

when presented in the context of the remaining limitations of the claim (e.g. “for delivery through the gaseous fuel line”), *would enable engine operation*. Firman’s proposal, “pressure at which the engine operates,” is confusing because it erroneously suggests that there is one such pressure, or worse, that the pressure is in reference to the *engine* as opposed to the *fuel* being delivered to the engine. The salient condition is any pressure that, when presented for delivery through the gaseous fuel line as claimed, *enables* the engine (or generator) to operate. In the context of the claims, Champion’s plain and ordinary meaning proposal makes sense.¹⁰

The language, “desired pressure . . . to operate the engine” directly contradicts Firman’s proposed construction that replaces the patentee’s choice of language “to operate” with the more restrictive and physically nonsensical phrase “at which.” Accordingly, the Court should adopt the claim language’s plain and ordinary meaning, which includes “any pressure enabling engine operation.”

H. “prevent[s] the . . . fuel source from coupling . . . and . . . permit[s] the . . . fuel source to couple”

’780 Patent Claims 1 and 8;’985 Patent Claim 6;’654 Patent Claims 1 and 6;’970 Patent Claims 4, 26, and 50;’895 Patent Claims 1 and 14	
Champion’s Proposal	Firman’s Proposal
Plain and ordinary meaning	prevent[s] ... the fuel source from attaching ... and ... allow[s] the ... fuel source to attach

Champion believes this phrase does not require Court intervention. The phrase uses commonly used, simple words. A POSITA would accord this term its plain and ordinary meaning consistent with, and understood in light of, the specification and claim language, which includes to prevent fuel flow and permit fuel flow. [Ex. 3 ¶ 90.] A POSITA would not understand this term in the way Firman proposes, because Firman’s proposed construction is confusing and overly restricts the meaning of “coupled.” Firman changes the word “couple” to “attach.” Given that “coupled” is a term the parties have agreed should

¹⁰ For example: ’985 Patent Claim 1 states, among other things: “. . . gaseous fuel . . . regulated down to a **desired pressure** . . . for delivery through the gaseous fuel line **to operate the generator**.” The other referenced claims have comparable structure with language including “desired pressure . . . to operate the generator.”

be accorded its plain and ordinary meaning,¹¹ creating specialized definitions for the coupling of the fuel source is confusing. [*Id.* ¶ 91.]

Dr. Singhose opines that the plain and ordinary meaning of “coupled” includes two or more components directly or indirectly interacting with each other, for example, physically, electrically, and/or fluidly. [*Id.* ¶¶ 54 n.1, 93.] Restricting “coupled” to mean only “attached” would eliminate the indirectly interacting aspect of the term “coupled.” More specifically, Firman’s proposed construction would completely eliminate fluid coupling, but the specifications clearly teach that fluid coupling could be included in the term “coupled.” [*Id.*] For example, ’780 Patent Col. 5 Ln. 52 – Col. 6 Ln. 31 gives examples showing that “coupled” as used here can relate to the concept of preventing fuel flow and permitting fuel flow, which Firman’s construction contradicts and unnecessarily limits.

Firman’s proposed construction not only walks back its agreement that “coupled” should be accorded its plain and ordinary meaning [n.11, above], but it also creates confusion instead of clarity. The Court should reject Firman’s proposed construction.

VII. DISPUTED TERMS AND PROPOSED CONSTRUCTIONS — TERMS FOR WHICH FIRMAN HAS DISCLOSED EXPERT TESTIMONY

A. “selector switch”

’101 Patent Claims 17 and 18; ’667 Patent Claims 1, 2, 7–8, 10–12, 14, and 18; ’390 Patent Claims 1–4, and 6; ’896 Patent Claims 21–23, 25, 27, 30–31, and 37	
Champion’s Proposal	Firman’s Proposal
Plain and ordinary meaning	a movable barrier whose positioning enables access for a subsequent user selection of only one fuel source ¹²

Much like the “lockout apparatus,” there is no need to construe the term “selector switch” because it has a well-understood plain and ordinary meaning, examples of which are supported in Col. 5 Ln. 37 – Col. 6 Ln. 31 and FIGS. 2–4B of the ’780 Patent. [*See*

¹¹ Champion originally identified the term “couple” (and similar iterations such as couplable, coupled, coupling, etc.) as terms to be construed by the Court. After the Parties met and conferred on the disputed terms, the Parties agreed the Court need not construe the term, thus granting the term its plain and ordinary meaning. *See, e.g., Phillips* 415 F.3d at 1312 (claim terms are presumed to have their plain and ordinary meaning).

¹² Champion objects to Firman’s proposal as untimely disclosed. [*See* ECF 130 at 1 n. 3.]

Ex. 3 ¶¶ 131, 148–150.] Firman’s proposed construction does not merely commit the cardinal sin of claim construction by attempting to rewrite the claim to import limitations from the specification, *the phrases in Firman’s proposed construction do not even appear in the specification*. The specification does not refer to “barrier,” “moveable,” “positioning,” “access,” “subsequent user,” or “action.” [See also *id.* ¶¶ 150, 157 (explaining why “barrier” is confusing).] This entire construction exists only in Firman’s litigation-driven mind, and it is totally untethered to the claim language.

As in *IQRIS*, 130 F.4th at 1004, “the patentee is free to choose a term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope.” Here, as there, “[g]iven the claim language and absence of lexicography or disavowal,” it would be improper to adopt Firman’s proposed construction that improperly imports extraneous limitations into the claims. *Id.*

B. “fuel lockout apparatus”

'780 Claims 1–2, 6, 8–9, and 15; '985 Patent Claim 6	
Champion’s Proposal	Firman’s Proposal
Plain and ordinary meaning	a moveable barrier whose positioning prohibits a subsequent user action necessary to enable a different fuel source ¹³

There is no need to construe the term “fuel lockout apparatus” because it has a well-understood plain and ordinary meaning, examples of which are supported in Col. 5 Ln. 37 – Col. 6 Ln. 31 and FIGS. 2–4B of the '780 Patent. [See Ex. 3 ¶¶ 144–145, 155–157.] Firman’s proposed construction does not merely commit the cardinal sin of claim construction by attempting to rewrite the claim to import limitations from the specification, *the phrases in Firman’s proposed construction do not even appear in the specification*. The specification does not refer to “barrier,” “moveable,” “positioning,” “prohibits,” “subsequent user,” “action,” or “necessary to enable.” [See also *id.* ¶¶ 150, 157 (explaining why “barrier” is confusing).] This entire construction exists only in Firman’s litigation-driven mind, and it is totally untethered to the claim language.

¹³ Champion objects to Firman’s proposal as untimely disclosed. [See ECF 130 at 21 n.22.]

As in *IQRIS*, 130 F.4th at 1004, “the patentee is free to choose a term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope.” Here, as there, “[g]iven the claim language and absence of lexicography or disavowal,” it would be improper to adopt Firman’s proposed construction that improperly imports extraneous limitations into the claims. *Id.*

C. “electro-mechanical valve system”

’034 Claims 11 and 13–14; ’120 Claims 13 and 15	
Champion’s Proposal	Firman’s Proposal
Plain and ordinary meaning	A system of one or more solenoid valves ¹⁴

Here, Firman again commits the cardinal sin by importing the “solenoid” limitation into the claimed term “electro-mechanical,” converting the term “electro-mechanical valve” into “solenoid valve.” But that would render the claimed language “electro-mechanical” superfluous, violating a claim construction canon. *See SimpleAir, Inc. v. Sony Ericsson Mobile Commc’ns AB*, 820 F.3d 419, 429 (Fed. Cir. 2016) (“[I]nterpretations that render some portion of the claim language superfluous are disfavored.”) (cleaned up); *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”).

The claim differentiation doctrine also requires that the Court reject Firman’s construction because, for example, the ’034 Patent Claims 11 and 13 include “an electro-mechanical valve system” that is not limited to solenoid valves, whereas Claim 14 (which depends on Claim 11) limits the “**electro-mechanical valve system**” as “compris[ing]: a carbuerator cutoff **solenoid** . . . , and a gaseous fuel cutoff **solenoid**.” Therefore, claim differentiation shows that the electro-mechanical valve systems of the non-limited claims (11 and 13) are not required to have **solenoid** valves. Similarly, Claims 13 and 15 of the ’120 Patent do not contain the “solenoid” limitation, even though Claims 1–8, 18, and 19 of the ’120 Patent all contain the “solenoid” limitation. The patentee—and a POSITA reading these patents—clearly understood that “solenoid valve” does not share

¹⁴ Champion objects to Firman’s proposal as untimely disclosed. [See ECF 130 at 29 n.27.]

1 the definition of “electro-mechanical valve.”

2 Specifically, while a solenoid is *an example* of an electro-mechanical valve, a person
3 of ordinary skill in the art would understand that non-solenoid electro-mechanical valves
4 exist that could be employed within the scope of these claims. As the plain and ordinary
5 term implies, the valve system would have an “electrical” aspect and a “mechanical” aspect.
6 [See, e.g., ’034 Patent Col. 2 Ln. 41–44 (in one embodiment, “[t]he electro-mechanical
7 valve system couples to the engine and operates by an electrical switch powered by one of
8 the alternator, a battery, and a magneto . . .”).]

9 While not necessary, extrinsic evidence also supports plain and ordinary meaning.
10 Champion’s expert has explained that other examples of non-solenoid electro-mechanical
11 valves that would have been understood by a POSITA include motorized ball valves, for
12 example. [Ex. 3 ¶¶ 119, 164–169.] Firman’s expert eventually acknowledged that there are
13 types of electro-mechanical valves other than solenoids, after at first not recalling any.
14 [Ex. 5 at 30:14–16, 31:7–10, 19–22, 32:9–15.] Bewilderingly, Firman’s expert does not
15 even know, generally, what a system of one or more valves means. [*Id.* at 103:1–12.]

16 Accordingly, the Court should adopt the plain and ordinary meaning rather than
17 taking Firman’s invitation to commit the cardinal sin of importing the “solenoid” limitation
18 from the specification into the claims, also violating the doctrine of claim differentiation.

19 **D. “coupled to [verb]”¹⁵**

10,393,034 Claims 1 and 18; 11,840,970 Claim 44	
Champion’s Proposal	Firman’s Proposal
Plain and ordinary meaning; alternatively, arranged in a way to perform a desired action, e.g., to “open and close a gaseous fuel source to the engine”	indefinite

24 Firman’s only position here is apparently that “coupled to [verb]” is indefinite under
25 35 U.S.C. § 112. Issued patents are presumed to be valid, which includes a presumption

26 _____
27 ¹⁵ This formulation of “coupled to,” followed by a verb, is the only phrase at issue in this
28 dispute. There are numerous other instances in the asserted patent claims where “coupled to” is in a different grammatical form, *i.e.*, followed by a noun. Those instances of a different grammatical form of “coupled to” are not the subject of the dispute.

1 that they are not indefinite. Accordingly, “[i]ndefiniteness must be proven by clear and
 2 convincing evidence.” *Sonix Tech. Co. v. Publ’ns. Itn’l, Ltd.*, 844 F.3d 1370, 1377 (Fed.
 3 Cir. 2017); *WSOU Invs. LLC v. Google LLC*, No. 2022-1064, 2023 WL 6531525, at *6
 4 (Fed. Cir. Oct. 6, 2023) (party asserting indefiniteness “carries the ultimate burden to show
 5 indefiniteness due to lack of corresponding structure by clear and convincing evidence”).

6 The indefiniteness inquiry is concerned with whether the bounds
 7 of the invention are sufficiently demarcated, not with whether one
 8 of ordinary skill in the art may find a way to practice the
 9 invention. To assess whether a claim is indefinite, therefore, a
 10 court does not look to the knowledge of one skilled in the art apart
 11 from and unconnected to the disclosure of the patent. A court
 12 rather looks at the *disclosure* of the patent and determines if one
 of skill in the art would have understood that *disclosure* to
 encompass the required structure. As such, a patent need not
 explicitly include information that is already well known in the
 art. If a general approach is sufficiently well established in the art
 and referenced in the patent, the claim is not indefinite.

13 *Giesecke & Devrient GmbH v. United States*, 163 Fed. Cl. 430, 444 (2023) (cleaned up).
 14 The phrase “coupled to” in the ’034 Patent Claims 1 and 18 and the ’970 patent Claim 44
 15 is not indefinite, and the Court should adopt its plain and ordinary meaning.

16 First, there is no requirement in patent law that a part cannot be coupled to, or connect
 17 to, perform a given action. For example, a patentee may claim “a fan arranged to cool a
 18 radiator.” That fan need not be connected in any manner whatsoever to the radiator, but it
 19 must be arranged in a manner to cool it.

20 Firman’s entire position wrongly supposes that the English language does not allow
 21 for—and a POSITA would not understand—using a verb after “coupled” because there is
 22 supposedly no way to know which structures are coupled. Firman’s argument fails because
 23 this is an ordinary usage of the English language and because, regardless, the specification
 24 clearly shows examples of structures that can be coupled consistent with this claim
 25 language, such that a POSITA is reasonably informed about the scope of the claims. *See*
 26 *also, e.g., N. Star Innovations, Inc. v. Hirshfeld*, No. 2020-1874, 2021 WL 5121180, at *4
 27 (Fed. Cir. Nov. 4, 2021) (affirming construction of “coupled for receiving” to mean
 28 “connected in order to receive,” demonstrating that “coupled” need not specifically name

the structures being coupled).

The starting point is the claim language itself. *Phillips*, 415 F.3d at 1312.

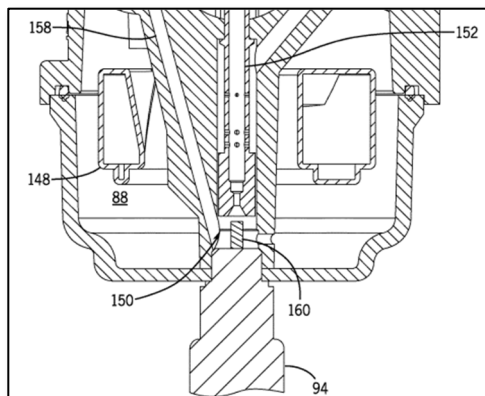
- '034 Claim 1: “a gaseous cutoff **coupled to** open and close a gaseous fuel source to the engine”;
- '034 Claim 18: “a carburetor cutoff solenoid **coupled to** control fuel flow within the carburetor from the liquid fuel line and selectively engage engine operation on liquid fuel”; and
- '970 Claim 44: “a dual fuel engine **coupled to** drive the alternator[.]”

Within the context of the claims, these phrases are understandable and speak for themselves. [Ex. 3 ¶¶ 56–57.] A POSITA would easily understand that “coupled to” in these instances plainly and ordinarily would mean the same thing as “arranged in a way to . . . [perform the action that follows].” [*Id.*] Hence:

- '034 Claim 1: “a gaseous cutoff [**arranged in a way to**] open and close a gaseous fuel source to the engine”;
- '034 Claim 18: “a carburetor cutoff solenoid [**arranged in a way to**] control fuel flow within the carburetor from the liquid fuel line and selectively engage engine operation on liquid fuel”;
- '970 Claim 44: “a dual fuel engine [**arranged in a way**] to drive the alternator[.]”

Even though the claim language itself defeats Firman’s argument, the specifications also show that “coupled to” is not indefinite. Firman argues that there is no way to know what structures are being coupled by looking at the claims, but Firman ignores that “[t]he definiteness inquiry focuses on whether those skilled in the art would understand the scope of the claim when the claim is read *in light of the rest of the specification*.” *BJ Servs. Co. v. Halliburton Energy Servs.*, 338 F.3d 1368, 1372 (Fed. Cir. 2003) (emphasis added). Firman’s position is plainly wrong, and the specifications provide clear examples.

For example, '034 Patent Col. 12 Ln. 15 discloses: “Carburetor cutoff solenoid **94** couples to float bowl **88** to selectively control liquid fuel flow through main fuel circuit **152.**” FIG 4 of the '034 Patent shows an example with reference numerals **88**, **94**, and **152**:



'034 Patent Col. 6 Ln. 5–8 also teaches: “Carburetor cutoff solenoid **94** operates to open and close a liquid fuel path to the engine downstream from float bowl **88** in carburetor **86**. The liquid fuel path in carburetor **86** provides fuel to the throat from float bowl **88** Carburetor cutoff solenoid **94** cuts off liquid fuel flow through the liquid fuel path to provide a liquid fuel cutoff solenoid that controls fuel flow from liquid fuel line **80** to the engine.”

In the '034 Patent, Col. 6 Ln. 27–33 also refers to an “LPG cutoff solenoid **98**, or generally a gaseous fuel cutoff solenoid, coupling gaseous fuel source **82** to the intake and to control the flow of the gaseous fuel to the engine. LPG cutoff solenoid **98** provides a gaseous fuel value coupled along gaseous fuel line **84** to open and close gaseous fuel source **82** to the engine.” (Emphasis added.) [See also '034 Patent Col. 12 at Ln. 8–9 (“carburetor **86** is attached to the engine at engine intake **162**[.]”).] These few (of many) examples refute Firman’s position that it is impossible to know what structures can be “coupled to . . .” within the scope of the claims at issue.

Moreover, Champion’s expert further supports that “coupled to” is not indefinite and that a POSITA would accord this term its plain and ordinary meaning, which includes being arranged in a way to perform a desired function. [Ex. 3 ¶ 56.] This construction is supported by various usages in the academic literature predating the relevant patents. [*Id.* ¶¶ 53–57; see also Ex. 6 at CPN012553 and Ex. 7 at CPN012597 (academic articles predating the Asserted Patents which use the term “coupled to [verb]”); Ex. 5 at 98:1–3, 14–25; 99:17–100:2; 100:23–101:11.]

A person of ordinary skill in the art, especially aided by the patents’ disclosures,

1 would sufficiently understand the claimed structures, thus, “coupled to” is not indefinite.
2 Therefore, the Court should find this term is not indefinite, and adopt its plain and ordinary
3 meaning or, alternatively, that “coupled to” in the context of these three claimed phrases
4 means “arranged in a way to perform” a desired action that is stated in the claim.

5 **VIII. CONCLUSION**

6 For the reasons above, the Court should adopt Champion’s proposals for the disputed
7 patent claim terms in this case.

8 DATED this 11th day of April, 2025.

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EXHIBIT 1017

I, David Raskin, hereby declare as follows:

I. INTRODUCTION

1. I am the Vice President and Chief Financial Officer of Imperial Industrial Supply Co. ("Imperial") (d/b/a DuroMax Power Equipment). References to "we," "us," or "our" in this declaration are intended to refer to Imperial. I have been employed at Imperial since April 2001. Before I became Vice President and Chief Financial Officer of Imperial in January 2015, I worked as the Vice President of Sales & Marketing for Imperial since April 2012, and before that, I worked as a Sales Manager for Imperial since 2004.

2. I am not being compensated for my testimony or involvement in this matter.

II. BACKGROUND

3. Prior to November 1, 2013 (and prior to November 1, 2012), Imperial manufactured and sold a dual-fuel generator product configured to run on both gasoline and propane fuels, known as the DuroMax Dual Fuel Hybrid XP4400EH ("the DuroMax Generator")

4. Prior to November 1, 2013 (and prior to November 1, 2012), Imperial created and publicly distributed marketing materials and product literature describing the structure, features, and functionality of the DuroMax Generator. The purpose of Imperial's marketing materials and product literature was to generate public interest in Imperial's products and inform the public about the features, capabilities, and operation of Imperial's products. Prior to November 1, 2013 (and prior to November 1, 2012), it was Imperial's standard business practice to make its marketing materials and product literature publicly accessible by posting its materials online and by distributing them to customers and potential customers. For example, operating manuals such as the manual of Exhibit D describing the DuroMax Generator could be obtained by a member of the public upon purchase of the DuroMax Generator or upon request to an Imperial employee.

During this period, it was Imperial's standard business practice to provide a copy of its operating manuals, including as set forth in Exhibit D, with the purchase of each DuroMax Generator.

5. On August 26, 2013, Imperial uploaded a video of the DuroMax Generator to its YouTube channel, DuroMax Power Equipment. The video of the DuroMax Generator is accessible at the following link: <https://www.youtube.com/watch?v=ZgKe9U4d7es>. The purpose of this video was to describe the features and functionality of the DuroMax Generator and to generate public interest in the DuroMax Generator product to drive sales. This video has remained publicly available on YouTube continuously since the video was uploaded on August 26, 2013.

