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MANUALE DI USO E MANUTENZIONE

MANUEL D'UTILISATION ET D'ENTRETIEN  
USE AND MAINTENANCE MANUAL

ANLEITUNG FÜR GEBRAUCH UND WARTUNG  
MANUAL DE USO Y MANTENIMIENTO

INSTRUÇÕES DE UTILIZAÇÃO E DE MANUTENÇÃO  
ADVIEZEN VOOR GEBRUIK EN ONDERHOUD

BRUGERVEJLEDNING OG VEDLIGEHOLDELSESVJLEDNING  
BRUK-OG VEDLIGEHOLDSANVISNING  
BRUKSANVISNING OCH SKÖTSEL

ΟΗΓΕΣ ΧΡΗΣΗΣ ΚΑΙ ΣΥΝΤΗΡΗΣΗΣ  
НАУЧТО-ЈА НУОЛТО-ОНЈЕ

ИНСТРУКЦИЮ ПО ИСПОЛЬЗОВАНИЮ И  
ТЕХНИЧЕСКОМУ ОБСЛУЖИВАНИЮ

**PORTABLE GENERATOR**

Cod. G85337 Rev.12



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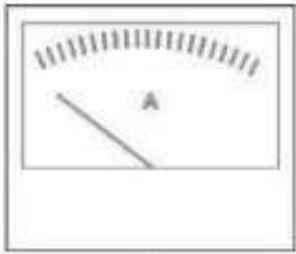
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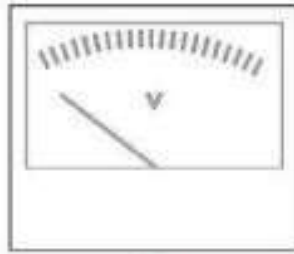
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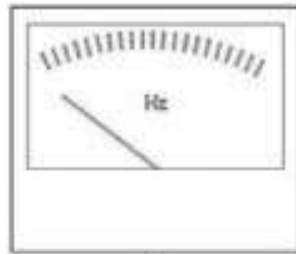
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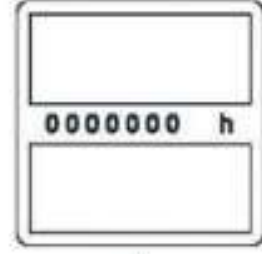
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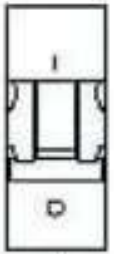
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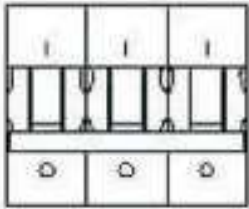
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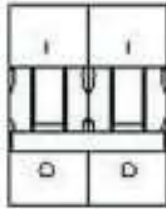
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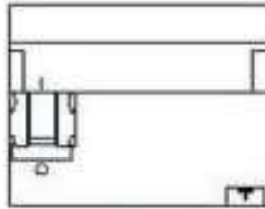
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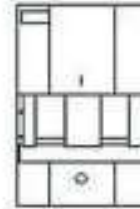
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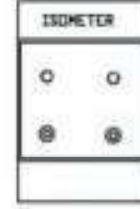
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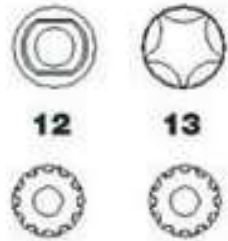
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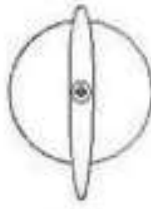
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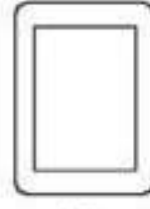
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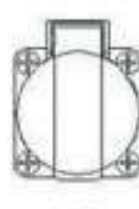
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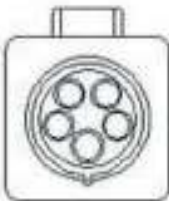
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Generator			
Model	GENERATOR		
Year	2000		
Manufacturing Year	2000	Serial #	XXXXXXXXXX
CO2 Power (kW)	5.4	Power Factor	0.8
Rated Frequency (Hz)	50	Rated Voltage (V)	230
Rated Current (A)	23.5	Weight (kg)	18

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<p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p>	<p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p>	<p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p> <p><b>ATTENZIONE!</b> PRIMA DI USARE QUESTO GENERATORE DEVE ESSERE VERIFICATA LA PRESSIONE DEI PNEUMATICI.</p>
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**▲ DANGER**

Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.

**NEVER** use inside a home or garage, **EVEN IF** doors and windows are open.

Only use **OUTSIDE** and far away from windows, doors, and vents.

