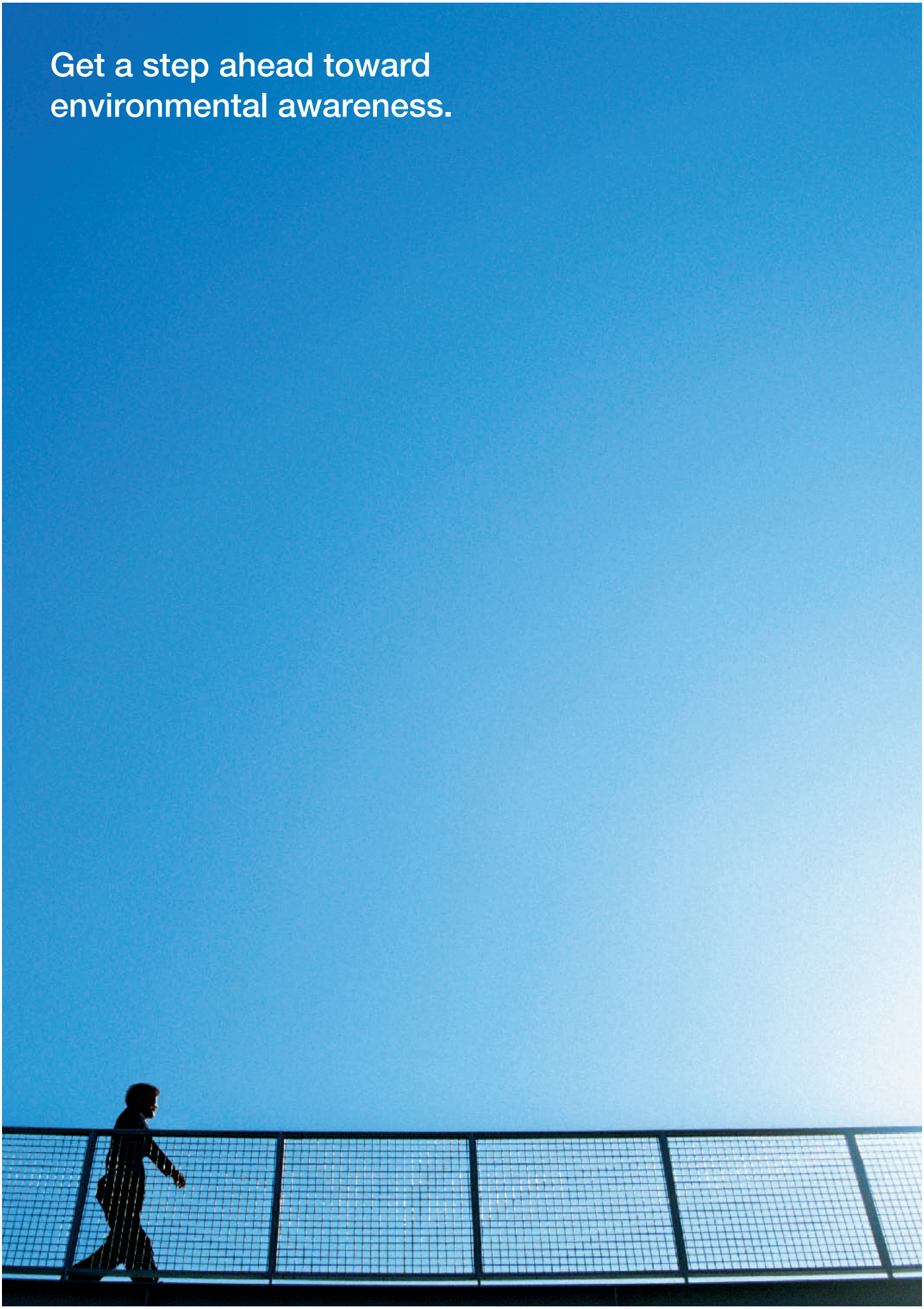
NES SERIES

DIESEL GENERATOR SET

NIPPON SHARYO, LTD.

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

Get a step ahead toward environmental awareness.