III. AUTHENTICITY AND PUBLIC AVAILABILITY OF EXHIBIT A

6. Exhibit A is a screen capture of the DuroMax Generator product listing where customers could purchase the DuroMax Generator online prior to November 1, 2013 (and prior to November 1, 2012). Exhibit A is taken from the Internet Archive Wayback Machine, and as noted in the upper right-hand corner of the page, shows the publicly available DuroMax Generator product listing sale page, as it appeared on October 19, 2012. Exhibit A can be found at the following link:

<https://web.archive.org/web/20121019050958/http://www.maxtool.com:80/us/products/XP4400EH.asp?rt=2>

7. Like DuroMax Power Equipment, Max Tool is another brand of Imperial. Specifically, Max Tool was and is a retail store through which consumers can purchase various brands of tools and other products, including generators manufactured by Imperial, including the DuroMax Generator. Prior to November 1, 2013 (and prior to November 1, 2012) I was involved in operations and sales for Max Tool, in connection with my employment at Imperial.

8. Exhibit A is a page from the Max Tool website. Exhibit A truthfully and accurately portrays the DuroMax Generator product listing page on the Max Tool website, as it appeared prior to November 1, 2013 (and prior to November 1, 2012).

IV. AUTHENTICITY AND PUBLIC AVAILABILITY OF EXHIBIT B

9. Exhibit B is a screen capture of another listing of the DuroMax Generator product where customers could purchase the DuroMax Generator online prior to November 1, 2013 (and prior to November 1, 2012). Exhibit B is taken from the Internet Archive Wayback Machine, and as noted in the upper right-hand corner of the page, shows the publicly available DuroMax Generator product listing sale page, as it appeared on October 18, 2012. Exhibit B can be found at the following link:

<https://web.archive.org/web/20121018213424/http://www.generatorfactoryoutlet.com/gfo/products/XP4400EH.asp>

10. Exhibit B is a page from the Generator Factory Outlet website. Like DuroMax Power Equipment and Max Tool, Generator Factory Outlet is another brand of Imperial. Generator Factory Outlet was and is an online retailer through which Imperial sold the DuroMax Generator prior to November 1, 2013 (and prior to November 1, 2012).

11. Exhibit B truthfully and accurately portrays the DuroMax Generator product listing page on the Generator Factory Outlet website, as it appeared prior to November 1, 2013 (and prior to November 1, 2012).

V. AUTHENTICITY AND PUBLIC AVAILABILITY OF EXHIBIT C

12. Prior to November 1, 2013 (and prior to November 1, 2012), Imperial sold the DuroMax Generator through the Amazon.com online marketplace. Exhibit C shows recorded sales of the DuroMax Generator by Imperial under the brand "Max Tool" through Amazon.com.

13. As shown under the "purchase-date" column in Exhibit C, purchases recorded in Exhibit C range from October 23, 2012, to October 30, 2012. As shown under the "product-name" column, such sales recorded in Exhibit C were for the "DuroMax XP4400EH 4,400 Watt 7.0 HP Dual Fuel Propane / Gas Powered Portable Electric Start Generator."

14. I know this because Imperial's typical process of recording its sales from the online marketplace Amazon.com involved documenting the available purchase and status information of each Imperial product ordered using data received from Amazon.com. Recorded sales data for Imperial products, including the DuroMax Generator, were updated after each order was shipped or cancelled. Merchant data, order id, shipping status, order date, last updated date, and product name were all among the data regularly recorded. This process was Imperial's approach when recording sales from Amazon.com between October 23, 2012, and October 31, 2012.

15. The "last-updated-date" is the date that Imperial recorded the order of the DuroMax Generator as having been shipped to the customer. To best of my knowledge, all of these shipments would have been shipped through FedEx ground shipments. These FedEx ground shipments would have all been delivered to the customer between one and five days after shipping.

16. Exhibit C truthfully and accurately lists sales of the DuroMax Generator through Amazon.com prior to November 1, 2012 (and therefore prior to November 1, 2013). Each of these sales would have included a copy of Exhibit D, the DuroMax Generator Operator's Manual. My recollection is that we made additional sales of the DuroMax Generator through other sales platforms prior to November 1, 2012 (and that we made additional sales of the DuroMax Generator through Amazon and other sales platforms prior to November 1, 2013).

VI. AUTHENTICITY AND PUBLIC AVAILABILITY OF EXHIBIT D

17. Exhibit D is a true and correct copy of the DuroMax Generator XP4400EH Operator's Manual.

18. As shown below, Imperial created Exhibit D at least as early as June 27, 2012. This is reflected in the screenshot of the Exhibit D document metadata depicted in Exhibit E. Exhibit D was publicly distributed to customers of the DuroMax Generator and members of the public prior to November 1, 2013 (and prior to November 1, 2012). For example, Exhibit D was distributed at least to customers in connection with the sales recorded in Exhibit C.

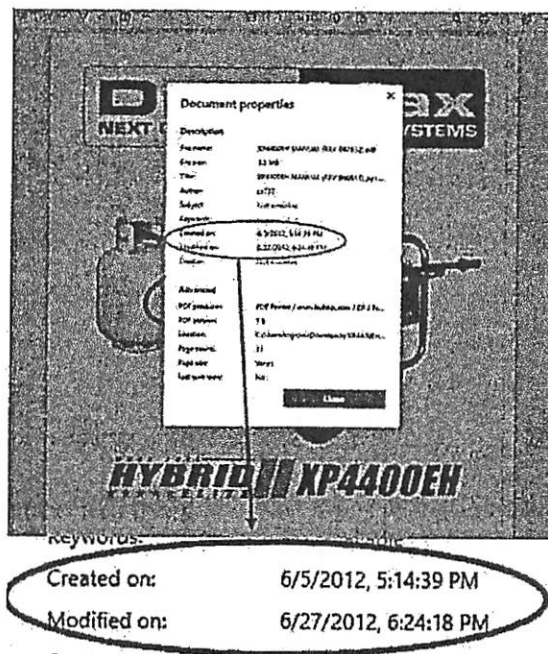


Exhibit E (annotated).

19. Prior to November 1, 2013 (and prior to November 1, 2012) it was Imperial's standard business practice to provide a copy of the operator's manual of Exhibit D to customers with the purchase of the DuroMax Generator by including a paper copy of the operator's manual of Exhibit D in the product packaging of the DuroMax Generator. The operator's manual of

Exhibit D could be obtained by a member of the public upon purchase of the DuroMax Generator or upon request to an Imperial employee.

20. Exhibit D truthfully and accurately portrays and describes the components and assembly of the DuroMax Generator.

21. Exhibit E truthfully and accurately reflects the document metadata, including the dates of creation and last modification, of Exhibit D.

VII. AUTHENTICITY AND PUBLIC AVAILABILITY OF EXHIBIT F

22. Exhibit F is a true and correct copy of a marketing brochure describing the DuroMax Generator.

23. Prior to November 1, 2013, it was Imperial's standard business practice to provide marketing materials, such as Exhibit F, to members of the public who were interested in buying or learning more about its products.

24. Prior to November 1, 2013, Exhibit F was publicly distributed by Imperial employees to members of the public who were interested in buying or learning more about its products.

25. As shown below, Imperial created Exhibit F at least as early as May 17, 2013. This is reflected in the screenshot of the Exhibit F document metadata of Exhibit G.

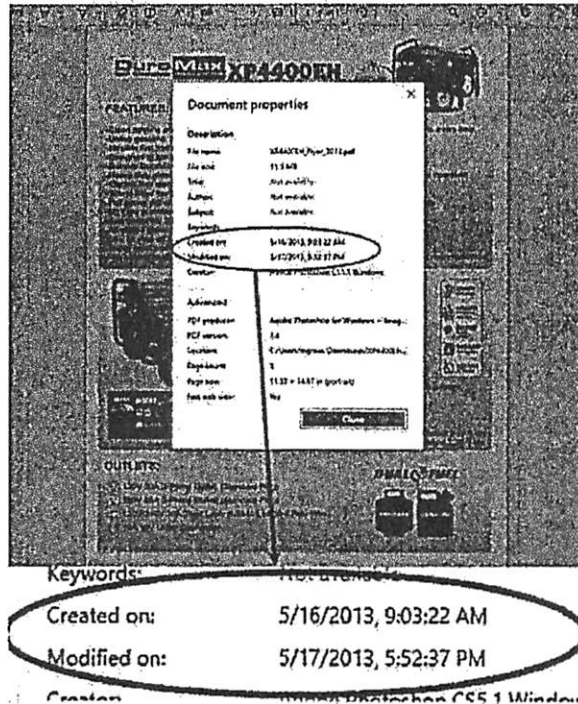


Exhibit G (annotated).

26. Exhibit F truthfully and accurately portrays and describes the characteristics and functionality of the DuroMax Generator as of the date that the brochure was created.

27. Exhibit G truthfully and accurately reflects the document metadata, including the dates of creation and last modification, of Exhibit F.

VIII. AUTHENTICITY AND PUBLIC AVAILABILITY OF EXHIBIT H

28. Exhibit H is a true and correct copy of the Certificate of Conformity with the Clean Air Act from the Environmental Protection Agency for the engine used in the DuroMax Generator, dated February 27, 2013.

IX. AUTHENTICITY AND PUBLIC AVAILABILITY OF EXHIBIT I

29. Exhibit I is a true and correct copy of the DuroMax Generator XP4400EH 2013 Operator's Manual.

30. As shown below, Imperial created Exhibit I at least as early as August 23, 2013. This is reflected in the screenshot of the Exhibit I document metadata depicted in Exhibit J. Exhibit I was publicly distributed to customers of the DuroMax Generator and members of the public after August 23, 2013 and prior to November 1, 2013 (and prior to June 12, 2014).

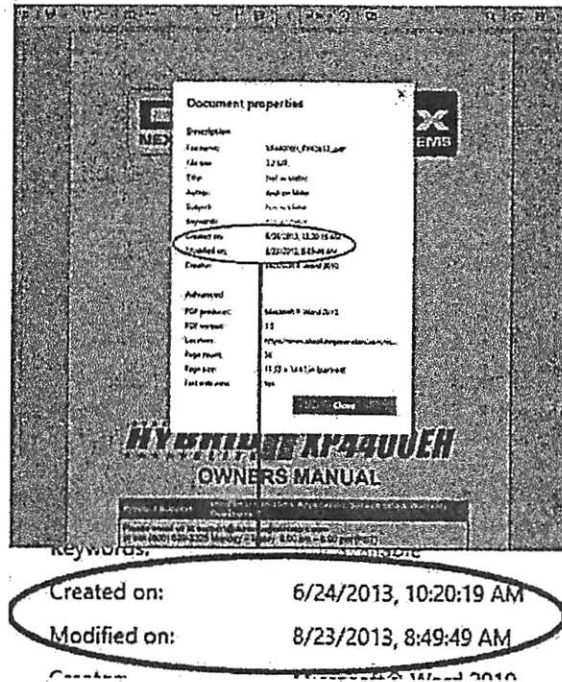


Exhibit J (annotated).

31. The operator's manual of Exhibit I was distributed to dealers and those who requested a copy of the manual. The recipients of the operator's manual were free to post copies of the manual online. For example, Exhibit I appears to have been posted online by Absolute Generators, a dealer of the DuraMax Generator, at least as early as November 4, 2014, as shown below at the following URL link:

https://www.google.com/search?q=Duromax+XP4400EH+dual+fuel+generator+manual&scas=v=9d62b89f1e8f3e7d&tbs=cdm%3A1%2Ccd_min%3A1%2F1%2F2011%2Ccd_max%3A12%2F31%2F2015&sxsrf=AHTn8zrWVUE73y3h2uL2YlnMiX0nuxffeg%3A1745506300936&ei=E8

[KaPfxOIjsptQP NSK2AQ&ved=0ahUKEwj335TY9fCMAxUItokEHXyqAksQ4dUDCBI&uact=5&oq=Duromax+XP4400EH+dual+fuel+generator+manual&gs_l=Egxnd3Mtd2l6LXNlcjA0R1cm9tYXggWFA0NDAwRUggZHVhbCBmdWVsiGdlbmVyYXRvciBtYW51YWwyBBAjGCcyBBAjGCcyBBAjGCcyBRAAGO8FMggQABiABBiiBDIIIEAAAYgAOYogQyCBAAGIAEGKIEMggQABiABBiiBEjDCVDeB1jeB3ACeACQAQCYAWGgAWGqAQExuAEDyAEA-AEBmAIDoAJvwgIIIEAAAYsAMY7wXCAGsQABiABBiwAxiiBJgDAIgGAZAGBZIHazluMaAHiQuyBwMwLjG4B2Y&client=gws-wiz-serp.](https://www.google.com/search?q=DuroMax+XP4400EH+dual+fuel+generator+manual&gs_l=Egxnd3Mtd2l6LXNlcjA0R1cm9tYXggWFA0NDAwRUggZHVhbCBmdWVsiGdlbmVyYXRvciBtYW51YWwyBBAjGCcyBBAjGCcyBBAjGCcyBRAAGO8FMggQABiABBiiBDIIIEAAAYgAOYogQyCBAAGIAEGKIEMggQABiABBiiBEjDCVDeB1jeB3ACeACQAQCYAWGgAWGqAQExuAEDyAEA-AEBmAIDoAJvwgIIIEAAAYsAMY7wXCAGsQABiABBiwAxiiBJgDAIgGAZAGBZIHazluMaAHiQuyBwMwLjG4B2Y&client=gws-wiz-serp)

Google **DuroMax XP4400EH dual fuel generator manual** X | ↓ | ↻ | 🔍

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 **Absolute Generators**
https://www.absolutegenerators.com/bifa_files/PDF

OWNERS MANUAL
Never store generator for extended periods of time with fuel in the tank. Model #. XP4400EH. Gas Tank Capacity 3.95 US Gallons (15L). Figure 4 - Gas Tank...
36 pages

Videos 1

 **DuroMax Generator How-To Guide: Assemble, Start, and Run ...**
YouTube · DuroMax Power Equipment
Oct 2, 2014

5 key moments in this video

From 00:27	From 00:50	From 01:42	From 02:07	From 02:52
Removing the Packing brace	Installing the wheel Kit	Hooking up the Battery	Adding Oil	Adding Fuel

 **DuroMax XP4400E Panta eléctrica o Generador a Gasolina**
YouTube · Emmanuel Jimenez
Jan 23, 2013

Feedback

32. Prior to November 1, 2013 (and prior to June 12, 2014), it was Imperial's standard business practice to provide a copy of the latest version of its operator's manual for a particular product to the customer when it made a sale of that product. For example, after the creation of Exhibit I and prior to November 1, 2013 (and prior to June 12, 2014), it was

Imperial's standard business practice to provide a copy of Exhibit I to customers with the purchase of the DuroMax Generator by including a paper copy of the operator's manual of Exhibit I in the product packaging of each DuroMax Generator. The operator's manual of Exhibit I could be obtained by a member of the public upon purchase of the DuroMax Generator or upon request to an Imperial employee. It was also Imperial's standard business practice to provide the latest copy of the operator's manual to its dealers. For example, Imperial's standard practice was to provide dealers selling the DuroMax Generator the latest copy of the operator's manual. Those dealers were free to publicly distribute these manuals or post them online.

33. Exhibit I truthfully and accurately portrays and describes the components and assembly of the DuroMax Generator.

34. Exhibit J truthfully and accurately reflects the document metadata, including the dates of creation and last modification, of Exhibit I.

X. CERTIFICATION

35. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001. I also declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Signature: 

Name: David Raskin

Title: Vice President and Chief Financial Officer, Imperial Industrial Supply Co.

Date: 5-07-25

EXHIBIT A



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FREE SHIPPING ON ORDERS OVER \$25 OR MORE.

DuroMax Dual Fuel 4,400 Watt Hybrid Propane/Gasoline Portable Generator With Wheel Kit And Electric Start

Item Number:
XP4400EH

Qty:

1

Regular Price
~~\$649.99~~

Sale Price:
\$499.99

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TANK NOT INCLUDED



Description

As global energy consumption grows at exponential rates, so does the demand for energy solutions that are both more environmentally responsible and more efficient. The DuroMax XP4400EH has a dual fuel system that operates on either standard gasoline or cleaner burning liquid propane which can more than double you generator's run time.

With the XP4400EH, operating on propane will not gum up or foul your generator's carburetor, and will give you quick, reliable starts every time. It only takes a few seconds to switch over from regular gas to propane, and with the flexible line, you can easily hook up any size propane tank including the one from your barbeque. Unlike gasoline, propane can be stored for years without going bad.

FEATURES

- Clean running propane will not gum up or foul the carburetor for quick and reliable starts every time.
- Unlike gasoline, liquid propane can be stored for years.
- Flexible line allows for connecting to tanks of any size.
- Designed to run on gasoline or propane for maximum convenience.
- Durable DuroStar 7.0 Hp, air cooled with low oil shutoff.
- Heavy duty steel frame with four point fully isolated motor mounts for smooth and quiet operation.
- Electric Key Start for easy starting when you need it.
- Wheel kit w/ front handle for easy transporting.
- Full power panel with engine shutoff switch, volt meter, circuit breaker and power outlets.
- (2) Fully protected 120V outlets & (1) 120V/240V twist-lock outlet.
- Approximately 20 Hours run time (propane) 8 Hours run time (gasoline)
- All steel 4 gal. fuel tank with ez-read gauge.
- Low oil shut-off protects engine.
- Super quiet muffler reduces engine noise.
- Idle control holds RPM at a constant level even under heavy loads for fuel savings and noise reduction

Runs both gasoline and propane

Full featured power panel

SPECIFICATIONS

Quick Cart

Proceed to Checkout

Welcome, Shopper

Subtotal: \$0.00

Check Out



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Items in Your Cart

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Call 1-800-629-3325
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- Max AC Output: 4400 watts
- Rated AC Output: 3500 watts
- Current (120V/240VAC & 12VDC)
- 2) 120v 20A 3-prong outlets (Standard Household plug)
- 120v/240v 30A twist lock (NEMA L14-30 3 Pole 4 Wire)
- Low oil shutoff.
- EPA approved engines.
- Super quiet exhaust w/ built-in spark arrestor.
- Electric Key and EZ-Pull Recoil start.
- 7.0 Hp air cooled engine
- Fuel Tank Capacity: 4 gal
- Decibel: 69 dBA
- Gasoline Run-Time [@ 50% Max Output]: 8.0 hrs
- Propane Run-Time [@ 50% Max Output]: 20.0 hrs

INCLUDES

- New improved all-terrain never flat tires.
- Flip-Up stow away Handles.
- Spark plug wrench

WARRANTY

- 1 Year Full Parts Warranty
- 30 Day Replacement Warranty

**** This Generator Can Not Be Shipped to California ****

- Shipping Weight: 132.00 lbs.

Regular Price \$649.99		Qty:
Item Number:	Sale Price:	1
XP4400EH	\$499.99	
Free Shipping ADD TO CART CHECKOUT		

All-terrain never flat tires

Flip-up stow away handles

Search

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EXHIBIT B

GENERATOR FACTORY OUTLET

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- Reliance Controls

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WORKING GENERATOR IS WORTH
ITS WEIGHT IN GOLD.



DuroMax Dual Fuel 4,400 Watt Hybrid Propane/Gasoline Portable Generator With Wheel Kit And Electric Start



Item Number:
XP4400EH

Regular Price
\$649.99

Sale Price:
\$499.99

Qty: 1

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WARRANTY
INFORMATION



Description

Customer Reviews

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As global energy consumption grows at exponential rates, so does the demand for energy solutions that are both more environmentally responsible and more efficient. The DuroMax XP4400EH has a dual fuel system that operates on either standard gasoline or cleaner burning liquid propane which can more than double you generator's run time.

With the XP4400EH, operating on propane will not gum up or foul your generator's carburetor, and will give you quick, reliable starts every time. It only takes a few seconds to switch over from regular gas to propane, and with the flexible line, you can easily hook up any size propane tank including the one from your barbecue. Unlike gasoline, propane can be stored for years without going bad.