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I	FR	GB	D	E	P	NL	DK	N	S	G	SF	RU
1	Amperometro	Ammeter	Amperemeter	Amperímetro	Amperímetro	Ampèremeter	Amperemeter	Ampere-måler	Ampere-mätare	Ампероμετρο	Virtamittari	Амперметр
2	Voltmetro	Voltmeter	Voltmeter	Voltímetro	Voltímetro	Voltmeter	Voltmeter	VoltmÅLER	Voltmätare	Βολτομετρο	Voltimittari	Вольтметр
3	Frequenziometro	Frequency meter	Frequenzmesser	Frecuenciímetro	Frequenciímetro	Frequentíemeter	Frekvensmåler	Frekvensmåler	Frekvens-mätare	Μετρητής Συχνότητας	Taajuusmittari	Частотомер
4	Contaore	Hour meter	Betriebsstundenzähler	Contador	Contador de horas	Urenteller	Timetæller	Teller	Räkneverk	Ορομετρητής	Tuntilaskuri	Счетчик часов
5	Bobina a lancio di corrente	Current discharge coil	Startstromspule	Bobina de disparo	Bobina a impulso de corrente	Stroomstartspoel	Strømvikling	Strømforsyningsspole	Strömforsörjningspole	Πηνίο παροχής ρεύματος	Virran syötökela	Катушка с передачей тока
6-7	Interruttore Magnetotermico	Thermal cut-out switch	Magnetothermischer Schalter	Interrupor Magnetotérmico	Disjuntor	Magnetothermische schakelaar	Automatisk udkobling	Magnetisk termisk bryter	Magnetisk termisk strömbrytare	Μαγνητοθερμικός διακόπτης	Ylivirtasuojakytkin	Термомангнитный выключатель
8-9	Relé Differenziale	Differential relay	Differentialrelais	Relé Diferencial	Relé diferencial	Differentieelrelais	Differentialrelæ	Differensial-relé	Differential-relä	Διαφορικό ρελέ	Välitysvärel	Дифференциальное реле
10	Controllore d'isolamento	Insulation controller	Isolationskontrollvorrichtung	Controlador de aislamiento	Controlador de aislamiento	Isometer	Isoleringskontrolanordning	Isolerings-kontroll	Isolerings-kontroll	Ελεγκτής μόνωσης	Eristyksen tarkistin	Изоляционный контроллер
11	Interruttore a chiave	Key switch	Schlüsselschalter	Interrupor con llave	Interruptor de chave	Sleutelschakelaar	Kontakt med nogle	Nyckel-strömbrytare	Nyckel-strömbrytare	Διακόπτης κλειδι	Katkaisuavain	Ключевой переключатель
12	Disgiuntore Termico	Thermal circuit breaker	Thermo-Auftrenner	Disyuntor Térmico	Disjuntor térmico	Thermische beveiliging	Termisk adskiller	Termisk frakopler	Termisk frånkopplare	Θερμικός διακόπτης ασφαλείας	Lämpörajoitin	Термовыключатель
13	Fusibile di protezione Carica Batteria	Battery charger protection fuse	Sicherung Batterieladegerät	Fusible de protección Carga Batería	Fusível protecção carregador bateria	Zekering bescherming acculader	Sikring Batterilader	Sikeimf for batterilader	Skyddsåsak-ring for batteriladning	Ασφάλεια προστασίας φορτιστή μπαταρίας	Varmistusulake Akun lataus	Плавкий предохранитель зарядного устройства батареи
14	Dispositivo Carica Batteria	Battery charger device	Vorrichtung Batterieladegerät	Dispositivo Carga Batería	Dispositivo cargador de batería	Acculader	Batterilade-anordning	Batterilader	Batteriladningsenhet	Συσκευή φορτιστή μπαταρίας	Акун latauslaite	Зарядное устройство аккумуляторной батареи
15	Commutatore di Tensione Y/Δ	Voltage controller Y/Δ	Spannungsumschalter Y/Δ	Commutador de Tension Y/Δ	Comutador de tensão Y/Δ	Spanningschakelaar Y/Δ	Spændingsomstiller Y/Δ	Spennings-kopler Y/Δ	Spänningsomkopplare Y/Δ	Μεταλλαστήρας τάσης Y/Δ	Jännitemuunnaja Y/Δ	Переключатель напряжения Y/Δ
16	Pulsante ON/OFF	ON/OFF button	Taste ON/OFF	Pulsador ON/OFF	Botão ON/OFF	Knop ON/OFF	ON/OFF knap	TILL/FRAU tast	AV/PÅ-knapp	Κουμπι ON/OFF	Painike ON/OFF	Кнопка Вкл./Выкл.
17	Spis presenza Tensione	Voltage indicator light	Kontrolllampe Spannung ein	Luz de aviso Tension dada	Indicador luminoso presença de tensão	Controlelampje spanning aanwezig	Signallampe spænding til stede	Strømspenningsindikator	Strömspänningsindikator	Λυχνία ενδείξης τάσης	Jännitteen merkivalo	Световой сигнал наличия напряжения
18	Presa Schuko	Schuko socket	Schuko-Dose	Toma Schuko	Tomada Schuko	Contactstop Schuko	Schuko-stik	Schuko-uttak	Schuko-uttak	Υποδοχή σουκου	Pistoke Schuko	Розетка "Шуко"
19	Presa 2P+T	2P+T socket	Steckdose 2P+T	Toma 2P+T	Tomada 2P+T	Contactstop 2P+T	Stik 2P+J	Uttak 2P + Jordeledning	Uttag 2P + Jord	Υποδοχή 2P+T	Pistoke 2N+M	Розетка 2P+T
20	Presa 3P+T	3P+T socket	Steckdose 3P+T	Toma 3P+T	Tomada 3P+T	Contactstop 3P+T	Stik 3P+J	Uttak 3P + Jordeledning	Uttag 3P + Jord	Υποδοχή 3P+T	Pistoke 3N+M	Розетка 3P+T
21	Presa 3P+N+T	3P+N+T socket	Steckdose 3P+N+T	Toma 3P+N+T	Tomada 3P+N+T	Contactstop 3P+T	Stik 3P+N+J	Uttak 3P+N+J ordeledning	Uttag 3P+N+Jord	Υποδοχή 3P+N+T	Pistoke 3N+N+M	Розетка 3P+N+T
22	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Dual Voltage	Двойное напряжение