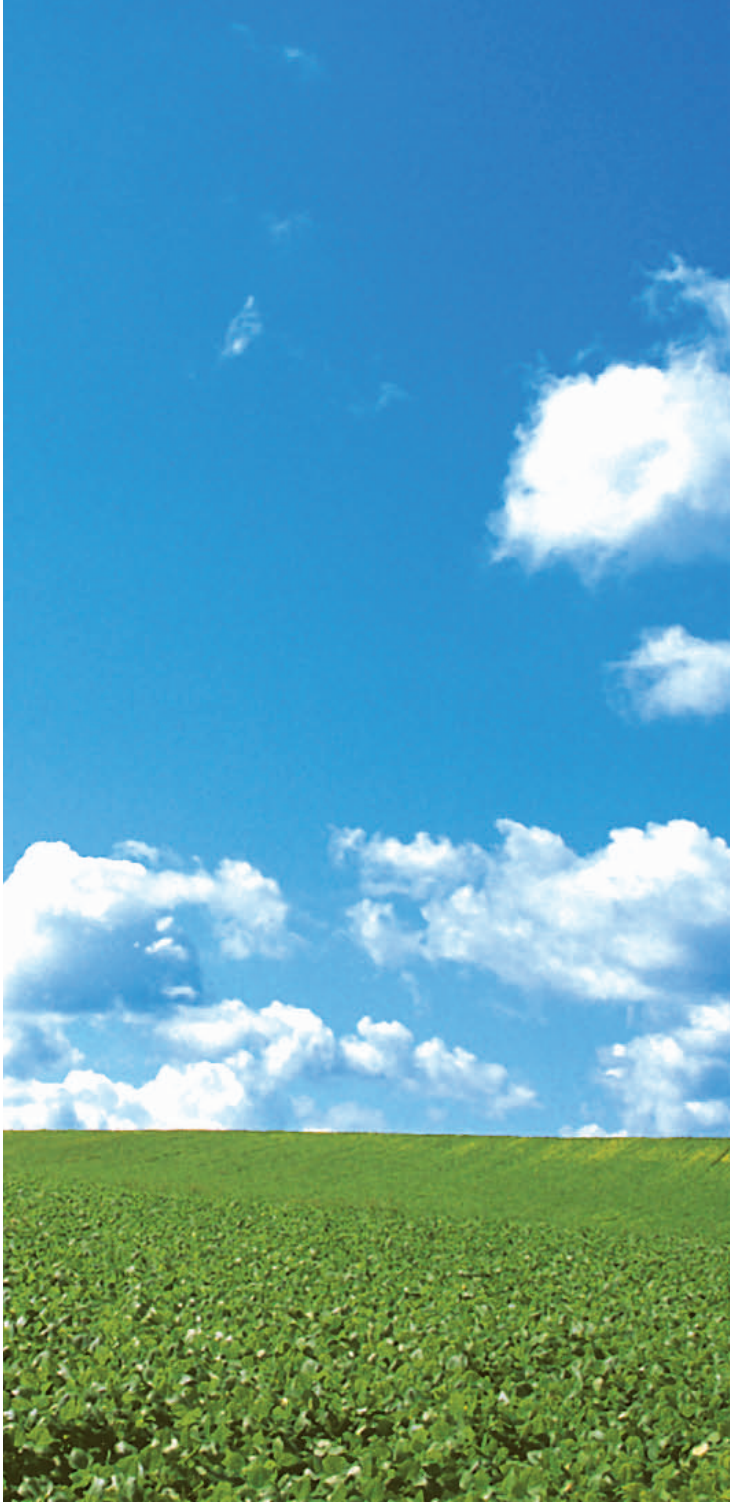
The answer is here...

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

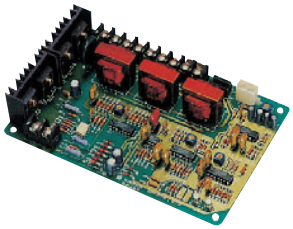
2 Environment

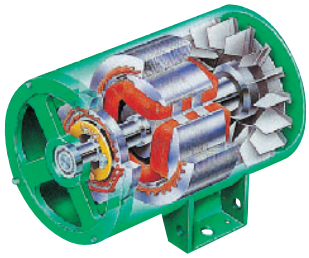
3 Cost

4 Maintenance

High Quality Generator Output

Using a FET type AVR (Automatic Voltage Regulator), this unit delivers high quality electricity with voltage regulation within ± 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.

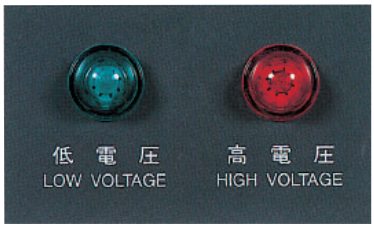
▲For example

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.