FEATURES

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- Unlike gasoline, liquid propane can be stored for years.
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- Designed to run on gasoline or propane for maximum convenience.
- Durable DuroStar 7.0 Hp, air cooled with low oil shutoff.
- Heavy duty steel frame with four point fully isolated motor mounts for smooth and quiet operation.
- Electric Key Start for easy starting when you need it.
- Wheel kit w/ front handle for easy transporting.
- Full power panel with engine shutoff switch, volt meter, circuit breaker and power outlets.
- (2) Fully protected 120V outlets & (1) 120V/240V twist-lock outlet.
- Approximately 20 Hours run time (propane) 8 Hours run time (gasoline)
- All steel 4 gal. fuel tank with ez-read gauge.
- Low oil shut-off protects engine.
- Super quiet muffler reduces engine noise.
- Idle control holds RPM at a constant level even under heavy loads for fuel savings and noise reduction

SPECIFICATIONS

- Max AC Output: 4400 watts
- Rated AC Output: 3500 watts
- Current (120V/240VAC & 12VDC)
- 2) 120v 20A 3-prong outlets (Standard Household plug)
- 120v/240v 30A twist lock (NEMA L14-30 3 Pole 4 Wire)

Runs both gasoline and propane

Full featured power panel

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- Low oil shutoff.
- EPA approved engines.
- Super quiet exhaust w/ built-in spark arrestor.
- Electric Key and EZ-Pull Recoil start.
- 7.0 Hp air cooled engine
- Fuel Tank Capacity: 4 gal
- Decibel: 69 dBA
- Gasoline Run-Time [@ 50% Max Output]: 8.0 hrs
- Propane Run-Time [@ 50% Max Output]: 20.0 hrs

INCLUDES

- New improved all-terrain never flat tires.
- Flip-Up stow away Handles.
- Spark plug wrench

WARRANTY

- 1 Year Full Parts Warranty
- 30 Day Replacement Warranty

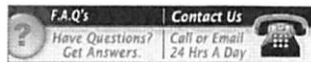
**** This Generator Can Not Be Shipped to California ****

made it here THIS IS A 404 PAGE which means that the page you went to does not exist.
• Shipping Weight: 132.00 lbs.

Item Number: XP4400EH	Regular Price \$649.99	Sale Price: \$499.99	Qty: 1
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EXHIBIT C

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DuroMax XP4400EH 4,400 Watt 7.0 HP Dual Fuel Propane / Gas Powered Portable Electric Start Generator	XP4400EH	B009RBKGZC
DuroMax XP4400EH 4,400 Watt 7.0 HP Dual Fuel Propane / Gas Powered Portable Electric Start Generator	XP4400EH	B009RBKGZC
DuroMax XP4400EH 4,400 Watt 7.0 HP Dual Fuel Propane / Gas Powered Portable Electric Start Generator	XP4400EH	B009RBKGZC
DuroMax XP4400EH 4,400 Watt 7.0 HP Dual Fuel Propane / Gas Powered Portable Electric Start Generator	XP4400EH	B009RBKGZC
DuroMax XP4400EH 4,400 Watt 7.0 HP Dual Fuel Propane / Gas Powered Portable Electric Start Generator	XP4400EH	B009RBKGZC

item-status	quantity	currency	item-price	item-tax	shipping-price	shipping-tax	gift-wrap-price	gift-wrap-tax	item-promotion-discount
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price-designation	is-replacement-order
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EXHIBIT D

Duro
NEXT GENERATION

Max
POWER SYSTEMS

DUAL FUEL



DUAL FUEL
HYBRID XP4400EH
★★★★★ **ELITE**

Product Support (Product: information, application, service info & warranty questions)

Please email us at support@duromaxgenerators.com

or call 1-800-629-3325 (option 3) Monday -Thursday 6am to 6:30pm and Fridays 6am to 5pm. PST

This manual provides information regarding the operation and maintenance of these products.

We have made every effort to ensure the accuracy of the information in this manual.

We reserve the right to change this product at any time without prior notice.

FEATURES

- **Dual Fuel Option, LPG or Gasoline.**
- **Durable 7.0 HP, Air Cooled Overhead Valve Engine.**
- **Heavy Duty Steel Frame with Four Point Fully Isolated Motor Mounts for Smooth and Quiet Operation.**
- **Wheel and Handle Kit for Easy Transporting.**
- **Full Power Panel with Engine Shutoff Switch, Volt Meter, Circuit Breaker and Power Outlets.**
- **(2) Fully Protected 120V Outlets & (1) 120V/240V Twist-Lock Outlet.**
- **8 Hour Run Time.**
- **All Steel 4.0 Gal. Fuel Tank with EZ-Read Gauge.**
- **Low Oil Shut-Off Protects Engine.**
- **Super Quiet Muffler Reduces Engine Noise.**
- **Meets EPA and CARB Emission Standards.**

This manual provides information regarding the operation and maintenance of these products. We have made every effort to ensure the accuracy of the information in this manual. We reserve the right to change this product at any time without prior notice.

Notice Regarding Emissions

Engines that are certified to comply with California and U.S. EPA emission regulations for SORE (Small Off Road Equipment), are certified to operate on regular unleaded gasoline, and may include the following emission control systems: (EM) Engine Modifications and (TWC) Three-Way Catalyst (if so equipped).

GENERAL SAFETY PROCEDURES

Please familiarize yourself with the following safety symbols and words:

The safety alert symbol  is used with one of the safety words (**DANGER**, **CAUTION**, or **WARNING**) to alert you to hazards. Please pay attention to these hazard notices both in this manual and on the generator.

DANGER: Indicates a hazard that will result in serious injury or death if instructions are not followed.

WARNING: Indicates a strong possibility of causing serious injury or death if instructions are not followed.

CAUTION: Indicates a possibility of personal injury or equipment damage if instructions are not followed.

 DANGER: This generator produces poisonous carbon monoxide gas when running. This gas is both odorless and colorless. Even if you do not see or smell gas, carbon monoxide may still be present. Breathing this poison can lead to headaches, dizziness, drowsiness, and eventually death.

- Use outdoors **ONLY** in non-confined areas.
- Keep several feet of clearance on all sides to allow proper ventilation of the generator.

 WARNING: The exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

 WARNING: This generator may emit highly flammable and explosive gasoline vapors, which can cause severe burns or even death. A nearby open flame can lead to explosion even if not directly in contact with gas.

- Do not operate near open flame.
- Do not smoke near generator.
- Always operate on a firm, level surface.
- Always turn generator off before refueling. Allow generator to cool for at least 2 minutes before removing fuel cap. Loosen cap slowly to relieve pressure in tank.
- Do not overfill gas tank. Gas may expand during operation. Do not fill to the top of the tank.
- Always check for spilled gas before operating.
- Empty the gasoline tank before storing or transporting the generator.
- Before transporting, turn fuel valve to off and disconnect the spark plug.

⚠ WARNING: This generator produces powerful voltage, which can result in electrocution.

- ALWAYS ground the generator before using it (see the "Grounding the Generator" portion of the *"PREPARING THE GENERATOR FOR USE"* section).
- Generator should only be plugged into electrical devices, either directly or with an extension cord. NEVER connect to a building electrical system without a qualified electrician. Such connections must comply with local electrical laws and codes. Failure to comply can create a backflow of power, which may result in serious injury or death to utility workers.
- Use a ground fault circuit interrupter (GFCI) in highly conductive areas such as metal decking or steel work. GFCIs are available in-line with some extension cords.
- Do not use uncovered in rainy or wet conditions.
- Do not touch bare wires or receptacles (outlets).
- Do not allow children or non-qualified persons to operate.

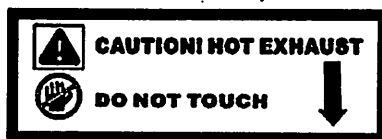
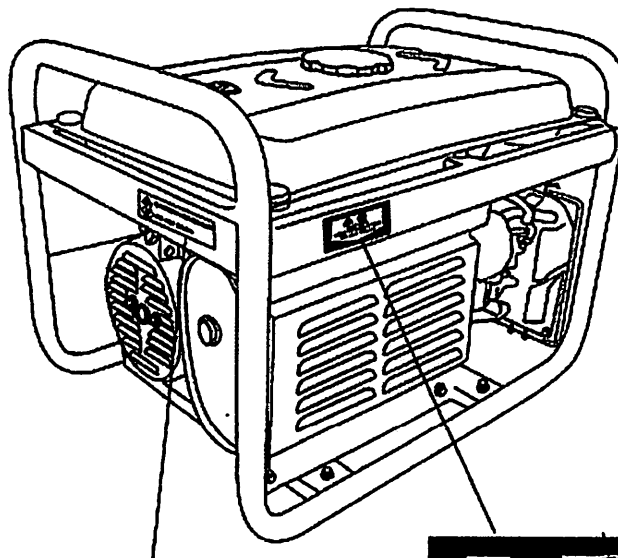
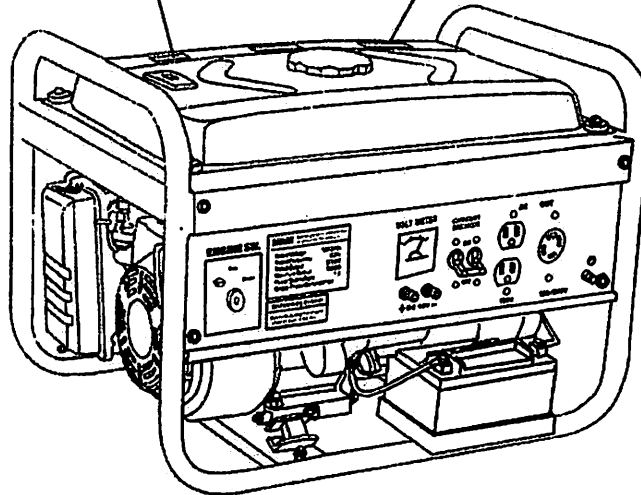
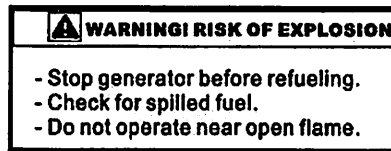
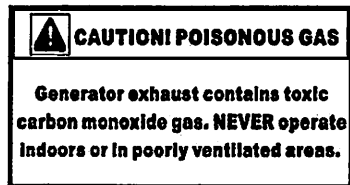
⚠ WARNING: This generator produces heat when running. Temperatures near exhaust can exceed 150°F (65°C).

- Do not touch hot surfaces. Pay attention to warning labels on the generator denoting hot parts of the machine.
- Allow generator to cool several minutes after use before touching engine or areas which heat during use.

CAUTION: Misuse of this generator can damage it or shorten its life.

- Use the generator only for its intended purposes.
- Operate only on dry, level surfaces.
- Allow generator to run for 3 - 5 minutes before connecting any electrical devices.
- Shut off and disconnect any malfunctioning devices from generator.
- Do not exceed the Wattage capacity of the generator by plugging in more electrical devices than the unit can handle (see *"PRECAUTIONS-OVERLOADING THE GENERATOR"*).
- Do not turn on electrical devices until after they are connected to the generator.
- Turn off all connected electrical devices, and turn off the breaker, before stopping the generator.

In addition to the above safety notices, please familiarize yourself with the safety and hazard markings on the generator.



PACKAGE CONTENTS

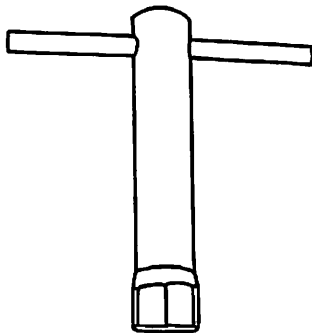
Your generator comes with the items listed below. Please check to see that all of the following items are included with your generator.



Screw driver



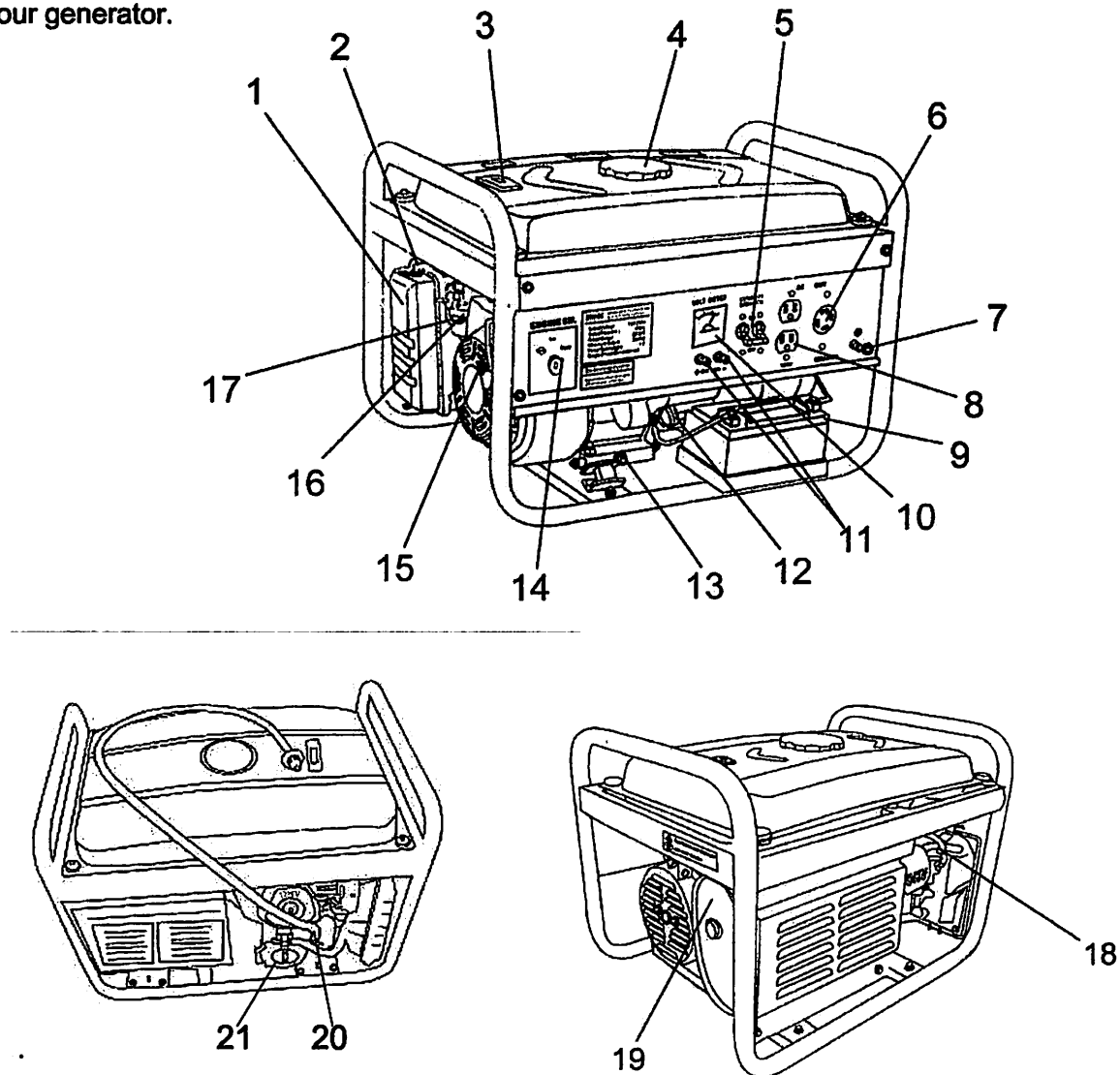
Spanner



Spark plug wrench

GENERATOR COMPONENTS

Please familiarize yourself with the locations and functions of the various components and controls of your generator.



1. **Air cleaner** - a removable, cleanable, sponge-like element that limits the amount of dirt pulled into the engine.
2. **Choke lever** - Adjusts the amount of air let into the engine.
3. **Fuel Gauge** - Indicates the amount of fuel in the tank.
4. **Fuel Cap** - Access to the fuel tank for adding fuel.
5. **Circuit Breaker** - Reset switch that protects the generator from electrical overload.
6. **120/ 240 Volt AC Receptacle** - Use to connect electrical devices that run 120 and/or 240 Volt, 60Hz, single phase, AC current (NEMA L14-30).
7. **Ground Terminal** - Connect grounding wires here to properly ground unit.
8. **120 Volt AC Receptacle** - Use to connect electrical devices that run 120 Volt, 60 Hz, single phase, AC current (2×duplex GFCI).
9. **12V DC Battery.**
10. **Volt Meter** - Provides reading of voltage output.
11. **12v DC Receptacle**- Use for charging 12 Volt automotive-type batteries only.

12. **Oil Filler Cap**- Use to Add oil or checking the oil.
13. **Oil Fill and Dipstick**- Location for checking and filling engine oil.
14. **Engine Switch**- Used to start/stop engine.
15. **Recoil Starter**- Pull-cord for starting engine.
16. **Fuel Filter Cup**- Traps dirt and water from fuel before it enters the engine.
17. **Fuel valve**- Allows fuel to enter engine.
18. **Spark plug**- Provides proper engine ignition.
19. **Muffler**- Reduces engine noise.
20. **Hose connector**- Connect liquid propane gas to generator.
21. **Pressure Release Valve**- Provides regulated liquid propane gas supply.

PREPARING THE GENERATOR FOR USE

Using the Generator for the First Time

If you are using the generator for the first time, there are a few steps you must take to prepare it for operation.

Step 1 - Add oil

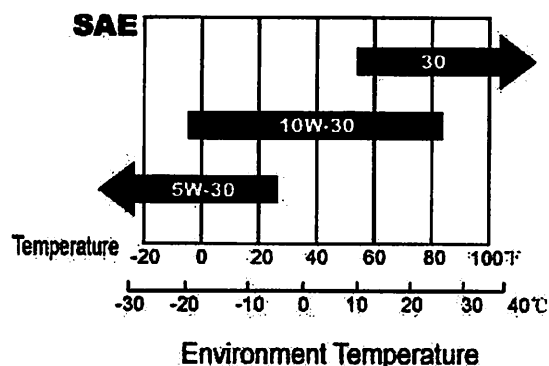
The generator requires engine oil to operate properly. The generator, when new from the package, contains no oil in the crankcase. You must add the proper amount of oil before operating the generator for the first time. This amount, which is equal to the oil capacity of the engine crankcase, can be found on the chart in *figure 1*. When filling the engine with oil in the future, please refer to this chart.

<i>Model number</i>	XP4400H	XP4400EH
<i>Engine oil capacity</i>	20 fluid oz.	

Figure 1- Generator Oil Capacity

CAUTION:

- **Do not apply engine oil with additives or 2-stroke gasoline engine oil**, as they haven't enough lubrication, which may shorten the engine's service life.
- **Engine oil recommended: SAE 10W-30**. As viscosity varies with regions and temperatures, so the lubricant has to be selected in accordance with our recommendation.



To add oil, follow these steps:

1. Make sure the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap from the engine as shown in *figure 2*.
3. Using a funnel, add the appropriate amount of oil, as found in *figure 1*, into the crankcase. You will know the crankcase is full when the oil level has reached the lower lip of the opening you have just poured the oil into (see *figure 3*).
4. Replace oil filler cap.

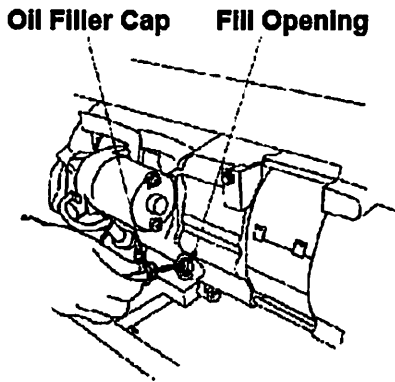


Figure 2- Unscrewing the oil cap



Figure 3 - Adding oil

Step 2 - Add Gasoline

⚠ WARNING: Gasoline and gas fumes are highly flammable.

- Do not fill tank near an open flame.
- Do not overfill. Always check for fuel spills.

To ensure that the generator runs smoothly use only FRESH, UNLEADED GAS WITH AN OCTANE RATING OF 87 OR HIGHER.

To add gasoline:

1. Make sure the generator is on a level surface.
2. Unscrew gas cap and set aside (NOTE: the gas cap may be tight and hard to unscrew).
3. Slowly add unleaded gasoline to the fuel tank. Be careful not to overfill. Please refer to the chart in *figure 4* to find the gas capacity of your generator model. The fuel gauge on the top of the gas tank indicates how much gasoline is in the generator gas tank.
NOTE: Gas can expand. Do not fill the gas tank to the very top.
4. Replace fuel cap and wipe up any spilled gasoline with a dry cloth.

IMPORTANT:

- Never use an oil/gasoline mixture.
- Never use old gas.
- Avoid getting dirt or water in the fuel tank.
- Gas can age in the tank and make it hard to start up the generator in the future.
- Never store generator for extended periods of time with fuel in the tank.

<i>Model number</i>	XP4400H	XP4400EH
<i>Gas tank capacity</i>	15L (3.96 US Gallons)	

Figure 4 - Gas Tank Capacity

Step 3 - Ground the Generator

⚠ WARNING: Failure to properly ground the generator can result in electrocution.

Ground the generator by tightening the grounding nut against a grounding wire (see *figure 5*). A generally acceptable grounding wire is a No. 12 AWG (American Wire Gauge) stranded copper wire. This grounding wire should be connected at the other end to a copper or brass-grounding rod

that is driven into the earth. Grounding codes can vary by location. Please contact a local electrician to check the grounding regulations for your area.