## **LI** LISTA TARGHETTE:

- 23 VIETATO FUMARE E USARE FIAMME LIBERE:** durante le procedure di rifornimento e di manutenzione è vietato fumare e usare fiamme libere, causerebbero danni alla macchina e alle persone.
- 24 PASSED:** indica che la macchina ha passato tutti i test a fine linea di produzione.
- 25 LIVELLO RUMORE:** indica il livello di rumore garantito (secondo quanto prescritto dalla direttiva 2000/14/ce).
- 26 ATTENZIONE PERICOLO DI FOLGORAZIONI:** non effettuare manutenzione nelle zone in prossimità di cavi elettrici senza aver prima spento la macchina, si potrebbero avere conseguenze mortali.
- 27 CONTATTO DI MESSA A TERRA:** in prossimità di questo simbolo vi è posizionato il morsetto per il collegamento equipotenziale delle masse e/o la messa a terra (mediante apposito dispersore) del gruppo.
- 28 TARGA MATRICOLA:** indica il nome commerciale, la matricola, l'anno di produzione e le caratteristiche principali della macchina.
- 29 ATTENZIONE MACCHINA SENZA OLIO:** indica che la macchina uscita dalla fabbrica è senza olio quindi prima di poterla utilizzare è necessario riempire il serbatoio attenendosi alle istruzioni riportate sul libretto del motore.
- 30 ATTENZIONE PARTI CALDE:** indica che in prossimità di questa vi sono parti che possono avere temperature elevate.
- 31 USARE SOLO BENZINA:** utilizzare, come carburante, unicamente benzina senza piombo. Altri tipi di carburanti causerebbero danni irreparabili al motore.
- 32 USARE SOLO DIESEL:** utilizzare, come carburante, unicamente gasolio. Altri tipi di carburanti causerebbero danni irreparabili al motore.
- 33 ATTENZIONE GAS DI SCARICO:** Il gas di scarico è dannoso. Non utilizzare il generatore in un ambiente non ventilato.
- 34 ATTENZIONE:** Arrestare il motore prima del rifornimento di carburante.

## **FR** LISTE PLAQUETTES:

- 23 INTERDIT DE FUMER ET D'UTILISER DES FLAMMES NUES:** Pendant les procédures de ravitaillement et d'entretien, il est interdit de fumer et d'utiliser des flammes nues, qui pourraient provoquer des dommages à la machine et aux personnes.
- 24 PASSED:** Indique que la machine a passé tous les essais en fin de chaîne de production.
- 25 NIVEAU DE BRUIT:** Indique le niveau de bruit garanti (selon les prescriptions de la Directive 2000/14/CE).
- 26 ATTENTION DANGER D'ÉLECTROCUTION:** Ne pas effectuer l'entretien à proximité de câbles électriques sans avoir auparavant éteint la machine; il peut y avoir danger de mort.
- 27 CONTACT DE BRANCHEMENT À LA TERRE:** À côté de ce symbole, se trouve la borne PE pour le branchement équipotentiel des masses et/ou la mise à la terre (avec le déperditeur spécial) du groupe.
- 28 PLAQUE IMMATRICULATION:** Indique le nom commercial, le numéro de série, l'année de production et les principales caractéristiques de la machine.
- 29 ATTENTION MACHINE SANS HUILE:** Indique que la machine, à la sortie de l'usine, est sans huile; avant de pouvoir l'utiliser, il faut donc remplir le réservoir en suivant les instructions indiquées sur le livret du moteur.
- 30 ATTENTION PIÈCES CHAUDES:** Indique qu'à proximité se trouvent des pièces pouvant atteindre une température élevée.
- 31 UTILISER UNIQUEMENT DE L'ESSENCE:** Comme carburant, utiliser uniquement de l'Essence sans plomb. D'autres types de carburants provoqueraient des dégâts irréparables au moteur.
- 32 UTILISER UNIQUEMENT DU GASOLE:** Comme carburant, utiliser uniquement du gasole. D'autres types de carburants provoqueraient des dégâts irréparables au moteur.
- 33 ATTENTION:** Le gaz d'échappement est toxique. Ne pas opérer la machine dans une salle non aérée.
- 34 ATTENTION:** Arrêter le moteur avant d'effectuer le réapprovisionnement en carburant.

## **GB** DATA PLATE LIST:

- 23 NO SMOKING OR OPEN FLAMES:** During refuelling and maintenance operations smoking and the use of open flames is forbidden, as it may cause damages and injuries.
- 24 PASSED:** Indicates that the machine has passed all end of production line tests.
- 25 NOISE LEVEL:** Indicates the guaranteed noise level (as prescribed by Directive 2000/14/CE).
- 26 WARNING!** danger of electrocution Do not carry out maintenance in areas near electrical cables without first turning the machine off, it may lead to death.
- 27 GROUNDING CONTACT:** The PE clamp for the equipotential connection of the masses and/or grounding (by special ground plate) of the unit is located near this symbol.
- 28 NUMBER PLATE:** Indicates the market name, number, and year of manufacture and main specifications of the machine.
- 29 WARNING! MACHINE WITHOUT OIL:** Indicates that the factory-delivered machine is without oil and that the tank should be filled before use according to the instructions in the engine manual.
- 30 WARNING! HOT PARTS:** Indicates that parts nearby may be very hot.
- 31 USE PETROL ONLY:** Use only unleaded petrol for fuel. Other types of fuel will cause irreparable damage to the engine.
- 32 USE DIESEL FUEL ONLY:** Use only diesel fuel. Other types of fuel may cause irreparable damage to the engine.
- 33 WARNING:** Exhaust gas is poisonous. Do not operate in an unventilated room.
- 34 WARNING:** Stop the engine before refueling.