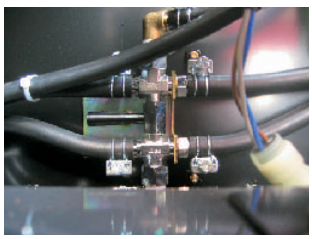
▲NES150EH

Automatic Air Bleeder

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

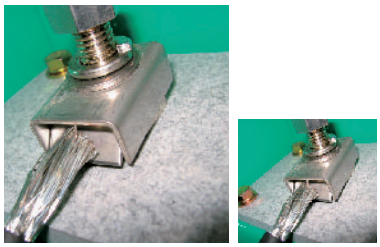
Fuel Switching Valve

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

▲NES25EI3

▲NES150EH

Super Silent Models

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


★


★


★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Item			Mode / Units	NES13EK		NES25EI3		NES45EN		NES60EH		NES100EI	
Alternator	Frequency		Hz	50	60	50	60	50	60	50	60	50	60
	Output	Prime	kVA	10.5	13	20	25	37	45	50	60	80	100
		Standby	kVA	11.6	14.3	22	26.3	40.7	47.3	55	66	84	105
	Voltage (*1)		V	①Single Voltage (Dual Voltage is available as option)									
	No. of poles			4									
	Power Factor			80% Lagging									
	Type & No of Phase			Brushless Alternator, 3-Phase,4-Wire									
Engine	Engine Model			KUBOTA D1503		ISUZU AA-4LE1		NISSAN 2A-BD30T		HINO W04D-TG		ISUZU DD-6BG1T	
	Type			Swirl Chamber Type				Direct injection type with turbo charger					
	Cylinders Bore × Stroke		mm	3-83×92.4		4-85×96		4-96×102		4-104×118		6-105×125	
	Total Displacement		ℓ	1.499		2.179		2.953		4.009		6.494	
	Rated Output		kW	11.5	13.7	19.1	23.5	34.5	43.5	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	100% Load	ℓ/H	2.9	3.6	5.0	6.4	8.5	10	11	13	18	23
		75% Load	ℓ/H	2.4	3.0	3.7	4.7	6.3	7.9	8.6	10	13	17
	Engine Oil Volume		ℓ	7		8		11		16.5		20	
	Battery			80D26R × 1		80D26R × 1		80D26L × 1		55B24L × 2		95D31R × 2	
	Fuel Tank Capacity		ℓ	58		65		100		125		200	
	Fuel			Diesel Fuel									
Dimensions, Weight	Height		mm	950		950		1,350		1,190		1,290	
	Length(*2)		mm	1,480		1,570		1,740		2,245		2,730	
	Width		mm	650		700		880		880		1,050	
	Dry Weight		kg	520		590		1,010		1,200		1,650	
	Mass in Working Order		kg	580		660		1,110		1,335		1,850	
Sound Power Level (*3)			dB	83		89		88		92		93	
Sound Pressure Level(*4)			dB	57		62		60		63		65	

(*1) Rated Voltage Classification

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

(*2) exclude the rain cover dimension

(*3) 60Hz/No load (LwA)

(*4) 60Hz/No load at 7m

▲NES220EM

▲NES300EH

▲NES610SM

Silent Models

	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
	110	138	138	165	215	242	297	315	385	440	495	550	582	641	735	800
	②Dual Voltage															
							4									
							80% Lagging									
							Brushless Alternator, 3-Phase,4-Wire									
	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		6-114×130		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
	21	26	26	32	39	47	56	69	73	91	97	115	108	127	135	165
	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 × 2		95D31R × 2		150F51 × 2		150F51 × 2		180G51 × 2		180G51 × 2		180G51 × 2		180G51 × 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 (4,790)		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	

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 W04D-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

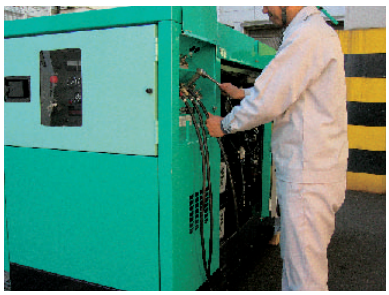
(*2) 60Hz/No load (LwA)

(*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.



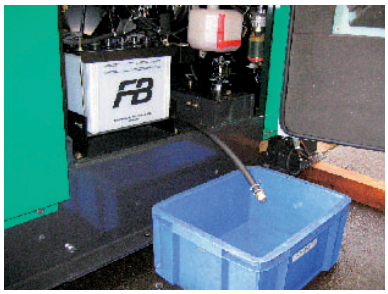
Easy Connection

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.

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.

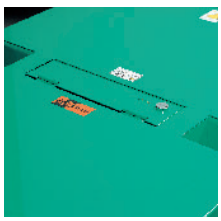
3 Energy Saving Remote Control

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

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	25EI3	25EAI2	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.

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

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 Genarator 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 preceeding 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-△) motor sequentially

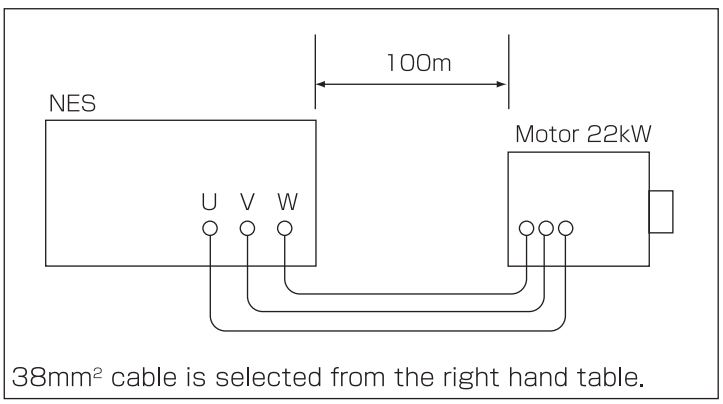
Motor Capacity (kW)		7.5	11	19	7.5+11+19
Generator Capacity (kVA)	Table 1	11.0	16.2		11.0+16.2+41.4 =68.6
	Table 2			41.4	

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.



38mm² cable is selected from the right hand table.

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

NIPPON SHARYO, LTD.

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

80 Ryucho, Narumi-cho, Midori-ku, Nagoya, 458-8502, Japan
Tel : +81−52−623−3529　Fax : +81−52−623−4349

●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)