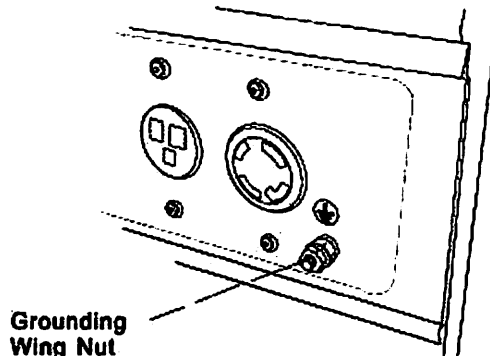


Figure 5 – Attaching the Grounding Wire to the Generator

Subsequent Use of the Generator

If this is not your first time using the generator there are still steps you should take to prepare it for operation.

IMPORTANT: At this point you should be familiar with the procedures described in the first portion of this section entitled *"Using the Generator for the First Time."* If you have not yet read this section, go back and read it now.

Step 1- Check the oil

The generator is equipped with an automatic shutoff to protect it from damage due to low oil. Nonetheless, you should check the oil level of the engine before each use to ensure that the engine crankcase has a sufficient amount.

To check the oil level:

1. Make sure the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap.
3. With a dry cloth, wipe the oil off of the stick on the inside of the cap.
4. Insert the dipstick as if you were replacing the cap and then remove again. There should now be oil on the stick. If there is no oil on the stick, or oil only at the very end of the stick, you should add oil until the engine crankcase is filled (see *"Adding Oil"* portion of the *"Maintenance"* section).
5. Be sure to replace the cap when finished checking oil.

NOTE: The oil capacity for your generator can be found in the *"Specifications"* section of this manual.

Step 2 - Check the Gas Level

Before starting the generator, check to see that there is sufficient gasoline in the gas tank. The fuel gauge on top of the generator will indicate the gas level in the tank. Add gas if necessary according to the steps in the *"Adding Gasoline"* portion of the *"Maintenance"* section.

⚠ WARNING: Gasoline and gasoline fumes are highly flammable.

- Do not fill tank near an open flame.
- Always allow engine to cool for several minutes before refueling.
- Do not overfill (check the *"Specifications"* section for the tank capacity of your generator). Always check for fuel spills.

⚠ IMPORTANT:

- Use only UNLEADED gasoline with an octane rating of 87 or higher.
- Do not use old gas.
- Never use an oil/gasoline mixture.
- Avoid getting dirt or water in the fuel tank.
- Never store generator for extended periods of time with fuel in the tank.

Step 3- Ground the Generator

- ⚠ WARNING:** Failure to properly ground the generator can result in electrocution. Ground the generator by tightening the grounding nut against a grounding wire (see figure 5). A generally acceptable grounding wire is a No. 12 AWG (American Wire Gauge) stranded copper wire. This grounding wire should be connected at the other end to a copper or brass-grounding rod that is driven into the earth.

Grounding codes can vary by location. Please contact a local electrician to check the grounding regulations for your area.

STARTING THE GENERATOR - Gasoline or LPG separately

⚠ CAUTION:

When using gasoline, LPG must be shut off! When using LPG, gasoline must be shut off!

- ⚠ Disconnect all electrical loads from the generator before attempting to start!**

To start your generator with gasoline, perform the following steps:

1. Make sure no electrical devices are connected to the generator. Such devices can make it difficult for the engine to start.
2. Check that the generator is properly grounded (see page 13, "*Ground the Generator*").
3. Turn the gasoline fuel valve to the "ON" position
4. Move the choke lever to the "CLOSED" position (see figure 7).
5. Set the engine switch to the "ON" position.
6. Pull on the recoil starter handle slowly until a slight resistance is felt (see figure 8). Then pull quickly to start the engine. Return cord gently into the machine. Never allow the cord to snap back.
7. If engine fails to start, repeat step 4. NOTE: After repeated attempts to start the engine, please consult the troubleshooting guide before attempting again.
8. Once the engine has started and run for about a minute, move the choke lever about half way towards the "OPEN" position. Wait another 30 seconds and then move the choke lever all the way to the "OPEN" position.
9. Allow the generator to run for several minutes before attempting to connect any electrical devices.

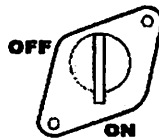


Figure 6 - fuel valve in the "on" position

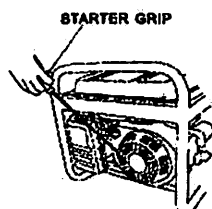


Figure 8 - Pulling the recoil start.



Figure 7 - Choke in the close position

To start your generator with LPG, perform the following steps:

1. Make sure no electrical devices are connected to the generator.
2. Check that the generator is properly grounded (see page 13, "Ground the Generator").
3. Turn the gasoline fuel valve to the "OFF" position (see figure 6).
4. Connect the propane gas hose to the regulator (see figure B).
5. Connect the regulator to the liquid propane gas supply and then turn on the liquid propane gas supply, making sure there are no leaks (see figure C).
6. Open the clasp connected to the Pressure Release Valve (see figure C).
7. Press the button on Pressure Release Valve two to three times before starting the engine. (see figure D)
8. When starting the engine:
 - a. If the engine is warm (The unit was run recently) start with the choke half open.
 - i. Wait another 30 seconds and then move the choke lever all the way to the "OPEN" position.
 - b. If the engine is cold (The unit has not been run for half an hour or more) start with the choke open. (see figure E & F).
9. Pull on the recoil starter handle slowly until a slight resistance is felt (see figure 8). Then pull quickly to start the engine. Return cord gently into the machine. Never allow the cord to snap back.
10. Allow the generator to run for several minutes before attempting to connect any electrical devices.

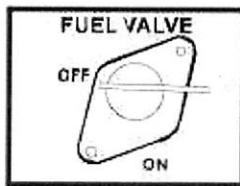


Figure A - Fuel Valve in the "OFF" position



Figure C-Connect Valve

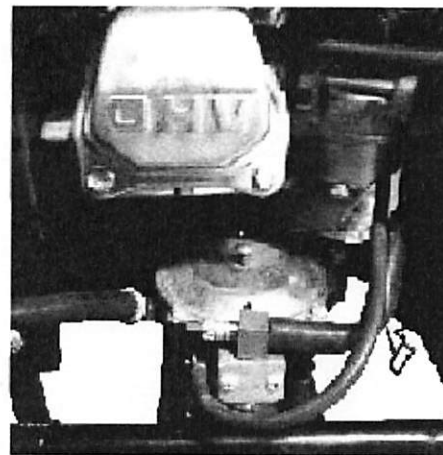


Figure B - Connect the Hose

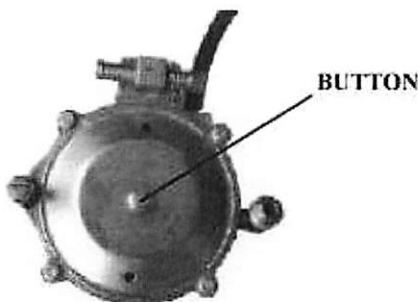


Figure D -Button on Presssure Release Valve

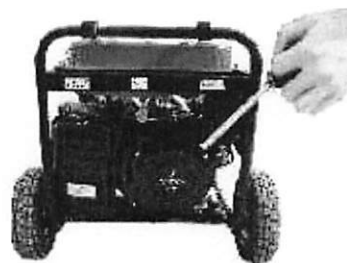


Figure F - Start with LPG(Liquid Propane Gas)

⚠ WARNING: WHEN USING THE GENERATOR WITH LPG
MAKE SURE THERE IS NO POSSIBLE IGNITION SOURCE CLOSE TO THE GENERATOR.

1. Before using, make sure all of the connectors and hoses are well connected and sealed.
2. Connect electrical devices to generator ONLY after the engine runs smoothly. (There may be remnant gasoline in the carburetor; this can cause unsteady engine performance for several minutes)
3. If the propane gas leaks, shut off the LPG supply first and then quickly unplug or turn off any electrical devices powered by the unit.
4. When stopping the engine, unplug or turn off any electrical devices and then turn off the LPG CLASP (see figure C). After the engine has stopped, turn the KEY to 'OFF" position, then shut off the LPG supply.

USING THE GENERATOR

Once you have allowed the engine to run for several minutes, you may connect electrical devices to the generator.

AC Usage

You may connect electrical devices running on AC current according to their wattage requirements. The chart in figure 9 shows the rated and surge wattage of your generator according to its model number.

The *rated wattage* corresponds to the maximum wattage the generator can output on a continuous basis.

The *surge wattage* corresponds to the maximum amount of power the generator can output for a short period of time. Many electrical devices such as refrigerators require short bursts of extra power, in addition the rated wattage listed by the device, to stop and start their motors.

The surge wattage ability of the generator covers this extra power requirement.

Model Number	Rated (Running) Wattage	Surge Wattage
XP4400	3500	4400
XP4400E	3500	4400

Figure 9-generator wattage by model number

The total running wattage requirement of the electrical devices connected to the generator should not exceed the rated wattage of the generator itself. To calculate the total wattage requirement of the electrical devices you wish to connect, find the rated (or running) wattage of each device. This number should be listed somewhere on the device or in its instruction manual.

If you cannot find this wattage, you may calculate it by multiplying the Voltage requirement by the Amperage drawn: $\text{Watts} = \text{Volts} \times \text{Amperes}$. If these specifications are not available you may estimate the Watts required by your device by using the chart in *figure 10*.

Tool or Appliance	Rated (Running) Watts	Additional Surge Watts
Electric water heater (40 gal)	4000	0
Hot plate	2500	0
Saw-radial arm	2000	2000
Electric stove	1500	0
Saw-circular	1500	1500
Air compressor (1HP)	1500	3000
Window air conditioner	1200	1800
Saw-miter	1200	1800
Microwave	1000	2000
Well water pump	1000	1500
Reciprocating saw	960	1040
Sump pump	800	1200
Refrigerator freezer	800	1200
Furnace blower	800	1300
Computer	800	0
Electric drill	600	900
Television	500	0
Deep freezer	500	800
Garage door opener	480	600
Stereo	400	0
Box fan	300	600
Clock radio	300	0
Security system	180	0
DVD player/VCD	100	0
Common light bulb	75	0

Figure 10- Estimated wattage requirements of common electrical devices.

Once you have found the rated wattage requirement of each electrical device, add these numbers to find the total rated wattage you wish to draw from the generator. If this number exceeds the rated wattage of the generator, **DO NOT** connect all these devices. Select a combination of electrical devices, which has a total rated wattage lower than or equal to the rated wattage of the generator.

CAUTION - The generator can only run at its surge wattage capacity for a short time. Connect only electrical devices requiring a rated (running) wattage equal to or less than the rated wattage of the generator. Never connect devices requiring a rated wattage equal to the surge wattage of the generator.

NOTE: The above wattage figures are estimates only. Try to check the wattage listed on your electrical devices before consulting this chart.

Once you have determined what electrical devices you will be powering with the generator, connect these devices according to the following procedure:

1. Plug in each electrical device with the device turned off.
 - a. NOTE: Be sure to attach appliances to the correct receptacle (outlet). Connect standard 120 Volt, single phase, 60 Hz loads only to the 120 Volt receptacles.
 - b. Connect 120/240 Volt, single phase, 60Hz loads with NEMA L14-30 plug **only** to the 120/240 Volt receptacle See *Figure 11* for a depiction of each of these receptacles.
2. Switch the circuit breaker to the "ON" position.
3. Turn on the connected electrical devices in the order of the amount of power they require beginning with the device with the highest rated Wattage requirement.

⚠ CAUTION: Do not connect 50Hz or 3-phase loads to the generator.

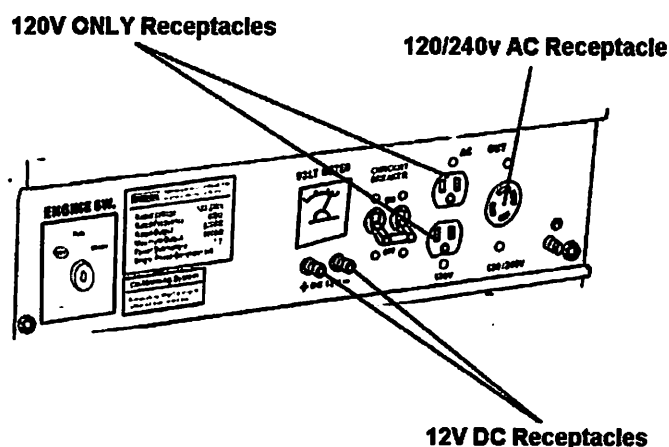


Figure 11- Receptacles available on the generator

VOLTAGE SELECTOR SWITCH

The voltage selector switches the dual 120v AC windings of the generator to produce "120V ONLY" or "120/240V". If a 240V appliance is connected to the 4-prong receptacle, the switch must be in the "120/240V" position. If only 120V appliances are being connected to the generator select the "120V ONLY" position to double the 120v amperage.

WARNING:

Only change the Voltage Selector Switch with the main AC circuit breaker OFF. The generator can be seriously damaged if the Voltage Selector Switch is changed with the breaker ON.

SOME NOTES ABOUT POWER CORDS

Long or thin cords can drain the power provided to an electrical device by the generator. When using such cords, allow for a slightly higher rated wattage requirement for the electrical device. See *Figure 12* for recommended cords based on the power requirement of the electrical device.

Device Requirements			Max. Cord Length (ft.) by Wire Gauge				
Amps	Watts (120V)	Watts (240V)	#8 wire	#10 wire	#12 wire	#14 wire	#16 wire
2.5	300	600	NR	1000	600	375	250
5	600	1200	NR	500	300	200	125
7.5	900	1800	NR	350	200	125	100
10	1200	2400	NR	250	150	100	50
15	1800	3600	NR	150	100	65	NR
20	2400	4800	175	125	75	50	NR
25	3000	6000	150	100	60	NR	NR
30	3600	7200	125	65	NR	NR	NR
40	4800	9600	90	NR	NR	NR	NR

*NR= not recommended

Figure 12 - Maximum Extension Cord Lengths by Power Requirement

DC Usage

⚠ CAUTION: The DC receptacle is for recharging 12 Volt automotive-type batteries only. Do not connect any other device to this receptacle.

⚠ CAUTION: Never try to jump start a car with your generator.

To connect 12 Volt batteries to the DC receptacle:

1. Connect one charging wire to the positive terminal on the battery and the other charging wire to the negative terminal on the battery.
2. Connect the free end of the positive wire to the positive receptacle (outlet) on the generator.
3. Start the generator.
4. Carefully connect the free end of the negative wire to the negative receptacle on the generator.
5. When disconnecting, always disconnect the wires from the generator first to avoid a spark.

⚠ DANGER: Storage batteries emit highly explosive hydrogen gas when charged.

Batteries also contain acid, which can cause severe chemical burns.

⚠ Do not allow open flames or cigarettes nearby for several minutes after charging a battery.

⚠ Always wear protective goggles and rubber gloves when charging a battery.

⚠ If battery acid gets on your skin, flush with water.

⚠ If battery acid gets in your eyes, flush with water and call a physician immediately.

⚠ If battery acid is swallowed, drink large quantities of milk and call a Physician immediately.

If your generator is the electric start model, once running, it will charge the battery on the generator automatically. While charging, you can see the recharge indicator light lit, after the battery is full, the light will turn off.

STOPPING THE GENERATOR

To stop the generator:

1. Power down, and then unplug all connected electrical devices.
2. Switch the main AC circuit breaker to the "OFF" position.
3. Allow the generator to run for several more minutes with no electrical devices connected.
(This helps stabilize the temperature of the generator.)
4. Turn the engine switch to the "OFF" position.
5. Turn the fuel valve to the "OFF" position.

⚠ WARNING: Allow the generator to cool for several minutes before touching areas that become hot during use.

⚠ CAUTION: Allowing gas to sit in the generator tank for long periods of time without use can make it difficult to start the generator in the future. Never store generator for extended periods of time with fuel in the tank.

MAINTENANCE /CARE

Proper routine maintenance of your generator will help prolong the life of your machine. Please perform maintenance checks and operations according the schedule in *figure 13*.

⚠ CAUTION: Never perform maintenance operations while the generator is running.

Recommended Maintenance schedule

		Each use	Every month or	Every 3 months or	Every 6 months or	Every year or
Engine oil	Check level	x				
	Replace		x			
Air cleaner	Check	x				
	Clean			x		
Fuel filter cup	Clean				x	
Spark plug	Check/clean				x	
Gas tank	Check gas level	x				
	Clean		x			x

Figure 13 - Recommended maintenance schedule

Cleaning the Generator

Always try to use your generator in a cool dry place. However, in the event your generator becomes dirty you may clean the exterior with one or more of the following:

- A damp cloth
- A soft brush

- A vacuum
- Pressurized air

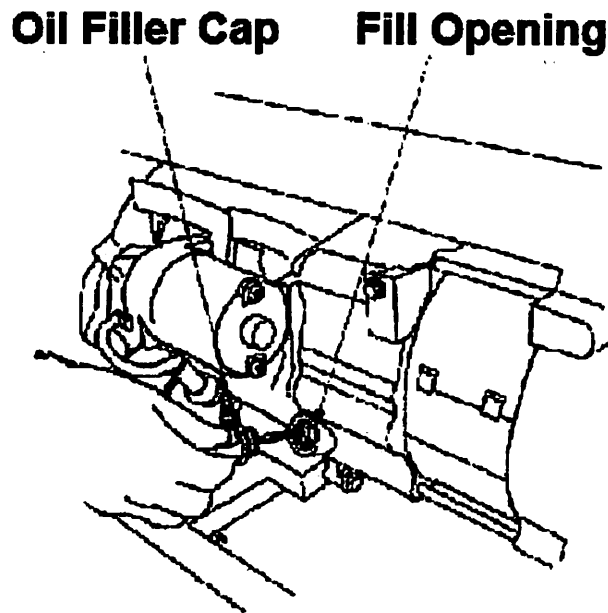
⚠ Never clean your generator with a bucket of water or a hose. Water can get inside the working parts of the generator and cause a short circuit or corrosion.

Checking the Oil

The generator is equipped with an automatic shutoff to protect it from running on low oil. Nonetheless, you should check the oil level of the generator before each use to ensure that the generator crankcase has a sufficient amount.

To check the oil level:

1. Make sure the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap (see *figure 14*).
3. With a dry cloth, wipe the oil off of the stick on the inside of the cap.
4. Insert the dipstick as if you were replacing the cap and then remove again. There should now be oil on the stick. If there is no oil on the stick, or oil only at the very end of the stick, you should add oil until the engine crankcase is filled. See "*Changing/ Adding Oil*" in this section.
5. Be sure to replace cap when you are finished checking the oil.



You should check the oil level of your generator according to the maintenance schedule in *figure 13*. When the oil level is low you will need to add oil until the level is sufficient to run the generator. The oil capacity of your generator engine is listed in *figure 15*.

Model number	XP4400	XP4400E
Engine oil capacity	20 fluid oz.	20 fluid oz.

Figure 15- Engine Oil Capacity.

It is only necessary to drain the oil from the crankcase, other than for regular oil changes if it has become contaminated with water or dirt. In this case, you can drain the oil from the generator according to the following steps:

1. Place an approved oil disposal container underneath the generator to catch oil as it drains.
2. Using a 10 mm hex wrench, unscrew the oil drain plug, which is located on the crankcase underneath the oil filler/dipstick cap (see *figure 16*). Allow all the oil to drain from the generator.
3. Replace the oil drain plug and tighten with a 10 mm hex wrench.

To add oil to the crankcase, follow these steps:

1. Make sure the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap from the engine as shown in *figure 14* above.
3. Using a funnel, add motor oil to the crankcase. We recommend SAE 10W30 motor oil for general use. When full, the oil level should come close in the top of the oil fill opening (see *figure 17*).

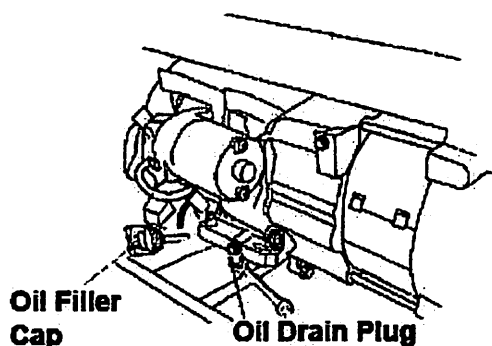


Figure 16: Draining Oil



Figure 17: Adding Oil

NOTE: Never dispose of used motor oil in the trash or down a drain. Please call your local recycling center or auto garage to arrange oil disposal.

Air Cleaner Maintenance

Routine maintenance of the air cleaner helps maintain proper airflow to the carburetor. Occasionally check that the air cleaner is free of excessive dirt.