## **D** LISTE SCHILDER:

- 23 RAUCHEN UND OFFENES FEUER VERBOTEN:** während der Vorgänge zum Tanken und zur Wartung sind Rauchen und offenes Feuer verboten, da dadurch Schäden an der Maschine und Personenschäden verursacht werden.
- 24 PASSED:** Zeigt an, daß die Maschine alle Tests am Ende der Produktionsstraße durchlaufen hat.
- 25 GERÄUSCHPEGEL:** zeigt den garantierten Geräuschpegel an (gemäß der Vorgaben der Richtlinie 2000/14/EWG).
- 26 ACHTUNG STROMSCHLAGGEFAHR:** die Wartung in den Bereichen um die Stromkabel darf erst nach Ausschalten der Maschine vorgenommen werden, die Folgen könnten sonst tödlich sein.
- 27 ERDUNGSKONTAKT:** Im Umfeld dieses Symbols befindet sich eine PE-Klemme für den äquipotentiiellen Anschluß der Massen und/oder der Erdung (über den entsprechenden Erdschluss) der Gruppe.
- 28 SCHILD DER SERIENUMMER:** Gibt den Handelsnamen, die Seriennummer, das Baujahr und die wichtigsten Eigenschaften der Maschine an.
- 29 ACHTUNG MASCHINE OHNE ÖL:** Gibt an, daß in der aus der Fertigung kommenden Maschine kein Öl vorhanden ist, d.h. bevor diese in Betrieb genommen wird, muß der Tank unter Beachtung der im Handbuch des Motors aufgeführten Hinweise gefüllt werden.
- 30 ACHTUNG HEISSE TEILE:** Gibt an, daß sich im Umfeld dieses Symbols Teile befinden, die hohe Temperaturen aufweisen können.
- 31 NUR BENZIN VERWENDEN:** Als Kraftstoff sollte einzig bleifreies Benzin verwendet werden. Andere Kraftstoffe würden irreparable Schäden am Motor verursachen.
- 32 NUR DIESEL VERWENDEN:** Als Kraftstoff sollte einzig Diesel verwendet werden. Andere Kraftstoffe würden irreparable Schäden am Motor verursachen.
- 33 WARNING:** Exhaust gas is poisonous. Do not operate in an unventilated room.
- 34 WARNING:** Stop the engine before refueling.

## **E** LISTA DE PLACAS:

- 23 PROHIBIDO FUMAR Y USAR LLAMAS LIBRES:** Durante los procesos de abastecimiento y de mantenimiento, está prohibido fumar y utilizar llamas libres, que causarían daños a máquinas y personas.
- 24 PASSED:** Indica que la máquina ha superado todas las pruebas al final de la línea de producción.
- 25 NIVEL DE RUIDO:** Indica el nivel de ruido garantizado (conforme a las prescripciones de la Directiva 2000/14/CE).
- 26 ATENCIÓN:** peligro de electrocución: No efectuar operaciones de mantenimiento en proximidad de cables eléctricos sin antes haber apagado la máquina, se corre peligro de muerte.
- 27 CONTACTO DE TOMA DE TIERRA:** En las cercanías de este símbolo se halla el borne PE para la conexión equipotencial de las masas y/o la toma de tierra (mediante su correspondiente placa de dispersión) del grupo.
- 28 PLACA MATRICULA:** Indica el nombre comercial, la matrícula, el año de fabricación y las características principales de la máquina.
- 29 ATENCIÓN MÁQUINA SIN ACEITE:** Indica que la máquina sale de fábrica sin aceite y que, por consiguiente, antes de poder utilizarla es necesario llenar el depósito siguiendo las instrucciones del manual del motor.
- 30 ATENCIÓN PARTES CALIENTES:** Indica que en sus cercanías hay partes que pueden estar a elevadas temperaturas.
- 31 USAR SÓLO GASOLINA:** Utilizar como carburante únicamente Gasolina sin plomo. Otros tipos de carburantes causarían daños irreparables al motor.
- 32 USAR SÓLO DIESEL:** Utilizar como carburante únicamente gasóleo. Otros tipos de carburantes causarían daños irreparables al motor.
- 33 ATENCIÓN:** Los gases de escape son venenosos. No lo haga funcionar en un lugar mal ventilado.
- 34 ATENCIÓN:** Apague el motor antes de reaprovisionar combustible.

