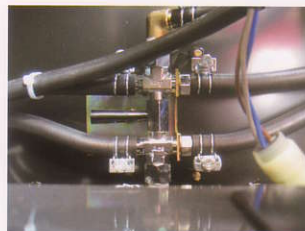
▲NES150EH

Automatic Air Bleeder

The automatic bleeder solves the entrained air trouble. (NES13EK-NES100EI standard.)

Fuel Switching Valve

The three-way valve (patent pending) is equipped inside of the housing. (NES13EK-NES300EH standard. NES45EH & 60EH are two handle type.)



Easy Connection

Large terminals accepted open wire connection & terminal eyes connection.



▲NES45AP

One Touch Single&3 Phase Selector

One touch Single&3 phase selector provided to minimize a time loss. (NES13EK, NES25EI3.)

Standard Series

Performance Data



▲NES25E13



▲NES150EH



Ultra-Low Noise Models

★marked model is passed the 2nd Emission Control Regulation, by Ministry of Land, Infrastructure and Transport.



Item	Mode Units	NES13EK		NES25E13		NES45EH		NES60EH		NES100E1		
		Frequency	Hz	50	60	50	60	50	60	50	60	50
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	80	100	
	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	64	80	
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	231	262	
No. of poles		4										
Power Factor (*1)		80% Lagging										
Type		Brushless AC Generator										
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 Model		KUBOTA D1503		ISUZU AA-4LE1		HINO W04D-K		HINO W04D-TG		ISUZU DD-6BG1T		
Type		Swirl Chamber Type				Direct Injection Type		Direct injection type with turbo charger				
Cylinders Bore × Stroke	mm	3-83×92.4		4-85×96		4-104×118		4-104×118		6-105×125		
Total Displacement	ℓ	1.499		2.179		4.009		4.009		6.494		
Rated Output	kW	11.5	13.7	19.1	23.5	34.9	41.9	50.4	59.6	73.6	91.2	
	PS	15.6	18.6	26	32	47.5	57	68.5	81	100	124	
Speed	min ⁻¹	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	
Fuel Consumption	50% Load	ℓ / H	1.9	2.4	2.9	3.6	4.6	5.7	6.2	7.7	10	13
	75% Load	ℓ / H	2.4	3.0	3.7	4.7	6.3	7.8	8.6	10.5	14	18
Engine Oil Volume	ℓ	6.5		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	58		65		100		125		200		
Fuel		Diesel Fuel										
Dimensions, Weight	Height	mm	950		950		1,190		1,190		1,290	
	Length(*2)	mm	1,480		1,570		1,995		2,245		2,730	
	Width	mm	650		700		880		880		1,050	
	Dry Weight	kg	520		580		1,150		1,200		1,650	
	Mass in Working Order	kg	580		660		1,260		1,335		1,850	
Sound Power Level (*3)	dB	83		90		90		92		93		
Noise Reference Value (Previous Calculation)	dB	58		62		62		63		65		

1. NES13~NES100 are fixed frequency type generators. They are preset at the factory at 200V/50 Hz for 50 Hz areas and 220V/60Hz for 60 Hz areas.
 (*1) Power factor 100% when single-phase 3-wire is used (*2) () exclude a rain cover dimension (*3) 60 Hz/No load, New standard formula (LWA)



▲NES220EM



▲NES300EH



▲NES610SM

*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 Ministry of Land, Infrastructure and Transport.



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 Ministry of Land, Infrastructure and Transport.