1. Unhinge the clasps at the top and bottom of the air cleaner cover (see *figure 18*).
2. Remove the sponge-like elements from the casing.
3. Wipe the dirt from inside the empty air cleaner casing.
4. Wash the sponge-like elements in household dish detergent and warm water.
5. Allow the elements to dry completely.
6. Soak the dry elements in a small amount of engine oil. Ring out any excess oil.
7. Replace the sponge-like elements in the air cleaner casing and replace the cover.

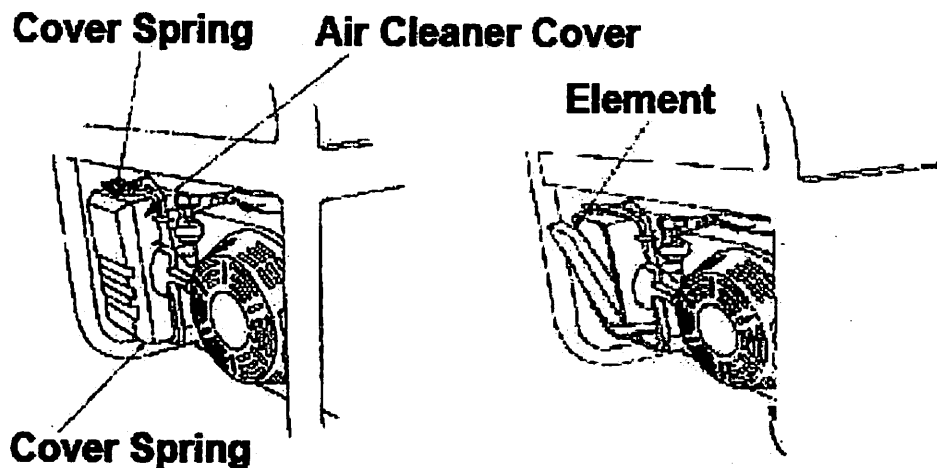


Figure 18 – Removing the air cleaner casing.

Fuel Filter Cup Cleaning

The fuel filter cup is a small well underneath the fuel valve. It helps to trap dirt and water that may be in your fuel tank before it can enter the engine.

To clean the fuel filter cup:

1. Turn the fuel valve to the "OFF" position.
2. Unscrew the fuel filter cup from the fuel valve using a wrench. Turn the valve toward you to unscrew (see figure 19).
3. Clean the cup of all sediment using a rag or brush.
4. Reinstall the fuel filter cup.

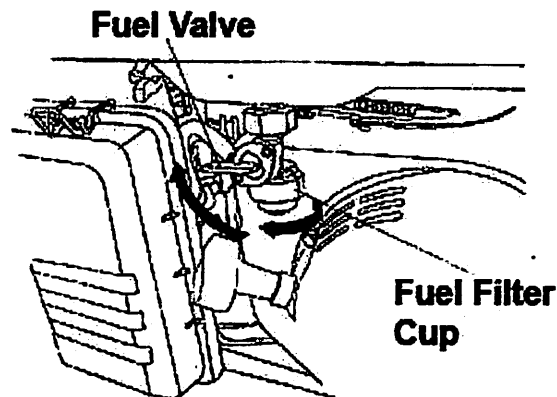


Figure 19 –Removing the Fuel Filter Cup

Spark Plug Maintenance

The spark plug is important for proper engine operation. A good spark plug should be intact, free of deposits, and properly gapped.

To inspect you spark plug:

1. Pull on the spark plug cap to remove it.
2. Unscrew the spark plug from the generator using the spark plug wrench included with this product (see figure 20).
3. Visually inspect the spark plug. If it is cracked or chipped, discard and replace with a new spark plug. We recommend using a F6RTC spark plug such as NGK BPR5ES.
4. Measure the plug gap with a gauge (see figure 21). The gap should be 0.7-0.8 mm (0.028-0.031 in).
5. If you are re-using the spark plug, use a wire brush to clean any dirt from around the spark plug base and then re-gap the spark plug.

6. Screw the spark plug back into its place on the generator using the spark plug wrench.
7. Replace the spark plug cap.

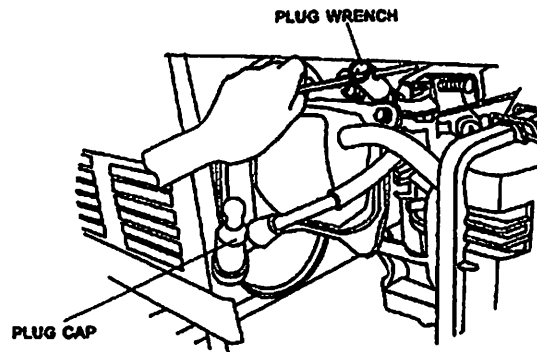


Figure 20- Removing the spark plug

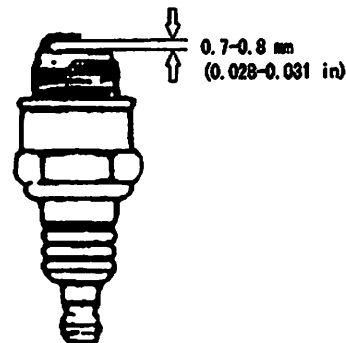


Figure 21- Measuring the spark plug gap

Emptying the Gas Tank

Before storing your generator for extended periods of time, you should drain your generator of gasoline.

To drain the generator of gas:

1. Turn the fuel valve to the "OFF" position.
2. Remove the fuel filter cup (see "*Removing the Fuel Filter Cup*" earlier in this section).
3. Empty the fuel filter cup of any fuel.
4. With a receptacle underneath the generator to catch the gas, turn the fuel valve to the "ON" position. Drain all the gas from the generator.
5. Turn the fuel valve to the "OFF" position.
6. Replace the fuel filter cup.
7. Store the emptied gasoline in a suitable place.

⚠CAUTION: Do not store fuel from one season to another.

STORAGE/TRANSPORT PROCEDURES

⚠ Caution: Never place any type of storage cover on the generator while it is still hot.

When transporting or storing your generator for extended periods of time:

- Empty the gas tank (see "*Emptying the Gas Tank*" in the "*Maintenance*" section).
- Disconnect the spark plug.
- Do not obstruct any ventilation openings.
- Keep the generator in a cool dry area.

GENERATOR SPECIFICATIONS

AC Output

	XP4400H	XP4400EH
Rated Wattage	3500W	3500W
Surge Wattage	4400W	4400W
Rated Voltage	120/240V	120/240V
Rated Frequency	60Hz	60Hz
Phase	Single	Single

DC Output

	XP4400H	XP4400EH
Voltage	12V	12V
Amperage	8.3A	8.3A
Dimensions (in):	Length=23.2 Width=17 Height=17	Length=23.2 Width=17 Height=17

Engine

	XP4400H	XP4400EH
Engine type	4-stroke OHV single cylinder with forced air cooling system	
Ignition system	Non-contact transistor	
Displacement	200cc	
Starting type	Recoil	Electric
Fuel tank capacity:	15L(3.96US gal.)	
Oil capacity	0.6L(20fl oz.)	
Run time on 50% load	14hrs	12 hrs
Noise Level	< 69dB	

TROUBLESHOOTING

Problem	Cause	Solution
Engine will not start	Engine switch is set to "OFF".	Set engine switch to "ON".
	Fuel valve is turned to "CLOSED".	Turn fuel valve to "OPEN" position.
	Choke is open.	Close the choke
	Engine is out of gas.	Add gas.
	Engine is filled with contaminated or old gas	Change the gas on the engine.
Engine will	Spark plug is dirty.	Clean spark plug.
not start (continued from page 19)	Spark plug is broken.	Replace spark plug.
	Generator is not on level surface.	Move generator to a level surface to prevent low oil shutdown from triggering.
	Oil is low	Add or replace oil.
Engine runs but there is no electrical output	Circuit breaker is off.	Set the circuit breaker to the "ON" position.
	Bad connecting wires/cables.	If you are using an extension cord, try a different one.
	Bad electrical device connected to generator.	Try connecting a different device.
Generator runs but does not support all electrical devices connected.	Generator is overloaded	Try connecting fewer electrical loads to the generator.
	Shorten one of the connected devices.	Try disconnecting any faulty or short-circuited electrical loads.
	Air cleaner is dirty.	Clean or replace air cleaner.

GENERATOR ASSEMBLY AND MOUNTING

Generator is supplied with a wheel kit. If you want to install the wheel kit on your unit, please follow the instructions below. If you will not be using the wheel kit, skip this section.

1. Place the bottom of the generator cradle on a flat, even surface. Temporarily place unit on blocks to ease assembly.
2. Secure the support leg to the cradle with cap screws (M8 x 16) and lock nuts (M8) (see *figure 22*).
3. Secure the axle to the cradle with cap screws (M8 x 16) and lock nuts (M8) (see *figure 23*).
4. Slide a wheel over the axle, then secure the wheel with a retaining pin. (see *figure 24, Figure 25, Figure 26*).
5. Position the handles on the cradle and attach, cap screws (M8 x 16) and lock nuts (M8) (*Figure 27, Figure 28*).
6. Check that all fasteners are tight.



Figure 22



Figure 23



Figure 24



Figure 25



Figure 26



Figure 27

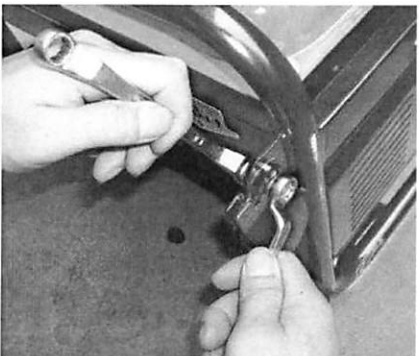
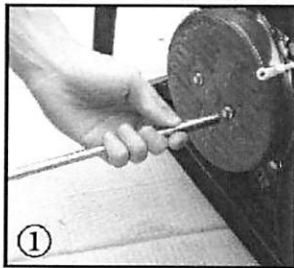
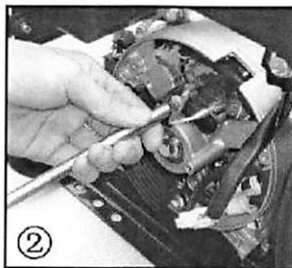


Figure 28

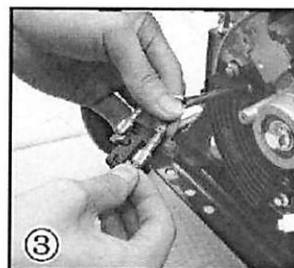
CHANGE THE CARBON-BRUSH



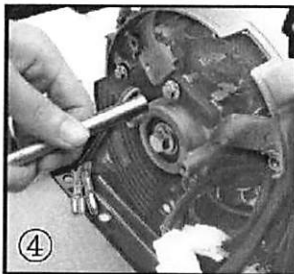
① Remove the 2 bolts (M5x12) on the generator back-cover



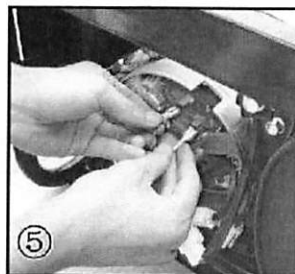
② Remove the bolt (M5x16) holding the carbon brush.



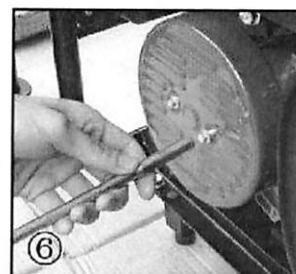
③ Remove the 2 wires from the AVR on the carbon brush.



④ Install the new carbon brush with bolt (M5x16)

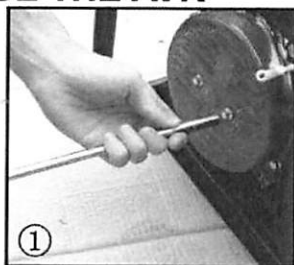


⑤ Insert and connect the 2 wires from the AVR, be sure to connect + and - correctly.

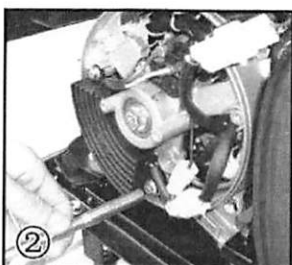


⑥ Replace the back cover of the generator and secure with the 2 bolts (M5x12)

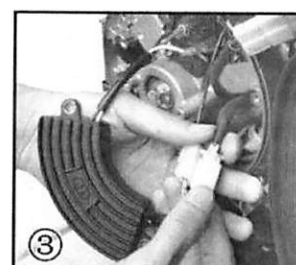
CHANGE THE AVR



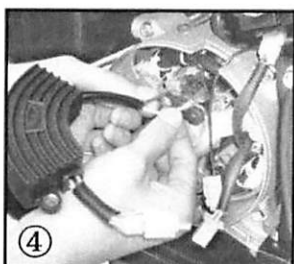
① Remove the 2 bolts (M5x12) on the generator back cover.



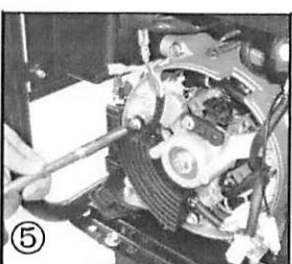
② Remove the 2 bolts (M5x16) holding the AVR.



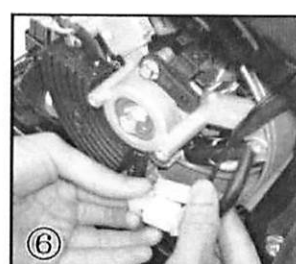
③ Disconnect the wire clip.



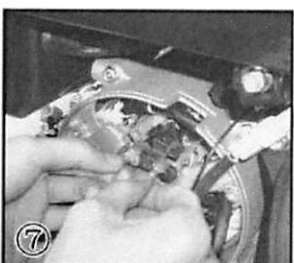
④ Remove the 2 wires of the AVR from the carbon brush.



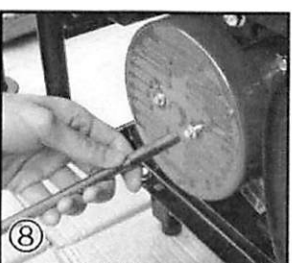
⑤ Install the new AVR with the 2 bolts (M5x16).



⑥ Reconnect the wire clip.

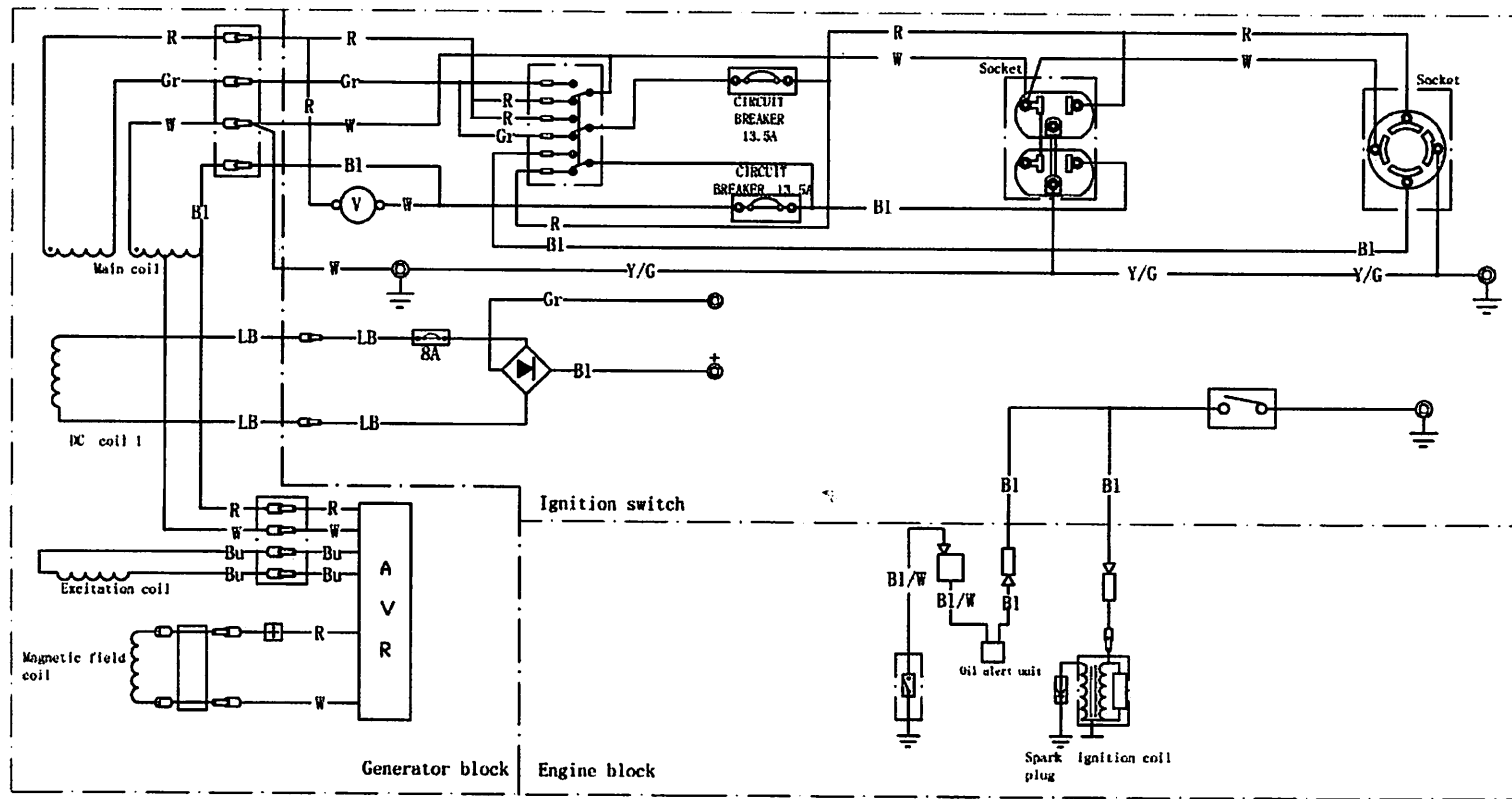


⑦ Connect the 2 wires to the carbon brush, be sure to connect the + and - correctly.



⑧ Replace the back cover of the generator and secure with the 2 bolts (M5x12).