## **P** LISTA PLACAS:

- 23 PROIBIDO FUMAR E USAR CHAMAS LIVRES:** Durante os procedimentos de abastecimento e manutenção é proibido fumar e usar chamas livres, pois causariam danos à máquina e às pessoas.
- 24 PASSED:** Indica que a máquina passou todos os testes no fim da linha de produção.
- 25 NÍVEL RUIDO:** Indica o nível de ruído garantido (conforme quanto prescrito pela Directiva 2000/14/CE).
- 26 ATENÇÃO PERIGO DE ELECTROCUSSÃO:** não efectuar manutenção nas áreas próximas de cabos eléctricos sem ter antes desligado a máquina, poderia haver consequências mortais.
- 27 CONTACTO DE LIGAÇÃO DE TERRA:** perto deste símbolo está posicionado o borne PE para a ligação equipotencial das massas e/ou a ligação de terra (mediante específico descarregador estático) do grupo.
- 28 PLACA MATRÍCULA:** Indica o nome comercial, o número de matrícula, o ano de fabricação e as características principais da máquina.
- 29 ATENÇÃO MÁQUINA SEM ÓLEO:** Indica que a máquina que saiu da fábrica está sem óleo, portanto antes de poder utilizá-la é necessário encher o tanque seguindo as instruções indicadas no manual do motor.
- 30 ATENÇÃO PEÇAS QUENTES:** Indica que perto desta placa ha partes que poderiam ter temperaturas elevadas.
- 31 USAR SOMENTE BENZINA:** Utilizar, como carburante, unicamente Benzina sem chumbo. Outros tipos de carburante causariam danos irreparáveis ao motor.
- 32 USAR SOMENTE DIESEL:** Utilizar, como carburante, unicamente gasóleo. Outros tipos de carburante causariam danos irreparáveis ao motor.
- 33 ATENÇÃO:** Gases de exaustão tóxicos. Não use em sala mal ventilada.
- 34 ATENÇÃO:** Desligue o motor antes de reabastecer.

## **NL** LIJST PLAATJES:

- 23 ROKEN EN GEBRUIK VAN OPEN VUUR VERBODEN:** Tijdens bevoorrading en onderhoud is roken en open vuur niet toegestaan, omdat dit schade aan de machine en aan personen zou toebrengen.
- 24 PASSED:** Geeft aan dat de machine alle tests aan het eind van de productielijn heeft doorstaan.
- 25 GELUIDSNIVEAU:** Geeft het gegarandeerde geluidsniveau aan (volgens de voorschriften van de Richtlijn 2000/14/EG).
- 26 PAS OP SPANNINGSGEVAAR:** Geen onderhoud uitvoeren in de buurt van elektrische kabels zonder eerst de machine te hebben uitgeschakeld, dit kan levensgevaarlijke gevolgen hebben.
- 27 AARDINGSCONTACT:** In de buurt van dit symbool bevindt zich de PE klem voor de equipotentiale massaverbinding en/of de aarding (via speciaal aardingsbed) van de groep.
- 28 TYPEPLAATJE:** Vermeldt de handelsnaam, het serienummer, het bouwjaar en de belangrijkste kenmerken van de machine.
- 29 PAS OP MACHINE ZONDER OLIE:** Geeft aan dat de machine zonder olie uit de fabriek is gekomen. Alvorens hem te kunnen gebruiken moet dus het reservoir met olie worden gevuld volgens de aanwijzingen in het instructieboekje van de motor.
- 30 PAS OP HETE ONDERDELEN:** Geeft aan dat zich in de buurt van dit plaatje onderdelen bevinden die hoge temperaturen kunnen bereiken.
- 31 GEBRUIK ALLEEN BENZINE:** Gebruik uitsluitend loodvrije benzine als brandstof. Andere soorten brandstof zouden onherstelbare schade aan de motor veroorzaken.
- 32 GEBRUIK ALLEEN DIESEL:** Gebruik alleen dieselolie als brandstof. Andere soorten brandstof zouden onherstelbare schade aan de motor veroorzaken.
- 33 PAS OP:** Uitlaatgassen zijn giftig. Niet gebruiken in ongeventileerde ruimte.
- 34 PAS OP:** Voor brandstof tanken de motor stoppen.

## **GB CONTENTS (1.1):**

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## **INTRODUCTION (2.1):**

Thank you for purchasing one of our generators. We would like to draw your attention to a few points concerning this manual:

- This manual gives useful indications for the correct use and maintenance of the generator set to which it refers: it is therefore indispensable to pay the fullest attention to all those paragraphs that illustrate the simplest and safest way of using the generator.
- This manual is to be considered as an integral part of the generator and must be included at the moment of purchase.
- This publication may not be reproduced, either totally or in part, without written authorization from the makers.
- All information shown hereafter is based on the data available at the moment of printing; the makers reserve the right to make modifications to their products at any time, without warning and without incurring sanctions. You are therefore advised to check frequently for any updates.

KEEP FOR FUTURE REFERENCE

USE OF THE GENERATOR

THIS GENERATING PLANT IS DESIGNED TO SUPPLY  
THREE PHASE AND/OR SINGLE PHASE ELECTRICAL POWER.  
NO OTHER APPLIANCES OTHER THAN THOSE INDICATED  
SHOULD BE USED.



## **SAFETY INSTRUCTIONS (4.1):**

**ATTENTION: if the following instructions are not fully observed, injury to persons, animals and/or things could result, and the Manufacturer does not accept responsibility for improper use.**