★		★		★		★		★		★					
NES125EH		NES150EH		NES220EM		NES300EH		NES400EM		NES500EM		NES610SM		NES800SM	
50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60
100	125	125	150	195	220	270	300	350	400	450	500	554	610	700	800
80	100	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	200/400	220/440
289/144	328/164	361/180	394/197	563/281	577/289	779/390	787/394	1010/505	1050/525	1299/650	1312/656	1599/800	1601/800	2021/1010	2100/1050
4															
80% Lagging															
Brushless AC Generator															
100	110	100	110	100	110	100	110	100	110	100	110	100	110	100	110
100x2 Circuits		100x2 Circuits		-		-		-		-		-		-	
15A×2		15A×2		15A×2		15A×2		15A×2		15A×2		15A×2		15A×2	
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	
Direct injection type with turbo charger & cooler															
6-114×130		6-127×130		6-130×150		6-135×150		6-135×170		6-150×175		6-170×180		12-150×160	
7.961		7.961		11.94		12.9		14.6		18.56		24.5		33.9	
118	140	118	140	181	199	242	269	309	346	405	467	517	565	676	757
160	190	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	1500	1800
11	14	14	17	22	26	29	36	40	49	51	62	60	72	82	105
15	19	20	24	30	36	42	52	56	69	73	87	84	99	113	141
24.5		24.5		37		47		50		80		92		130 (Subtank-85)	
95D31R (NX120-7)		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		250		370		490		490		490		580		730	
Diesel Fuel															
1,450		1,450		1,750		1,790		2,090		2,280		2,400		2,580	
3,180		3,180		3,840		3,980		4,550		5,270 (4,780)		5,173 (4,690)		6,235 (5,600)	
1,130		1,130		1,290		1,415		1,415		1,650		1,650		1,950	
2,170		2,270		3,530		3,940		5,510		6,810		8,190		11,000	
2,420		2,520		3,910		4,410		6,030		7,400		8,860		12,000	
94		95		95		99		101		98		101		101	
66		67		67		69		71		68		72		73	

2. Either 3-phase 3-wire or 3-phase 4-wire can be used. 3. A single phase load can be used with the auxiliary outlets. (100V·15A×2 outlets, total 30A)

Ultra Silent Series

Performance data

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

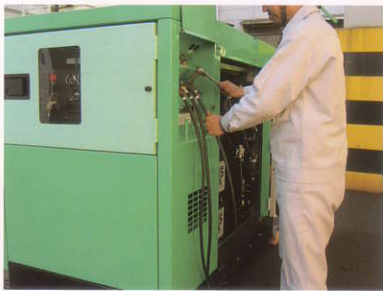
			EA Series		AP Series				
									
Item		Mode Units	NES25EA12		NES45AP		NES60AP		
Generator	Frequency	Hz	50	60	50	60	50	60	
	Output	kVA	3-phase 20 Single phase 3-wire, 11.5	3-phase 25 Single phase 3-wire, 14.4	37	45	50	60	
	Voltage	V	3-phase 200 Single phase 3-wire, 100-200	3-phase 220 Single phase 3-wire, 110-220	200	220	200	220	
	Current	A	57.7	65.6	107	118	144	157	
	Single Phase Output	Voltage	V	100	110	100	110	100	110
		Current	A	60x1 Circuits		60x2 Circuits		75x2 Circuits	
		Outlets		15Ax2		15Ax2		15Ax2	
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	75% Load		3.7	4.7	6.3	7.8	8.4	10
		Uptime (*1)	h	20.2	16.0	28.6	23.1	21.4	18.0
	Engine Oil Volume	ℓ	8		11		16.5		
	Battery		80D26R-MF		85D26L		55B24L		
Fuel		Diesel Fuel		Diesel Fuel		Diesel Fuel			
Dimension (HxLxW)	mm	1,050x1,570x800		1,445x1,760x995		1,550x2,000x995			
Dry Weight	kg	690		1,185		1,430			
Mass in Working Order	kg	765		1,365		1,610			
Sound Power Level (*2)	dB	82		82		83			
Noise Reference Value (Previous Calculation)	dB	54		55		55			

*1 Uptime is under 75% Load. *2 Sound Power Level at 60Hz no Load

Friendly

Terminal

The terminal is located on upper position of the enclosure. It can provide a relievable connection without squat down.



Easy Connection

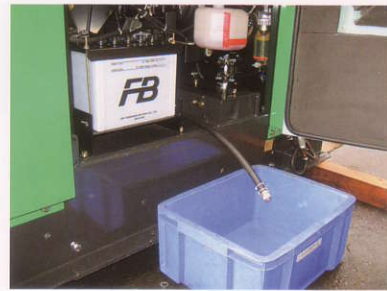
Large terminals are accepted open wire connection & terminal connection. 2 anchor bars are equipped to fix wires.



Easy Maintenance

One touch Oil Changer

Special designed oil changer never needed any tools. It is very easy! Only 1 second lead time.