WIRING DIAGRAM (XP4400H)



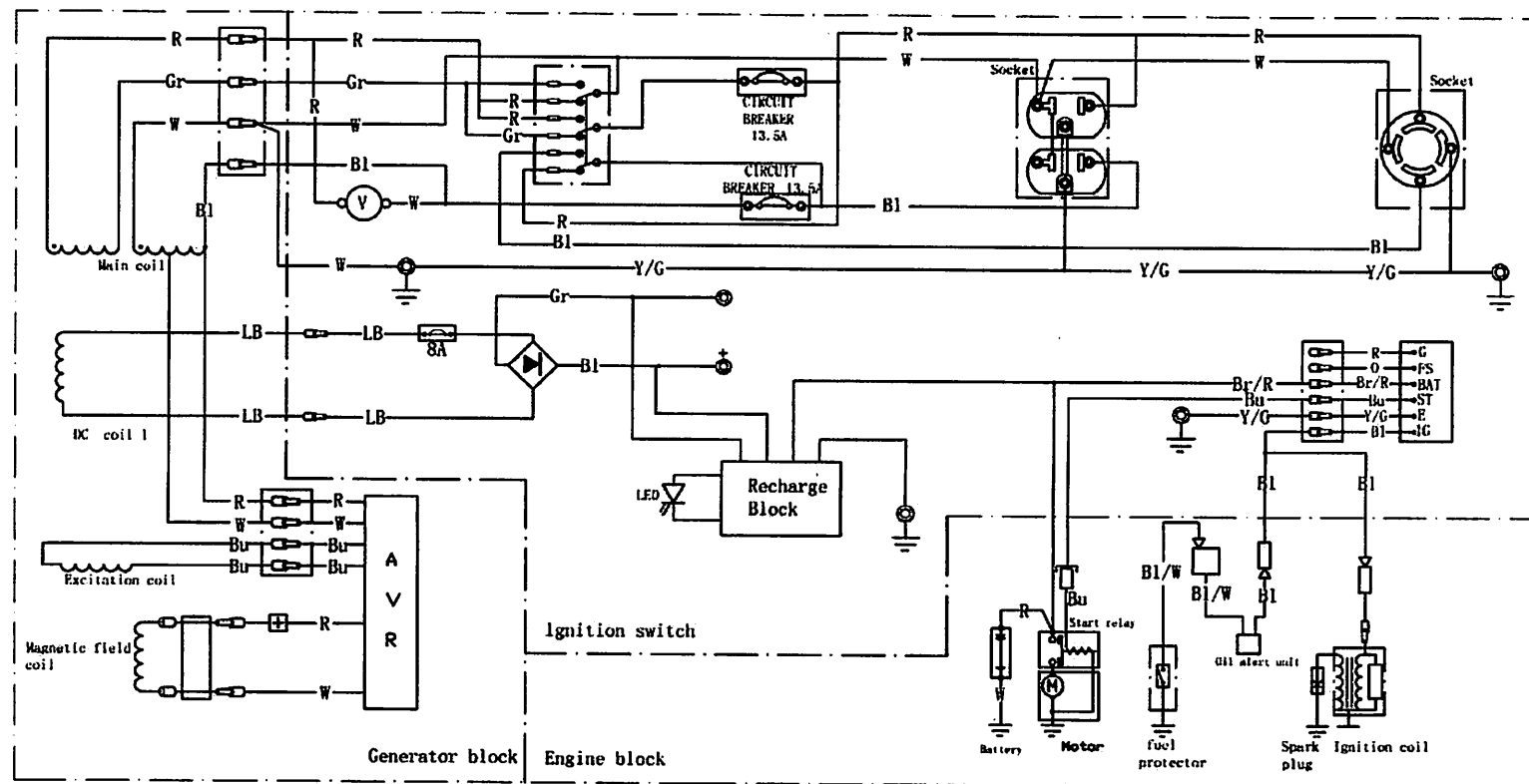
Ignition switch connecting

B1	Black	Br	Brown
O	Orange	Br/R	Brown/Red
Bu	Blue	LB	Light blue
Gr	Gray	Y/G	Yellow/Green
R	Red	W	White

	IG	E	BAT	ST	FS	G
OFF	○	○			○	○
ON						
Start			○	○		

WIRING DIAGRAM OF 120V/240V GENERATOR SET

WIRING DIAGRAM (XP4400EH)



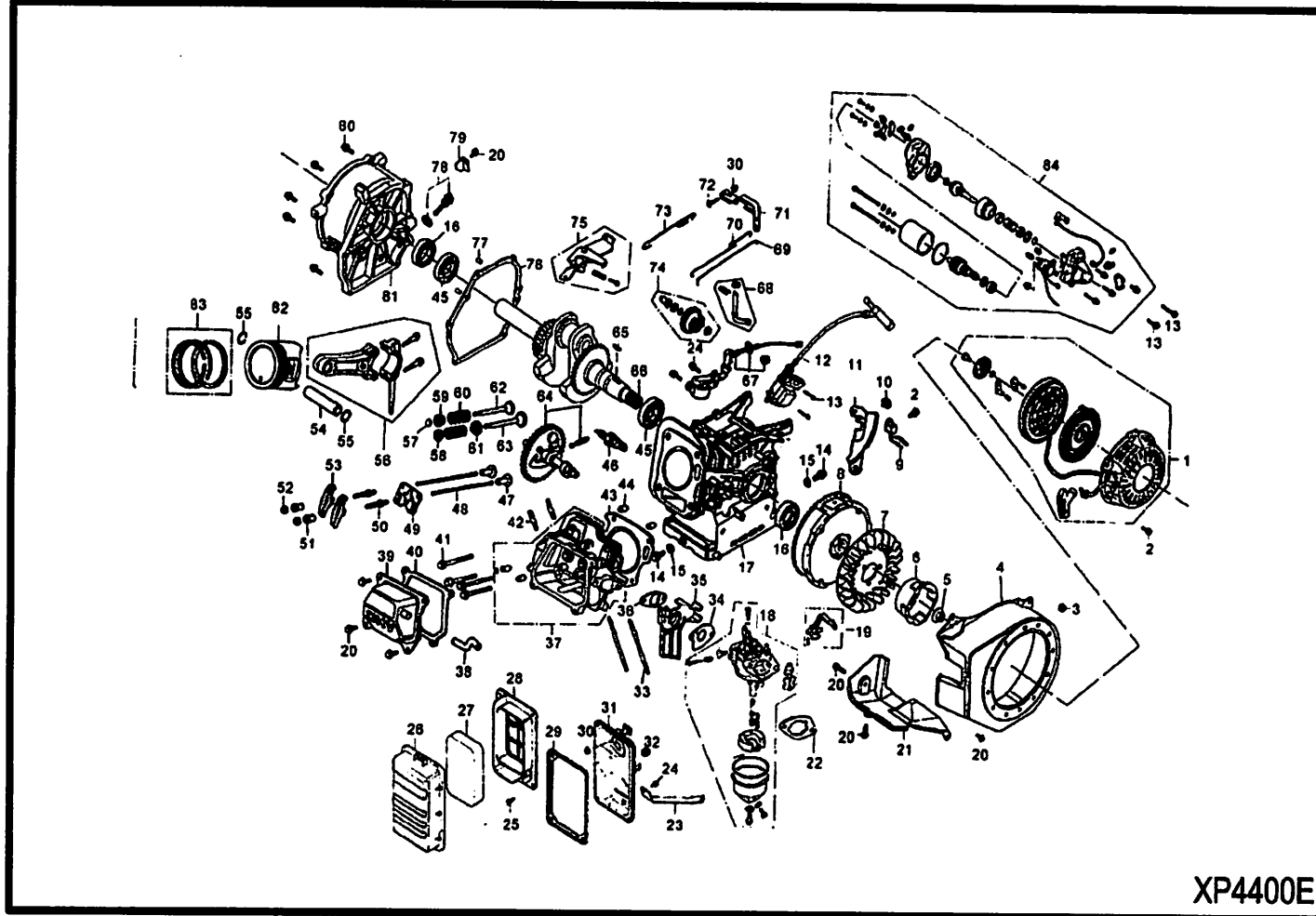
B1	Black	Br	Brown
O	Orange	Br/R	Brown/Red
Bu	Blue	LB	Light blue
Gr	Gray	Y/G	Yellow/Green
R	Red	W	White

Ignition switch connecting

	IG	E	BAT	ST	FS	G
OFF						
ON						
Start						

WIRING DIAGRAM OF 120V/240V GENERATOR SET

XP4400E ENGINE EXPLODED



PARTS LIST

Part No.	Article Name	Qty	Cross Reference	Reference No.
1	Recoiler COMP	1	DJ168F-16121-K	XP4400E-1
2	Flange Bolt M8*8	4	GBT5787-88-8	XP4400E-2
3	Grommet Drain Hole	1	DJ168F-16118	XP4400E-3
4	Covering Fan COMP	1	DJ170N-16121-A	XP4400E-4
5	Flange, Nut M14	1	GBT6177/10-N-14	XP4400E-5
6	Starting Pulley	1	DJ168F-16000-A	XP4400E-6
7	Cooling Fan	1	DJ168F-16002-A	XP4400E-7
8	Flywheel COMP	1	DJ168F-16200-I	XP4400E-8
9	Oil Blocker	1	DJ168F-16300-A	XP4400E-9
10	Clip, Oil blocker	1	**SEE REF NO.	XP4400E-10
11	Side Plate	1	DJ170S-11400-A	XP4400E-11
12	Coil ASSY, Ignition	1	DJ168F-16100-C	XP4400E-12
13	Flange Bolt M8*25	2	GBT5787-88-25	XP4400E-13
14	Bolt, Drain plug	2	DJ168F-11004-A	XP4400E-14
15	Washer, Drain plug	2	DJ168F-11005-A	XP4400E-15
16	Oil seal, 25*41*6	2	DJ168F-11014-A	XP4400E-16
17	Crank Case ASSY	1	DJ170F-11100-C	XP4400E-17
18	LPG Carburetor ASSY	1	DJ170FD-14100-C	XP4400E-18
19	Lever COMP, Choke	1	DJ168F-14119	XP4400E-19
20	Flange Bolt M8*12	11	GBT5787-88-16	XP4400E-20
21	Shroud COMP	1	DJ168F-11012-A	XP4400E-21
22	Gasket, Carburetor to Air cleaner	1	DJ168F-14027-A	XP4400E-22
23	Stay, Air cleaner	1	DF2500H-14205-A	XP4400E-23
24	Flange Bolt M8*12	3	GBT5787-88-12	XP4400E-24
25	Bolt, M5*12	4	GBT5787-B5-14	XP4400E-25
26	Cover COMP, Air cleaner	1	DJ168F-14204	XP4400E-26
27	Element, Air cleaner	1	DJ170F-14201	XP4400E-27
28	Seperator, Air cleaner	1	DJ168F-14202	XP4400E-28
29	Seal, air cleaner	1	DJ168F-14206	XP4400E-29
30	Flange nut M8	2	GBT6177-N-6	XP4400E-30
31	Case COMP, air cleaner	1	DJ168F-14205-A	XP4400E-31
32	Grommet Fender	1	DJ168F-14014-A	XP4400E-32
33	Bolt Head, 6*94	2	DJ168FD-14001-A	XP4400E-33
34	Gasket, Carburetor	1	DJ168F-14005-A	XP4400E-34
35	Heat Isolator, Carburetor	1	DJ168F-14004-A	XP4400E-35
36	Packing, Heat Isolator	1	DJ168F-14003-B	XP4400E-36
37	Cylinder Head COMP	1	DJ170F-11200-B	XP4400E-37
38	Breather	1	DJ168FD-11013-A	XP4400E-38
39	Cover COMP, Cylinder head	1	DJ168F-11300-C	XP4400E-39
40	Gasket, Cylinder head	1	DJ168F-11011-A	XP4400E-40
41	Flange Bolt M8*60	4	GBT5787-88-60	XP4400E-41
42	Bolt Head, M8*32	2	DJ168F-14002-A	XP4400E-42
43	Gasket, Cylinder head	1	DJ170F-11010-C	XP4400E-43
44	Pin, Dowel 10*16	2	DJ168F-11009-A	XP4400E-44
45	Radial Ball Bearing(6025)	2	GB278-89-6205	XP4400E-45

Part No.	Article Name	Qty	Cross Reference	Reference No.
46	Spark Plug	1	DJ168F-18500-A	XP4400E-46
47	Valve Lifter	2	DJ170F-13009-A	XP4400E-47
48	Push Rod	2	DJ170F-13008-B	XP4400E-48
49	Plate, Push rod guide	1	DJ168F-13300-A	XP4400E-49
50	Bolt, Pivot	2	DJ168F-13202-A	XP4400E-50
51	Nut, Valve rocker arm	2	DJ168F-13203-A	XP4400E-51
52	Nut, Pivot Adjust	2	DJ168F-13204-A	XP4400E-52
53	Valve Rocker Arm	2	DJ168F-413201-A	XP4400E-53
54	Piston Pin	1	DJ170F-12002-A	XP4400E-54
55	Clip, Piston pin	2	DJ168F-12003-A	XP4400E-55
56	Connecting Rod ASSY	1	DJ170F-12200-B	XP4400E-56
57	Valve Rocker	1	DJ168F-13006-A	XP4400E-57
58	Retainer, Intake Valve spring	1	DJ168F-13004-A	XP4400E-58
59	Retainer, EX Valve spring	1	DJ168F-13005-A	XP4400E-59
60	Valve Spring	2	DJ168F-13003-A	XP4400E-60
61	Valve Spring Seat	1	DJ168F-13010-A	XP4400E-61
62	Valve Exhaust	1	DJ168F-13001-A	XP4400E-62
63	Valve, Intake	1	DJ168F-13002-A	XP4400E-63
64	Camshaft	1	DJ168F-13100-B	XP4400E-64
65	Key, 25*18	1	DJ168F-12104	XP4400E-65
66	Crankshaft	1	DJ168F-12100-BB	XP4400E-66
67	Switch ASSY, Oil level	1	DJ168F-18200-A	XP4400E-67
68	Governor Shaft	1	DJ168F-15001-A	XP4400E-68
69	Rod, Governor arm	1	DJ168F-15008-A	XP4400E-69
70	Spring, Throttle return	1	DJ170F-15008-A	XP4400E-70
71	Governor Arm	1	DJ168F-15004-A	XP4400E-71
72	Bolt, Governor arm	1	DJ168F-15005-A	XP4400E-72
73	Governor Spring	1	DJ170F-15007-A	XP4400E-73
74	Governor ASSY	1	DJ168F-15100-A	XP4400E-74
75	Control ASSY	1	DJ168FD-15200-A	XP4400E-75
76	Packing, Case cover	1	DJ170F-11003-B	XP4400E-76
77	Pin, Dowel 8*14	2	DJ168F-11002-F	XP4400E-77
78	Cap, Oil filler	1	DJ168F-11007-A	XP4400E-78
79	Plat	1	DF1800H-33016-A	XP4400E-79
80	Flange Bolt M8*32	6	GBT5787-88-35	XP4400E-80
81	Crankcase Cover	1	DJ168FD-11001-C	XP4400E-81
82	Piston	1	DJ170F-12001-B	XP4400E-82
83	Piston Ring Set	1	DJ170F-12300-A	XP4400E-83
84	Start Motor	1	DJ168F-18600-A	XP4400E-84

XP4400E

PARTS LIST

Part No.	Article Name	Qty	Cross Reference	Reference No.
85	Clip, Tube	4	**SEE REF NO.	XP4400E-85
86	Pressure Release Valve	1	**SEE REF NO.	XP4400E-86
87	Gasoline engine, Whole set	1	DJ170FD-BD	XP4400E-87
88	Frame COMP	1	XP4400E-31100-B	XP4400E-88
89	Bottom Rubber A	2	DF2500H-31201-A	XP4400E-89
90	Bottom Rubber B	2	DF2500H-31202-A	XP4400E-90
91	Flange Nut M8	18	DBT6177-N-8	XP4400E-91
92	Flange Nut M8	4	GBT889-N-8	XP4400E-92
93	Cushion, Frame	4	**SEE REF NO.	XP4400E-93
94	Rubber Pad, Frame	2	DF2500H-14304-A	XP4400E-94
95	Earth Terminal Set	1	34107	XP4400E-95
96	Circuit Breaker	1	34206-100	XP4400E-96
97	Receptacle (30A)	1	34204-003	XP4400E-97
98	Receptacle (20A)	2	34204-005	XP4400E-98
99	DC Output Post	2	34204-038	XP4400E-99
100	Engine Switch	1	34203-002	XP4400E-100
101	Control Panel	1	XP4400E-34101-A	XP4400E-101
102	Sub Harness	1	34213-002	XP4400E-102
103	Voltage Option Switch	1	34202-008	XP4400E-103
104	Voltage Meter	1	34205-001	XP4400E-104
105	Diode ASSY	1	34210-001	XP4400E-105
106	Fuse	1	**SEE REF NO.	XP4400E-106
107	Control Panel Case	1	34102-A	XP4400E-107
108	Boot, Main Wire Harness	1	34109	XP4400E-108
109	Boot, AC Output Wire	1	34117	XP4400E-109
110	Wire Harness ASSY	1	34212-001	XP4400E-110
111	Battery	1	31300-001	XP4400E-111
112	Positive Wire, Battery	1	31038-001	XP4400E-112
113	Battery Cover	1	DF1800H-31033-A	XP4400E-113
114	Negative Wire, Battery	1	31040-001	XP4400E-114
115	Flange Bolt M5*12	2	GBT5789-B5-16	XP4400E-115
116	Alternator Cover	1	DF1800H-33006-B	XP4400E-116
117	Flange Bolt M6*125	4	DF3500H-33015-A	XP4400E-117
118	Supporting Stand	1	DF1800H-33005-A	XP4400E-118
119	Bolt M8*180	1	DF3500H-33003-A	XP4400E-119
120	Plain Washer 10	1	GBT93-LW-8	XP4400E-120
121	Bearing 6204-2RS	1	GB276-89-6204	XP4400E-121
122	Rotator COMP	1	DF3500H-33110-B	XP4400E-122
123	Stator & Rotator ASSY	1	DF3000H33103-B-23802	XP4400E-123
124	Generator Fan	1	DF2500H-33023	XP4400E-124
125	Stator Cover	1	DF3500H-33129	XP4400E-125
126	Stator ASSY	1	DF3500H-33120	XP4400E-126
127	Stripe, Fuel Tank	1	DF2500H-14322-D	XP4400E-127
128	Fuel Tank	1	DF2500H-14300-B	XP4400E-128
129	Fuel Filter	1	14307	XP4400E-129

PartNo.	Article Name	Qty	Cross Reference	Reference No.
130	Cap	1	14306	XP4400E-130
131	Fuel Sensor	1	14303	XP4400E-131
132	Screw M5*10	2	GBT819-B-5	XP4400E-132
133	Gasket, Fuel Tank	1	14313	XP4400E-133
134	Washer	4	14311	XP4400E-134
135	Collar	4	14305	XP4400E-135
136	Cushion	4	14304	XP4400E-136
137	Outlet Pipe 4.5*165	1	DF168FD-14007-C	XP4400E-137
138	Tube Clip	2	DJ188F-14008-A	XP4400E-138
139	Fuel Cock	1	DF2500H-14302-A	XP4400E-139
140	Handles	2	DF63800H-31058-C	XP4400E-140
141	Flange Bolt M8*16	17	GBT889-N-8X20	XP4400E-141
142	Muffler	1	DF2500H-14400-E	XP4400E-142
143	Muffler Gasket	1	DJ188F-14006-A	XP4400E-143
144	Exhaust Pipe COMP	1	DJF2500H-14009	XP4400E-144
145	Flange Bolt M8*25	2	GB5787-B-6	XP4400E-145
146	Exhaust Pipe Gasket	1	DJ188F-14010-A	XP4400E-146
147	Muffler Guard	1	DF2500H-14018-B	XP4400E-147
148	Muffler Stay	1	**SEE REF NO.	XP4400E-148
149	Supporting Plate	1	**SEE REF NO.	XP4400E-149
150	Wheel ASSY	1	XP4400E-WK	XP4400E-150
151	Pin	2	DF2500H-31019-B	XP4400E-151
152	Washer 20	2	**SEE REF NO.	XP4400E-152
153	Wheel COMP	2	31017-F	XP4400E-153
154	Well Shaft	1	DF3000H-31018-F	XP4400E-154
155	Bracket	2	DF3000H-31070-E	XP4400E-155
156	Voltage Regulator	1	DF2500H-33011-A	XP4400E-156
157	Brush ASSY	1	DF3500H-33001	XP4400E-157
158	Circuit Protector (10A)	1	34208-004	XP4400E-158
159	Recharge Indicator	1	**SEE REF NO.	XP4400E-159
160	OC 12V Voltage Regulator	1	34224-001	XP4400E-160
161	Gas tube	1	**SEE REF NO.	XP4400E-161
162	Intake tube, carburetor	1	**SEE REF NO.	XP4400E-162
163	Pressure tube	1	**SEE REF NO.	XP4400E-163
164	Clip 8	2	**SEE REF NO.	XP4400E-164

EXHIBIT E

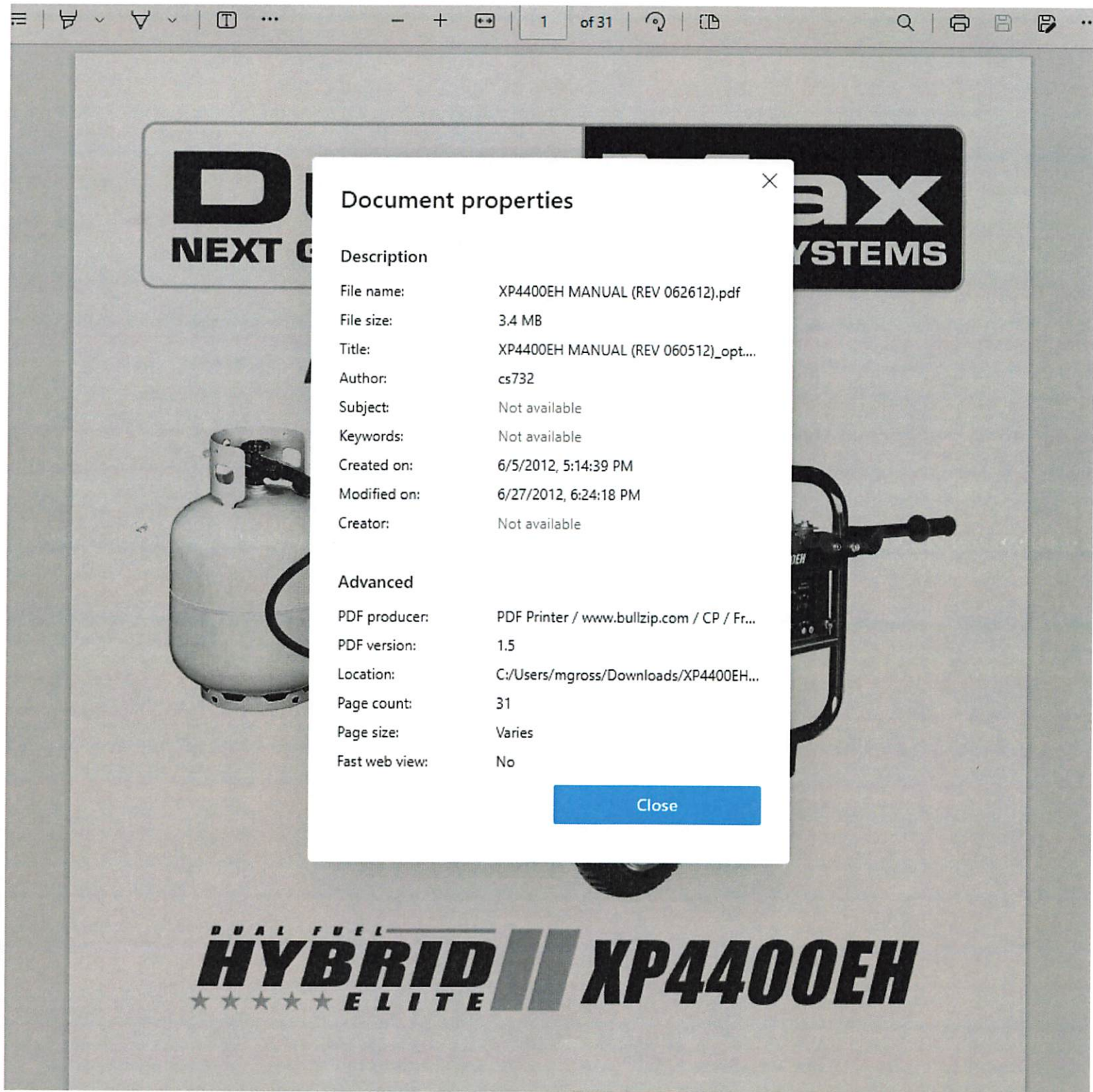


EXHIBIT F

DuroMax[®] XP4400EH

NEXT GENERATION POWER SYSTEMS



FEATURES:

- Clean running propane will not gum up or foul the carburetor for quick and reliable starts every time.
- Unlike gasoline, liquid propane can be stored for years.
- Flexible fuel line allows for connecting to tanks of any size.
- Designed to run on gasoline or propane for maximum convenience.
- Durable DuroMax 7.0 HP air cooled engine
- Heavy duty steel frame with four point, fully isolated motor mounts for smooth and quiet operation.
- Electric Key start for easy starting when you need it.
- Wheel kit w/ front handles for easy transporting.
- Full power panel with engine shutoff switch, volt meter, circuit breaker and power outlets.
- (2) Fully protected 120 volts outlets & (1) 120 volts/240 volts twist-lock outlet.
- Approximately 20 hour run time (propane) & 12 hour run time (gasoline)
- All steel 4 gallon fuel tank with ez-read gauge.
- Low oil shut-off protects engine.
- Super quiet muffler reduces engine noise.
- Idle control holds RPM at a constant level even under heavy loads for fuel savings and noise reduction.