- Do not run the generator in closed work areas: the engine produces carbon monoxide and other harmful gases detrimental to the health of persons who work with it; make sure that the generator is well ventilated.
- Direct combustion exhaust gas outside the machine room or a reasonable distance away from the workplace and personnel. Use piping or other extraction methods.
- The generator must only be run on a horizontal surface to guarantee optimum oil and fuel flow to the engine; if it is not possible to run it on a horizontal surface, the user must provide the necessary means to anchor and align the engine to ensure the machine's stability.
- If the generator is to be used during rain or snow, make sure that it is well and firmly sheltered.
- Always keep children away from the generator when in use; remember that, even after being shut off, the engine will remain at a high temperature for about 1 hour. In the areas where the exhaust is located, the flexible tube and the engine are subject to high temperatures and could possibly cause severe burns if touched.
- Maintenance and servicing of the equipment must not take place while the generator is operating; always switch off the engine.
- Refuelling and topping up with oil must be done when the engine is not running; remember that the engine remains hot for about 1 hour after it is turned off.
- It is vital to be aware of the functions and controls of the generator: do not allow any unauthorized persons to use the machine.
- Improper use of the machine should be avoided: such as, using the engine to heat the surrounding atmosphere etc.
- Do not allow any unauthorized persons to use the machine; to ensure the generator cannot operate, block the system (remove the starter key, close and lock the door of the switchboard).
- The machine does not need to be in a specially lighted area. However provide adequate lighting to comply with applicable working norms.
- Do not remove the protection devices and do not use the machine without adequate protection (sides and casing) or the use may be at risk.
- Should it be necessary to remove the protection devices (for maintenance and servicing), this operation should be done with the generator switched off and only by specialized persons.
- Do not use the machine in an explosive atmosphere.
- In the case of an emergency do not use water to extinguish a fire, use only the correct type of equipment (a powder loaded fire extinguisher, etc.).
- Whenever it is necessary to work in close proximity to the machine, sound muffler should be used (head muffs, ear plugs, etc.).

**ATTENTION: Avoid any direct bodily contact with fuel, motor oil or battery acid. In case of contact with the skin wash with water and soap and rinse thoroughly; do not use organic solvents. In case of contact with the eyes, wash with water and soap and rinse thoroughly. In case of inhalation and swallowing, consult a medical practitioner.**

## **PRELIMINARY CHECKS (5.1):**

- Make sure these operations are carried out with the generator placed on a horizontal and stable surface.

- Oil is the most important element influencing the efficiency and long life of the engine. In the use and maintenance manual are shown details of the type of oil to use and the correct oil level for this generator.

**ATTENTION: Running the engine with insufficient oil could cause serious damage.**

- Check the fuel level: use clean fuel free of water.

**ATTENTION: Fuel is highly flammable and explosive under certain conditions.**

**Refuel in a well ventilated area with the engine switched off. During refueling do not smoke and do not approach the equipment with an open flame.**

Do not overfill the tank (do not fill up to the cap), because vibration from the running engine could cause fuel spillage. Pay attention not to spill fuel while filling the tank. Ensure that the cap is correctly screwed down after filling. If fuel has been spilt, ensure that the area is completely dry before switching on the engine. Avoid any bodily contact with the fuel and do not inhale the vapour. It is important to

keep the fuel in a place inaccessible to children. The fuel fumes are highly inflammable.

- Check the air filter: make sure that it is in good conditions and free from dust and dirt. To reach the filter consult the engine user's and maintenance manual.

**ATTENTION: do not use the generator without the air filter: the life of the engine and the generator will be reduced!**

- Activate the battery: fill the compartments to their maximum level with a 30/40% sulphuric acid solution and wait at least two hours before using.

**ATTENTION: do not touch the acid and do not smoke or use naked lights: battery fumes are highly inflammable. Keep the acid out of reach of children.**

## **STARTING THE GENERATOR (6.1):**

Before starting the engine it is necessary to:

- Ensure that no appliance is plugged into the generator.
- For the petrol engine version use the choke for cold starts.
- For generators with electrical starters turn the key to the "START" position and release it as the machine starts.
- To start the recoil operated generators, pull the cord handle until resistance is felt, then pull energetically.

**ATTENTION: Do not let the recoil handle rewind quickly. Guide it to prevent damage to the automatic winder.**

- When the engine is running, switch off the choke.
- At this point the unit is ready for use.

NOTE: If the generator is used at high altitudes or temperatures, the air-fuel mix ratio may be too rich; this will cause higher consumption and lower performance. Check the effective power of the generator by means of the following correction factors:

TEMPERATURE: Power drops an average of 2% every 5 degrees centigrade above a temperature of 20 degrees centigrade.

ALTITUDE: Power drops an average of 1% every 100 meters a.s.l. Above an altitude of 2000 m, contact the service centre of the engine's manufacturing company to reset the combustion mixture if necessary.

## **USING THE GENERATOR (7.1):**

NOTE: The generator, built to current standards, has been designed to satisfy a very wide range of applications.

It should be remembered when using the machine, that every application is subject to exact electrical, accident prevention and sanitary standards; for this reason the generator should be considered as an integral part of the complete installation, and should be designed, tested and approved by qualified technicians and/or companies.

- In order to avoid electrical accidents, all connections to the distribution panel must be carried out by qualified technicians. Incorrect connections can harm people and damage the generator.
- Protection against indirect contacts: all the generators, when functioning normally, use the principle of electrical separation; however, they can be supplied with various protection options (differentiator, isometer) by the manufacturer on specific request, or they can be protected in the same way during installation by the user.

It is important therefore, to follow the instructions as below:

1) Standard generators: protected by electrical separators. This equipment has a thermic protection device and/or a magnetothermic device to protect against a surge of current, overloading and short-circuiting.

In these cases the Generator should **under no circumstances** be earthed using the terminal "PE" or with any other part of the generator.

2) Generator with optional switchboard (or with other devices installed by the user): must be protected using a circuit breaker which automatically cuts off the power supply. It has heat overload protection devices and/or magnetothermic combinations with differential circuit breakers or trip switches. In this case the generator must be connected to an earth leakage unit using the terminal "PE", and using as conductor a yellow - green cable of suitable size.