Washable

Flat floor & open radiator mask provide easy access to wash it.



Quiet acoustics

Your daily conversation is louder than AP series!

Optional Devices

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.



3 Energy Save Remote Control

This unit enhance a fuel saving operation. It can very easy control the engine revolution speed by switch.
(NES220 & higher models)



4 Automatic Starter

This device is compact and can be mounted internally inside the generator housing in the NES125 and higher models. It can start and stop the generator using external signals.



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.



5 Antitheft Cover

Antitheft cover can eliminate a theft.



List of Options ○=Optional attachment

Option Item	Model	13EK	25EI3	25EA12	45EH	45AP	60EH	60AP	100EI	125EH	150EH	220EM	300EH	400EM	500EM	610SM	800SM
3-phase /Single phase Switching		Standard	Standard	Standard	○	○	○	○	○	—	—	—	—	—	—	—	—
Multiple voltages		○	○	○	○	○	○	○	○	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Simultaneous 200/400V use		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Automatic Starter		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Battery charger		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Synchro-Auto		—	—	—	—	—	—	—	—	—	—	○	—	○	○	○	○
%Power Meter		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Slowdown Deice		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Energy Save Remote Control		—	—	—	—	—	—	—	—	—	—	○	○	○	○	○	○
Salt Damage Countermeasures		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Muffler Flange		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Anti-theft Cover		○	○	○	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	Standard	○	○	○	○
Auto Oil Filler		—	—	—	—	—	—	—	—	—	—	○	—	○	○	○	○

Generator Selection

Generator Selection

This generator selection table is shown a suitable selection under the Squirrel-Cage Induction motor load. (hereinafter referred to as motor).
Details of generator selection should be decided up to motor specification. Please contact us when you need to decide actual selection.

Table1 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

Table2 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 time.

Suitable generator should be selected from above Table1 & Table2 by each motors capacity.
Product of large number of generator demand is the minimum generator selection.

Starting a 3.7KW,5.5KW Motors at 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 starting sequentially.

The generator selection for precede starting motors are selected from Table1.
The generator selection for end up with starting motor is selected from Table2.
Product number of each above numbers are minimum generator selection.

Starting a 7.5KW,11KW,19KW (Y-Δ)Motors sequentially

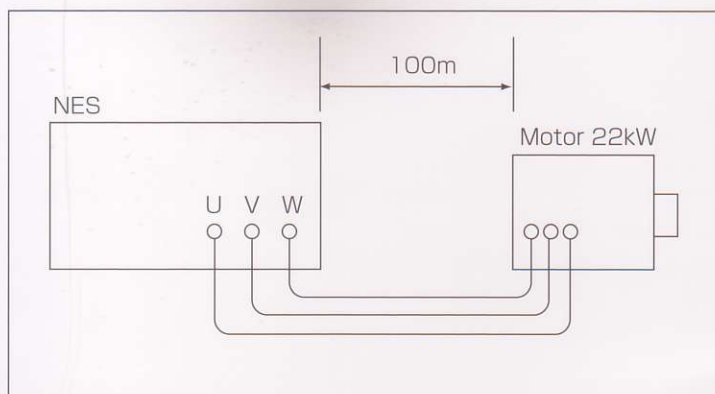
Motor Capacity (kW)	7.5	11	19	7.5+11+19
Generator Capacity (kVA)	Table 1	11.0	16.2	11.0+16.2+41.4
	Table 2			41.4 =68.6

Minimum Generator demand is 68.6kVA

Cable selection

- 1 Voltage drop for the cable is designed within 10(V).
- 2 Current for each 1 square mili meter is around 3(A).

For example.



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

If magnetic contactor is chattering while starting a motor, please reselect a over size than originally.

Distributor

Manufacturer

 **NIPPON SHARYO, LTD.**

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

〒458 80Ryuchō, Narumi-cho, Midoriku, Nagoya, Japan
Tel : 81-(52) 623-3312 Fax : 81-(52) 623-4349

- Specification on this catalog subject to change without notice.
All rights reserved NIPPON SHARYO, LTD.
- Instruction manual must be read thoroughly before operate 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 (Nov.2006)