Equipped with
Sturdy Handles
& Knobby Tires



Fully Loaded Power Panel

SPECIFICATIONS:

- Max AC Output: 4400 Watts
- Rated AC Output: 3500 Watts
- Current (120V/240V AC & 12V DC)
- (2) 120V 20A 3-prong outlets (Standard Household plug)
- (1) 120V/240V 30A twist lock (NEMA L14-30 3 Pole 4 Wire)
- Low oil shutoff.
- EPA approved engines.
- Super quiet exhaust w/ built-in spark arrestor.
- Electric Key and EZ-Pull recoil start
- 7.0 HP air cooled engine
- Fuel Tank Capacity: 4 gallon
- Decibel: 69 dBA
- Gasoline Run-Time [@ 50% Max Output]: 12.0 hrs
- Propane Run-Time [@ 50% Max Output]: 20.0 hrs



OUTLETS:

- 120V 20A 3-Prong Outlet: (Standard Plug)
- 120V 20A 3-Prong Outlet: (Standard Plug)
- 120V/240V 30A Twist Lock: (NEMA L14-30 4 Pole Wire)
- 10A 12V Utility Connection

DUAL FUEL



EXHIBIT G

DuroMaxx XP4400EH

NEXT GENERATION POWER SYSTEMS

FEATURES:

- Clean running pro
- Unlike gasoline, l
- Flexible fuel line
- Designed to run c
- Durable DuroMax
- Heavy duty steel
- Electric Key start
- Wheel kit w/ front
- Full power panel
- (2) Fully protecte
- Approximately 20
- All steel 4 gallon
- Low oil shut-off p
- Super quiet muffl
- Idle control holds



Fully Lo

OUTLETS:

- 120V 20A 3-Prong Outlet: (Standard Plug)
- 120V 20A 3-Prong Outlet: (Standard Plug)
- 120V/240V 30A Twist Lock: (NEMA L14-30 4 Pole Wire)
- 10A 12V Utility Connection

DUAL FUEL



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Description

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Advanced

PDF producer: Adobe Photoshop for Windows -- Imag...
PDF version: 1.4
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Page size: 11.33 x 14.67 in (portrait)
Fast web view: Yes

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parts every time.

et operation.

ets.

d noise reduction.



rk arrestor.

t

Output]: 12.0 hrs

Output]: 20.0 hrs

EXHIBIT H



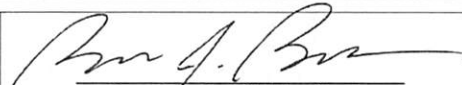
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2013 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Chongqing Maifeng Power Machinery Co., Ltd
(U.S. Manufacturer or Importer)
Certificate Number: DCMGS.2081GL-004

Effective Date:
02/27/2013

Expiration Date:
12/31/2013


Byron J. Bunker, Division Director
Compliance Division

Issue Date:
02/27/2013

Revision Date:
N/A

Manufacturer: Chongqing Maifeng Power Machinery Co., Ltd
Engine Family: DCMGS.2081GL
Certificate Number: DCMGS.2081GL-004
Useful Life : 125 Hours / 2 Years
Engine Class : Nonhandheld-Class I
Fuel : LPG/Propane
Gasoline (up to and including 10% Ethanol)
Emission Standards : HC + NOx (g/kW-hr) : 10
CO (g/kW-hr) : 610

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547), 40 CFR Part 1054, 40 CFR Part 1068 and 40 CFR Part 60 (stationary only and combined stationary and mobile), and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued for the following small nonroad engine family, more fully described in the documentation required by 40 CFR Part 1054 and produced in the stated model year.

This certificate of conformity covers only those new small nonroad engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 1054 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 1054. This certificate of conformity does not cover small nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and 1068, Subpart E and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 1054. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 1054, 40 CFR Part 1068.

This certificate does not cover small nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

EXHIBIT I

Duro
NEXT GENERATION

Max
POWER SYSTEMS

DUAL  FUEL



DUAL FUEL
HYBRID // XP4400EH
★ ★ ★ ★ ★ **ELITE**

OWNERS MANUAL

Product Support

Product Information, Application, Service Info & Warranty Questions

Please email us at support@duromaxgenerators.com
or call (800) 629-3325 Monday – Friday 6:00 am – 6:00 pm (PST)

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FEATURES

- Dual Fuel Option, LPG or Gasoline.
- Durable 7.0 HP, Air Cooled Overhead Valve Engine.
- Heavy Duty Steel Frame with Four Point Fully Isolated Motor Mounts for Smooth and Quiet Operation.
- Wheel and Handle Kit for Easy Transporting.
- Full Power Panel with Engine Shutoff Switch, Volt Meter, Circuit Breaker, and Power Outlets.
- (2) Fully Protected 120V Outlets & (1) 120V/240V Twist-Lock Outlet.
- 8 Hour Run Time.
- All Steel 4.0 Gal. Fuel Tank with EZ-Read Gauge.
- Low Oil Shut-Off Protects Engine.
- Super Quiet Muffler Reduces Engine Noise.
- Meets EPA Emission Standards.

This manual provides information regarding the operation and maintenance of these products. We have made every effort to ensure the accuracy of the information in this manual. We reserve the right to change this product at any time without prior notice.

Notice Regarding Emissions

Engines that are certified to comply with U.S. EPA emission regulations for SORE (Small off Road Equipment), are certified to operate on regular unleaded gasoline, and may include the following emission control systems: (EM) Engine Modifications and (TWC) Three-Way Catalyst (if so equipped).

GENERAL SAFETY PROCEDURES

Please familiarize yourself with the following safety symbols and words:

The safety alert symbol is used with one of the safety words (**DANGER**, **CAUTION**, or **WARNING**) to alert you of hazards. Please pay attention to these hazard notices both in this manual and on the generator.

DANGER: Indicates a hazard that will result in serious injury or death if instructions are not followed.

WARNING: Indicates a strong possibility of causing serious injury or death if instructions are not followed.

CAUTION: Indicates a possibility of personal injury or equipment damage if instructions are not followed.

⚠ **DANGER:** This generator produces poisonous carbon monoxide gas when running. This gas is both odorless and colorless. Even if you do not see or smell gas, carbon monoxide may still be present. Breathing this poison can lead to headaches, dizziness, drowsiness, and eventually death.

- Use outdoors **ONLY** in non-confined areas.
- Keep several feet of clearance on all sides to allow proper ventilation of the generator.

⚠ **WARNING:** The exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

⚠ **WARNING:** This generator may emit highly flammable and explosive gasoline vapors, which can cause severe burns or even death. A nearby open flame can lead to an explosion even if not directly in contact with gas.

- Do not operate near an open flame.
- Do not smoke near generator.
- Always operate on a firm, level surface.
- Always turn generator off before refueling. Allow generator to cool for at least 2 minutes before removing fuel cap. Loosen cap slowly to relieve pressure in tank.
- Do not overfill gas tank. Gas may expand during operation. Do not fill to the top of the tank.
- Always check for spilled gas before operating.
- Empty the gasoline tank before storing or transporting the generator.
- Before transporting, turn fuel valve to the off position and disconnect the spark plug.

GENERAL SAFETY PROCEDURES (Continued)

⚠ WARNING: This generator produces a powerful voltage, which can result in electrocution.

- ALWAYS ground the generator before using it (see the "Grounding the Generator" portion of the "PREPARING THE GENERATOR FOR USE section).
- Generator should only be plugged into electrical devices, either directly or with an extension cord. NEVER connect to a building electrical system without a qualified electrician. Such connections must comply with local electrical laws and codes. Failure to comply can create a backflow of power, which may result in serious injury or death to utility workers.
- Use a ground fault circuit interrupter (GFCI) in highly conductive areas such as metal decking or steel work. GFCIs are available in-line with some extension cords.
- Do not use uncovered in rainy or wet conditions.
- Do not touch bare wires or receptacles (outlets).
- Do not allow children or non-qualified persons to operate.

⚠ WARNING: This generator produces heat when running. Temperatures near exhaust can exceed 150°F (65°C).

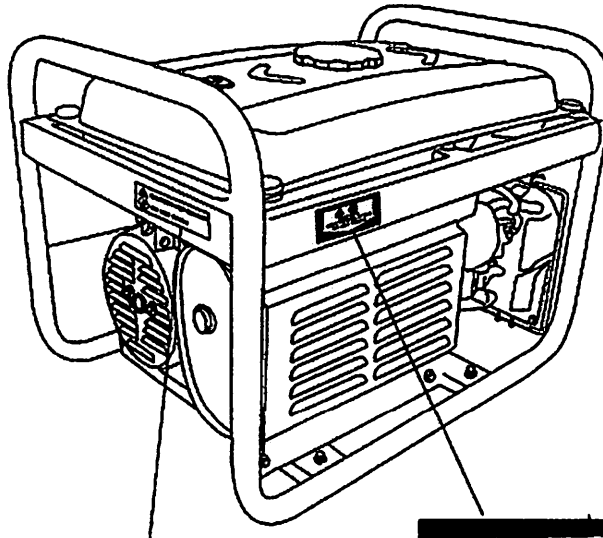
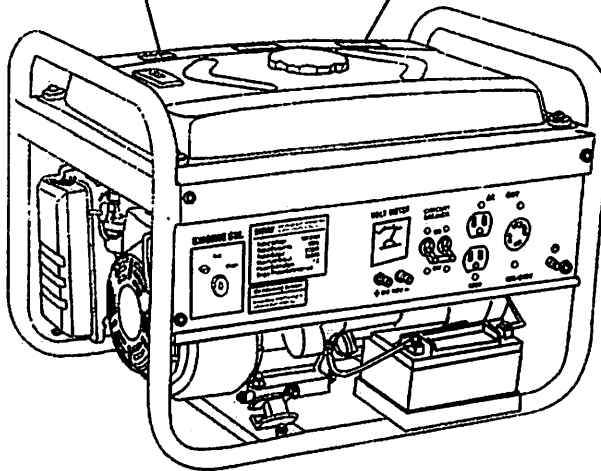
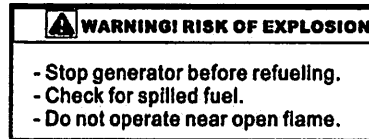
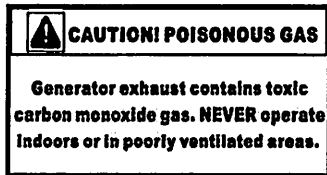
- Do not touch hot surfaces. Pay attention to warning labels on the generator denoting hot parts of the machine.
- Allow generator to cool several minutes after use before touching engine or areas which heat during use.

⚠ CAUTION: Misuse of this generator can damage it or shorten its life.

- Use the generator only for its intended purposes.
- Operate only on dry, level surfaces.
- Allow generator to run for 3 - 5 minutes before connecting any electrical devices.
- Shut off and disconnect any malfunctioning devices from generator.
- Do not exceed the Wattage capacity of the generator by plugging in more electrical devices than the unit can handle (see "PRECAUTIONS-OVERLOADING THE GENERATOR").
- Do not turn on electrical devices until after they are connected to the generator.
- Turn off all connected electrical devices, and turn off the breaker, before stopping the generator.

GENERAL SAFETY PROCEDURES (Continued)

In addition to the above safety notices, please familiarize yourself with the safety and hazard markings on the generator.



PACKAGE CONTENTS

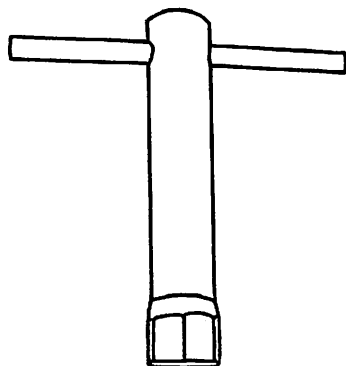
Your generator comes with the items listed below. Please check to see that all of the following items are included with your generator.



Screw driver



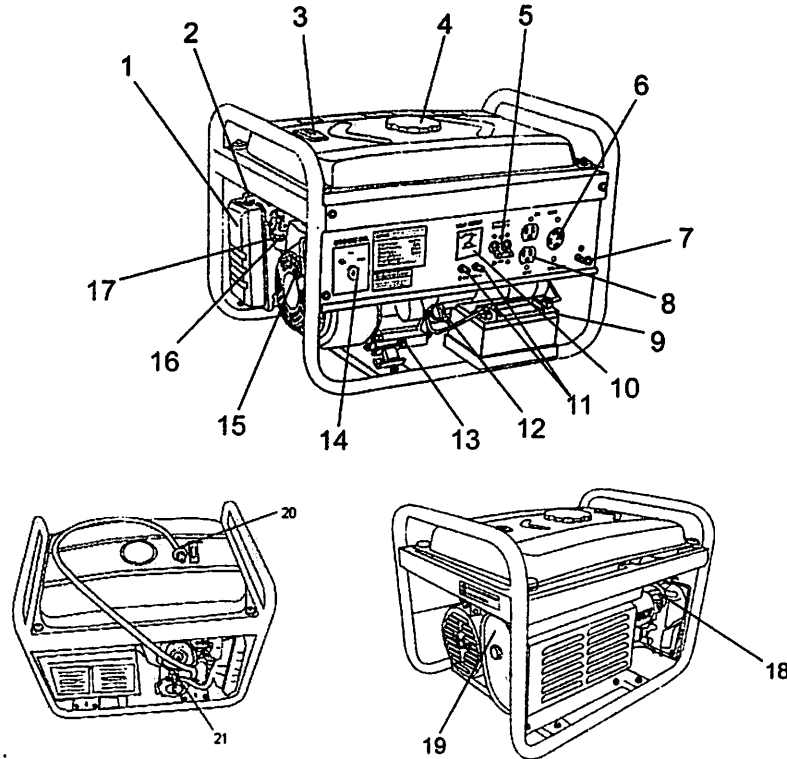
Spanner



Spark plug wrench

GENERATOR COMPONENTS

Please familiarize yourself with the locations and functions of the various components and controls of your generator.



1. **Air Cleaner** - a removable, cleanable, oiled, sponge-like element that cleans the air going into the engine.
2. **Choke Lever** - Allows the airflow into the carburetor to be restricted to assist in starting the engine.
3. **Fuel Gauge** - Indicates the amount of fuel in the gasoline tank.
4. **Fuel Cap** - Allows access to fill the gasoline tank.
5. **Circuit Breaker** - Resettable switch that protects the generator from electrical overload.
6. **120/240v 4-Prong Receptacle** - Use to connect electrical devices that run 120 or 240 Volt, 60Hz, single phase, AC current (NEMA L14-30).
7. **Ground Terminal** - Connect a ground wire here to properly ground the generator.
8. **120v 3-Prong Receptacle** - Use to connect electrical devices that run 120 Volt, 60 Hz, single phase, AC current (NEMA 5-20).
9. **Battery** - 12V DC 7ah Battery that powers the Electric Start System.
10. **Volt Meter** - Provides reading of voltage output.
11. **12v DC Charging Posts** - DC Output for charging batteries or running small DC powered items.
12. **Oil Filler Cap** - Use to add or check the oil.
13. **Oil Fill and Dipstick** - Use to add or check the oil.
14. **Engine Switch** - 3 Position Switch to "Start", "Run", or turn "Off" the generator.
15. **Recoil Start** - Easy Pull Recoil Start to start the engine without the electric start.

GENERATOR COMPONENTS (Continued)

16. **Fuel Filter Cup** - Traps dirt and water in gasoline before it enters the engine.
17. **Fuel Valve** - On/Off Valve that allows fuel into the engine.
18. **Spark plug** – Provides ignition to the engine.
19. **Muffler** – Reduces engine emissions and reduces noise.
20. **Propane Tank Connector and Hose** – Connects the LPG tank to the LPG Regulator.
21. **Propane Regulator and Pressure Release Valve** - Provides a regulated LPG Fuel supply to the engine. *(Intended for use with a LPG Source of 10 PSI or more.)*

PREPARING THE GENERATOR FOR USE

Using the Generator for the First Time

If you are using the generator for the first time, there are a few steps you must take to prepare it for operation.

Step 1 - Add oil

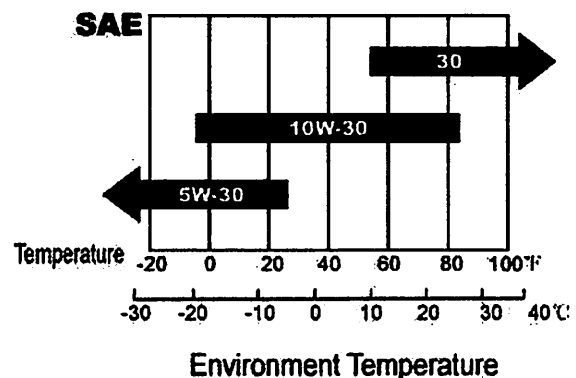
The generator requires engine oil to operate properly. The generator, when new from the package contains no oil in the crankcase. You must add the proper amount of oil before operating the generator for the first time. This amount, which is equal to the oil capacity of the engine crankcase can be found on the chart in figure 1. When filling the engine with oil in the future, please refer to this chart.

Model Number	XP4400EH
Engine Oil Capacity	20 fl. Oz. (0.6L)

Figure 1 – Generator Oil Capacity

• Do not apply engine oil with additives or 2-stroke gasoline engine oil. They don't have enough lubrication, and may shorten the engine's service life.

• Engine oil recommended: SAE 10W-30. Viscosity varies with regions and temperatures. Choose your oil viscosity using the chart to the right.



PREPARING THE GENERATOR FOR USE (Continued)

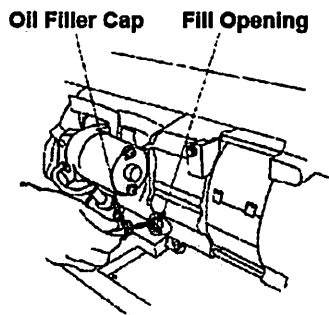


Figure 2 – Unscrewing the Oil Cap



Figure 3 – Adding Oil

To add Oil, follow these steps:

1. Make sure the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap from the engine as shown in figure 2.
3. Using a funnel, add the appropriate amount of oil, as found in figure 1, into the crankcase. You will know the crankcase is full when the oil level has reached the lower lip of the opening you have just poured the oil into. (see figure 3.)
4. Replace oil filler cap.