IMPORTANT: In the event of the user installing differential circuit breakers, it is important for its correct functioning that:

A) On single-phase generators the neutral point that corresponds to the joint of the two main coils is also earthed.

B) On three-phase generators the neutral point that corresponds to the wye-centre in the case of a wye connection is also earthed. In the case of a delta connection it is not possible to install a differential switch.

- The generator is preset for grounding the masses; a special screw, marked with the symbol PE, allows all the metal parts of the generator set to be connected to a ground plate.
- Do not connect to the generator any appliances with unknown electrical specifications or with specifications different from those of the generator (i.e. different voltages and/or frequencies).
- The electrical circuit of the generator is protected by a switch, which is either thermomagnetic, thermomagnetic-differential or thermic; overloading and/or a short circuit will cut the flow of current immediately. To reset, disconnect all appliances, check the cause of the short-circuit and/or overload and switch on.
- If using the generator as battery charger, place the battery at a distance of 1 m from the unit, making sure that the filling plugs are removed from the cells. Take care to observe the battery polarities, incorrect connection of positive and negative poles could cause the battery to explode.

**ATTENTION: During charging, the battery gives off inflammable vapour. Therefore observe the maximum caution during charging and keep children far away.**

- With a star-delta switch the following options are available:

THREE PHASE 400 V (full design load)

SINGLE PHASE 230 V (1/3 of design load)

THREE PHASE 230V (full design load)

SINGLE PHASE 230 V (2/3 of design load)

When set on "O" all power points are disconnected.

- Before setting the switch to any of the above, ensure that no appliances are connected to the generator. Be sure to set the switch to the correct current as shown on the tag, in order to avoid damages to the appliances.

- When the generator is in use, do not place any objects on the frame or directly on the engine: any foreign bodies may impair performance.

- Do not hinder the normal vibrations that the generator makes when in use. The silent-blocks are of an adequate size to work properly.



## **STOPPING THE GENERATOR (8.1):**

Switch off or disconnect all the accessories powered by the generator: then stop the engine after letting it idle for 2-3 minutes to cool down; to stop the generator turn off the switch.

With electrically started generators, turn the key to the "OFF" position.

ATTENTION: the engine will remain hot even after being switched off: make sure the generator is well ventilated even after engine shut down.

## **MAINTENANCE (9.1):**

**As regards this important paragraph please carefully consult the use and maintenance manual published by the makers of the engine: if you spend some time now you will save money later!**

**ATTENTION: WHEN REQUESTING SPARE PARTS CHECK YOUR REQUIREMENTS AGAINST THE SCHEDULE IN THIS MANUAL.**

- Normal battery, alternator and frame maintenance operations are reduced to a minimum: keep the battery terminals well greased and top up with distilled water when the plates are uncovered.
- No special maintenance operations are required for the commutator system – brush holder – brushes – as they are designed to guarantee reliable and prolonged service.
- When requesting spare parts, as shown in the attached current Manual, it is essential that they are quoted in sequential order, supplying the code number of the piece required, the registered number of the generator, its commercial name and the date of construction (see Appendix of the list of spare parts attached to the current Manual).

*NOTE: In order to observe the Directive 2000/14/CE, it is recommended that periodical checks (at least every 6 months) be carried out on the components that may be subject to wear and tear during normal running conditions, and that may as a consequence cause an increase in machine noise. The following is a list of components that should be checked:*

Exhaust pipe

If a problem arises in one or more of these components, the nearest authorized service centre should be contacted.

Silent-Blocks

Air filter

Mounting of mechanical parts

Engine and alternator fans

Good working order of the machine

Sound absorbing and sound insulating materials (where present)

NOTE: When disposing of used oil or residual fuel, respect the environment. We suggest collecting waste product in drums for delivery at a later date to a nearby Service Station. Do not deposit oil and residual fuel into the earth or into unsuitable receptacles.

NOTE: Bad operation of the generator due to faults in the engine (oscillation, low number of revs, etc.) is of exclusive competence of the departments of the engine makers' customer service, both during and after the warranty period. Tampering or intervention carried out by personnel unauthorized by the makers will invalidate the conditions of guarantee.

Malfunction of the generator due to faults in the electrical circuits and in the frame is of exclusive competence of the makers' customer service department. Repairs carried out by unauthorized personnel, substitution of components with unoriginal spare parts and tampering with the generator will invalidate the conditions of warranty.

The makers do not accept any liability arising out of faults or accidents due to neglect, incapacity or installation by not qualified technicians.

## **CLEANING (10.1):**

Turn off the machine and wait until the hot parts have cooled down before proceeding.

It is recommended that the machine not be cleaned with jets of water or inflammable products. Use special products or a damp cloth if necessary; in the latter case pay attention to the electrical components.

Before turning the machine back on make sure that it is completely dry.

## **TRANSPORTATION (11.1):**

- It is a good rule during transportation to firmly fix the generator so that it cannot turn over; remove all fuel and make that acid or fumes do not leak from the battery (if present).

Check the overall weight of the machine to be transported by road.

Under no circumstances should the generator be started while inside a truck.

## **STORAGE (12.1):**

If you do not intend to use the generator for more than thirty days, it is advisable to completely drain the fuel tank.

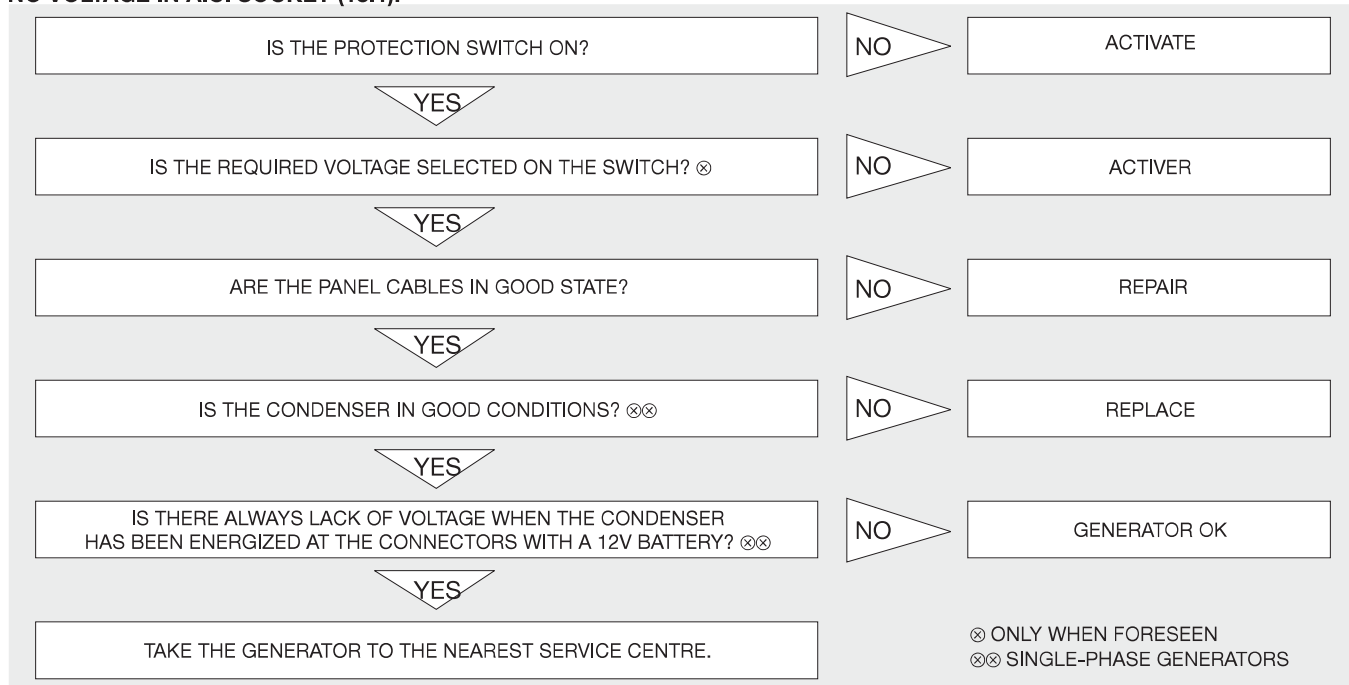
For petrol engines it is important to drain also the carburetor float chamber: petrol left in contact with components for a long period will cause them to deteriorate due to the rubbery deposits typical to this fuel.

**ATTENTION: Petrol is extremely inflammable and explosive under certain conditions. Avoid smoking and sparks in the vicinity.**

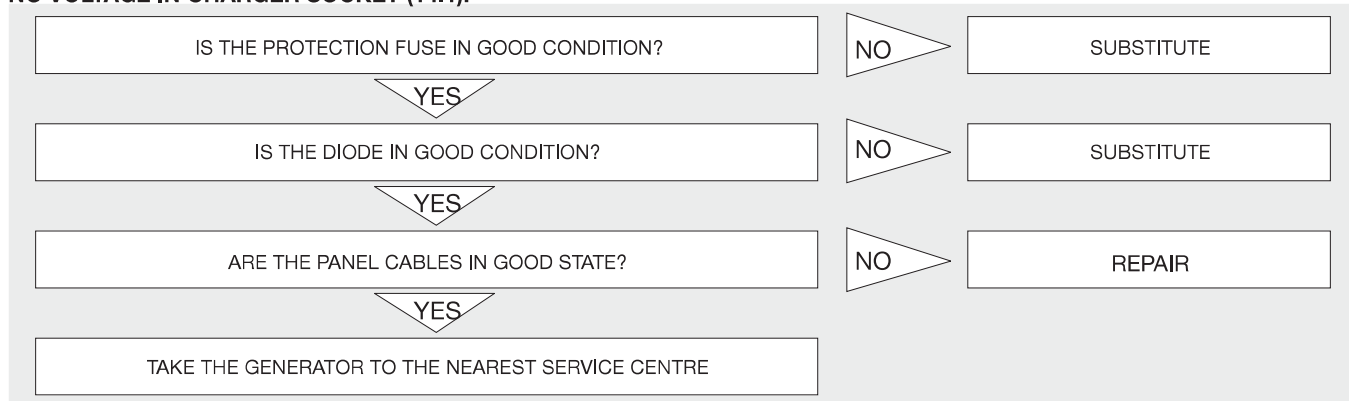
- Substitute the engine with oil if it is finished: when the engine is not in use, it could damage the thermal group and the connecting rods.
- Clean the generator accurately, disconnect the battery cables (if present) and cover well to protect from dust and damp.

## TROUBLE SHOOTING:

### NO VOLTAGE IN A.C. SOCKET (13.1):



### NO VOLTAGE IN CHARGER SOCKET (14.1):



### THE ENGINE DOES NOT START (15.1):