Step 2 - Add Gasoline

- **WARNING: Gasoline and gas fumes are highly flammable.**
 - Do not fill tank near an open flame.
 - Do not overfill. Always check for fuel spills.

To ensure that the generator runs smoothly use only FRESH, UNLEADED GAS WITH AN OCTANE RATING OF 87 OR HIGHER.

To add gasoline:

1. Make sure the generator is on a level surface.
2. Unscrew gas cap and set aside (NOTE: the gas cap may be tight and hard to unscrew).
3. Slowly add unleaded gasoline to the fuel tank. Be careful not to overfill. Please refer to the chart in figure 4 to find the gas capacity of your generator model. The fuel gauge on the top of the gas tank indicates how much gasoline is in the generator gas tank.

NOTE: Gas can expand. Do not fill the gas tank to the very top.

4. Replace fuel cap and wipe up any spilled gasoline with a dry cloth.

PREPARING THE GENERATOR FOR USE (Continued)

IMPORTANT:

- Never use an oil/gasoline mixture.
- Never use old gas.
- Avoid getting dirt or water in the fuel tank.
- Gas can age in the tank and make it hard to start up the generator in the future.
- Never store generator for extended periods of time with fuel in the tank.

Model #	XP4400EH
Gas Tank Capacity	3.96 US Gallons (15L)

Figure 4 - Gas Tank Capacity

Step 3 - Ground the Generator

- **WARNING:** Failure to properly ground the generator can result in electrocution.

Ground the generator by tightening the grounding nut against grounding wire (see figure 5). A generally acceptable grounding wire is a No. 12 AWG (American Wire Gauge) stranded copper wire. This grounding wire should be connected at the other end to a copper or brass-grounding rod that is driven into the earth. Grounding codes can vary by location. Please contact a local electrician to check the grounding regulations for your area.

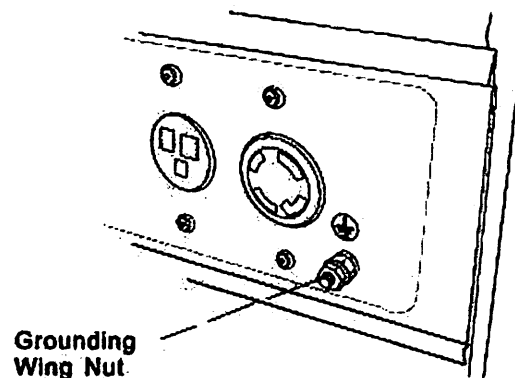


Figure 5 - Attaching the Grounding Wire to the Generator

Subsequent Use of the Generator

If this is not your first time using the generator there are still steps you should take to prepare it for operation.

IMPORTANT: At this point you should be familiar with the procedures described in the first portion of this section entitled "Using the Generator for the First Time." If you have not yet read this section, go back and read it now.

Step 1- Check the oil

The generator is equipped with an automatic shutoff to protect it from damage due to low oil. Nonetheless, you should check the oil level of the engine before each use to ensure that the engine crankcase has a sufficient amount.

To check the oil level:

1. Make sure the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap.
3. With a dry cloth, wipe the oil off of the stick on the inside of the cap.
4. Insert the dipstick as if you were replacing the cap and then remove again. There should now be oil on the stick. If there is no oil on the stick, or oil only at the very end of the stick, you should add oil until the engine crankcase is filled (see "Adding Oil" portion of the "Maintenance" section).
5. Be sure to replace the cap when finished checking oil.

NOTE: The oil capacity for your generator can be found in the "Specifications" section of this manual.

Step 2 - Check the Gas Level

Before starting the generator, check to see that there is sufficient gasoline in the gas tank. The fuel gauge on top of the generator will indicate the gas level in the tank. Add gas if necessary according to the steps in the "Adding Gasoline" portion of the "Maintenance" section.

- **WARNING:** Gasoline and gasoline fumes are highly flammable.
 - Do not fill tank near an open flame.
 - Always allow engine to cool for several minutes before refueling.
 - Do not overfill (check the "Specifications" section for the tank capacity of your generator).
 - Always check for fuel spills.

Starting the Generator: Gasoline

⚠ CAUTION:

LPG must be shut off when using gasoline!

Gasoline must be shut off when using LPG!

Disconnect all electrical loads from the generator before attempting to start!

1. Make sure that the AC circuit breaker is in the OFF position. The generator may be hard to start if a load is connected.
2. Turn the fuel valve lever to the ON position.
3. The choke will need to be closed, slide the choke lever out to the CLOSED position.
4. Turn the engine switch to the START position and hold it there for 5 seconds or until the engine starts.

WARNING:

- Operating the starter motor for more than 5 seconds can damage the motor. If the engine fails to start, release the switch and wait 10 seconds before operating the starter again.
 - If the speed of the starter motor drops after a period of time, it is an indication that the battery should be recharged.
5. When the engine starts, allow the engine switch to return to the ON position.
 6. Push the choke to the OPEN position as the engine warms up.

Stopping the Engine

In an emergency:

⚠ To stop the engine in an emergency, move the engine switch to the OFF position.

In normal use:

1. Turn the AC circuit breaker to the OFF position. Disconnect any DC Load attached to the DC Output on the front panel.
2. Turn the engine switch to the OFF position.
3. Turn the fuel valve lever to the OFF position.

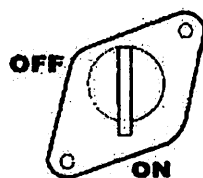


Figure 6 - fuel valve in the "on" position

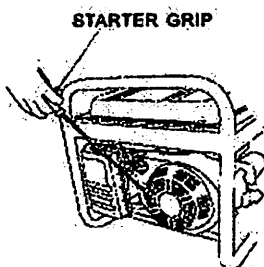


Figure 8 - Pulling the recoil start.



Figure 7 - Choke in the close position

Starting the Generator: Propane

⚠ CAUTION:

LPG must be shut off when using gasoline!

Gasoline must be shut off when using LPG!

Disconnect all electrical loads from the generator before attempting to start!

1. Make sure that the AC circuit breaker is in the OFF position. The generator may be hard to start if a load is connected.
2. Turn the gasoline fuel valve to the "OFF" position.
3. Connect the propane gas hose to the regulator/decompression valve.
4. Connect the propane collar to the gas supply and then turn on the propane gas supply.
5. Press the button on top of the pressure release valve down two or three times.
6. The choke operates differently on propane gas.
 - a. If the engine is warm (the unit was run recently) start with the choke half open.
 - i. Wait 30 seconds and then push the choke lever all the way to the "OPEN" position.
 - b. If the engine is cold (the unit was not run recently) start with the choke "OPEN".
7. Turn the engine key switch to the START position and hold it there for 5 seconds, or until the engine starts.

WARNING:

- Operating the starter motor for more than 5 seconds can damage the motor. If the engine fails to start, release the switch and wait 10 seconds before operating the starter again.
 - If the speed of the starter motor drops after a period of time, it is an indication that the battery should be recharged.
8. When the engine starts, allow the engine switch to return to the ON position.

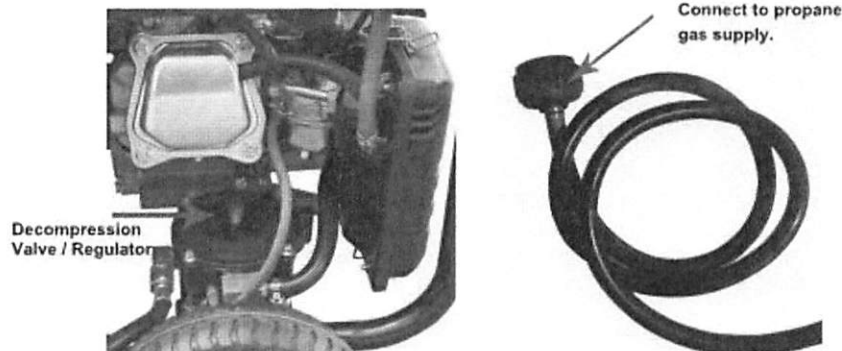
Stopping the Engine

In an emergency:

- ⚠ To stop the engine in an emergency, move the engine switch to the OFF position.

In normal use:

1. Turn the AC circuit breaker to the OFF position. Disconnect DC battery charging cables.
2. Turn the engine switch to the OFF position.
3. Turn OFF the Propane Gas Supply.



Starting the Generator: Propane (Continued)

**⚠ WARNING: WHEN USING THE GENERATOR WITH LPG
MAKE SURE THERE IS NO POSSIBLE IGNITION SOURCE CLOSE TO THE GENERATOR.**

1. Before using, make sure all of the LPG connectors and hoses are well connected and sealed.
2. Connect electrical devices to generator ONLY after the engine runs smoothly. (There may be remnant gasoline in the carburetor; this can cause unsteady engine performance for several minutes)
3. If the propane gas leaks, shut off the LPG supply first and then quickly unplug or turn off any electrical devices powered by the unit.
4. When stopping the engine, unplug or turn off any electrical devices, turn off the Main Circuit Breaker and then turn off the LPG Supply. After the engine has stopped turn the KEY to 'OFF' position.

Using the Generator

Once you have allowed the engine to run for several minutes, you may connect electrical devices to the generator.

AC Usage

- You may connect electrical devices running on AC current according to their wattage requirements.
- The chart in figure 9 shows the rated and surge wattage of your generator according to its model number.
- The *rated wattage* corresponds to the maximum wattage the generator can output on a continuous basis.
- The *surge wattage* corresponds to the maximum amount of power the generator can output for a short period of time. Many electrical devices such as refrigerators require short bursts of extra power, in addition the rated wattage listed by the device, to stop and start their motors. The surge wattage ability of the generator covers this extra power requirement.

Model Number	Rated (Running) Wattage	Surge (Peak) Wattage
XP4400EH	3500	4400

Figure 9 - Generator Wattage by Model Number

The total running wattage requirement of the electrical devices connected to the generator should not exceed the rated wattage of the generator itself. To calculate the total wattage requirement of the electrical devices you wish to connect, find the rated (or running) wattage of each device. This number should be listed somewhere on the device or in its instruction manual.

If you cannot find this wattage, you may calculate it by multiplying the Voltage requirement by the Amperage drawn: $\text{Watts} = \text{Volts} \times \text{Amps}$. If these specifications are not available you may *estimate* the Watts required by your device by using the chart in figure 10.

Using the Generator (Continued)

Tool or Appliance	Rated (Running) Watts	Additional Surge Watts
Electric water heater (40 gal)	4000	0
Hot plate	2500	0
Saw-radial arm	2000	2000
Electric stove	1500	0
Saw-circular	1500	1500
Air compressor (1HP)	1500	3000
Window air conditioner	1200	1800
Saw-miter	1200	1800
Microwave	1000	2000
Well water pump	1000	1500
Reciprocating saw	960	1040
Sump pump	800	1200
Refrigerator freezer	800	1200
Furnace blower	800	1300
Computer	800	0
Electric drill	600	900
Television	500	0
Deep freezer	500	800
Garage door opener	480	600
Stereo	400	0
Box fan	300	600
Clock radio	300	0
Security system	180	0
DVD player/VCD	100	0
Common light bulb	75	0

Figure 10- Estimated wattage requirements of common electrical devices.

Once you have found the rated wattage requirement of each electrical device, add these numbers to find the total rated wattage you wish to draw from the generator. If this number exceeds the rated wattage of the generator, DO NOT connect all these devices. Select a combination of electrical devices, which has a total rated wattage lower than or equal to the rated wattage of the generator.

⚠ CAUTION - The generator can only run at its surge wattage capacity for a very short time. Connect only electrical devices requiring a rated (running) wattage equal to or less than the rated wattage of the generator. Never connect devices requiring a rated wattage equal to the surge wattage of the generator.

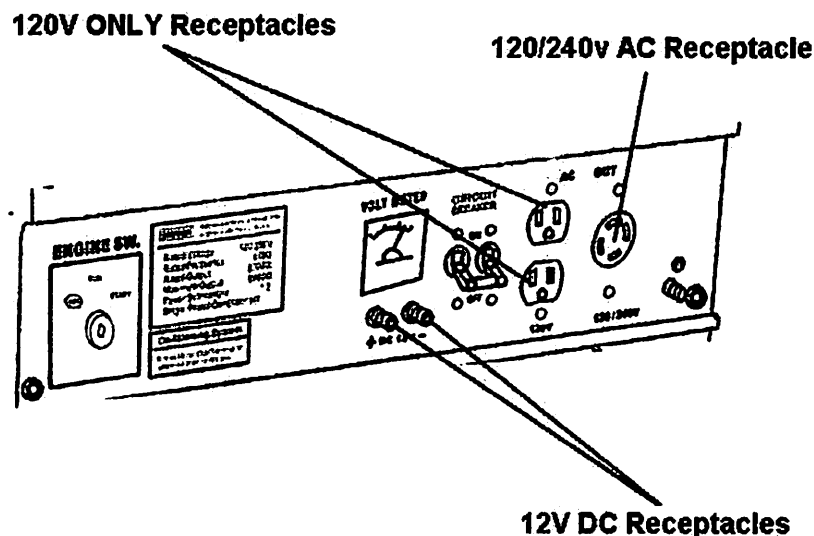
NOTE: The above wattage figures are estimates only. Try to check the wattage listed on your electrical devices before consulting this chart.

Connecting a Load to the Generator

NOTE: Be sure to attach devices to the correct receptacle (outlet).

- 120v devices can be directly connected to the 120v ONLY receptacles.
 - 120v devices can be connected to the 120/240v receptacle using an appropriate adapter.
 - 240v devices can ONLY be connected the 240v receptacle.
1. Plug in each electrical device with the device turned off.
 2. Switch the circuit breaker to the "ON" position.
 3. Turn on the connected electrical devices in the order of the amount of power they require beginning with the device with the highest rated Wattage requirement.

⚠ CAUTION: Do not connect 50Hz or 3-phase loads to the generator.



VOLTAGE SELECTOR SWITCH

The voltage selector switches the dual 120v AC windings of the generator to produce "120V ONLY" or "120/240V". If a 240V appliance is connected to the 4-prong receptacle, the switch must be in the "120/240V" position. If only 120V appliances are being connected to the generator select the "120V ONLY" position to double the 120v amperage.

WARNING:

Only change the Voltage Selector Switch with the main AC Circuit Breaker OFF. The generator can be seriously damaged if the Voltage Selector Switch is changed with the breaker ON.

Choosing the Right Power Cord

Long or thin cords can drain the power provided to an electrical device by the generator. When using such cords, allow for a slightly higher rated wattage requirement for the electrical device. See Figure 12 for recommended cords based on the power requirement of the electrical device.

DEVICE REQUIREMENTS		WIRE GAUGE BY LENGTH (ft.)				
AMPS	WATTS (120V/240V)	10	25	50	100	150
5	600/1200	18	16	14	12	10
10	1200/2400	16	14	12	10	8
15	1800/3600	14	12	10	8	6
20	2400/4800	12	10	8	6	4
25	3000/6000	10	8	6	4	4
30	3600/7200	8	6	4	4	NR
40	4800/9600	6	4	4	NR	NR
50	6000/1200	4	4	2	NR	NR
*NR = NOT RECOMMENDED						

Figure 12 – Minimum Extension Cord Requirements

DC Usage

- ⚠ **CAUTION:** The DC receptacle is for recharging 12 Volt automotive-type batteries only. Do not connect any other device to this receptacle.
- ⚠ **CAUTION:** Never try to jump start a car with your generator.

To connect a 12V battery to the DC battery charger on the front panel:

1. Connect one charging wire to the positive terminal on the battery and the other charging wire to the negative terminal on the battery.
 2. Connect the free end of the positive wire to the positive receptacle (outlet) on the generator.
 3. Start the generator.
 4. Carefully connect the free end of the negative wire to the negative receptacle on the generator.
 5. When disconnecting, always disconnect the wires from the generator first to avoid a spark.
- ⚠ **DANGER:** Stored batteries emit highly explosive hydrogen gas when charged. Batteries also contain acid, which can cause severe chemical burns.
 - ⚠ Do not allow open flames or cigarettes nearby for several minutes after charging a battery.
 - ⚠ Always wear protective goggles and rubber gloves when charging a battery.
 - ⚠ If battery acid gets on your skin, flush with water.
 - ⚠ If battery acid gets in your eyes, flush with water and call a physician immediately.
 - ⚠ If battery acid is swallowed, drink large quantities of milk and call a Physician immediately.

If your generator is the electric start model, once running, it will charge the battery on the generator automatically. While charging, you can see the recharge indicator light lit, after the battery is full, the light will turn off.

MAINTENANCE AND CARE

The Importance of Maintenance

Proper routine maintenance of your generator is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution.

Warning

Improper maintenance, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously injured or killed. Always follow the inspection and maintenance recommendations and schedules in this instruction manual.

⚠ Maintenance Safety

- Make sure the engine is off before you begin any maintenance or repairs.
- Let the engine and exhaust system cool before touching.
- To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks, and flames away from all fuel related parts.

Maintenance Schedule

Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load, high temperature operation, or use in unusually wet or dusty conditions, will require more frequent service.

SERVICE		REGULAR SERVICE PERIOD				
		BEFORE EACH USE	1 MO. OR 20 HRS.	3 MO. OR 50 HRS.	6 MO. OR 100 HRS.	12 MO. OR 300 HRS.
ENGINE OIL	CHECK					
	CHANGE					
AIR CLEANER	CHECK					
	CHANGE					
SEDIMENT CUP	CLEAN					
SPARK PLUG	CLEAN - ADJUST					
	REPLACE					
SPARK ARRESTER	CLEAN					
IDLE SPEED	CHECK- ADJUST					
VALVE CLEARANCE	CHECK- ADJUST					
COMBUSTION CHAMBER	CLEAN	500 HRS.				
FUEL TANK AND FILTER	CLEAN					
FUEL TUBE	CHECK	EVERY 24 MO. (REPLACE IF NECESSARY)				
TO BE PERFORMED AT MONTH INDICATED OR HOUR INTERVAL WHICH EVER COMES FIRST						

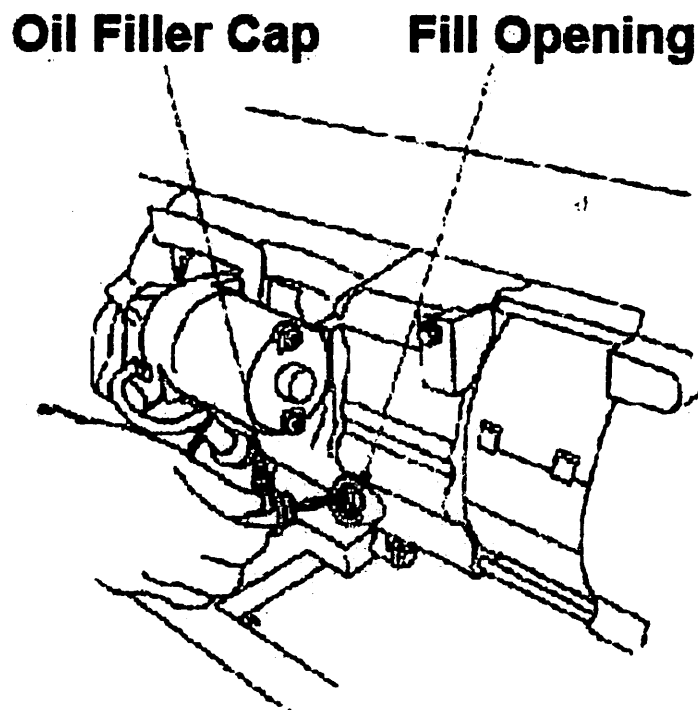
Figure 13 – Maintenance Schedule.

Checking the Oil

The generator is equipped with an automatic shutoff to protect it from running on low oil. Nonetheless, you should check the oil level of the generator before each use to ensure that the generator crankcase has a sufficient amount.

To check the oil level:

1. Make sure the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap (see figure 14).
3. With a dry cloth, wipe the oil off of the stick on the inside of the cap.
4. Insert the dipstick as if you were replacing the cap and then remove again. There should now be oil on the stick. If there is no oil on the stick, or oil only at the very end of the stick you should add oil until the engine crankcase is filled. See "Changing/Adding Oil" in this section.
5. Be sure to replace cap when you are finished checking the oil.



You should check the oil level of your generator according to the maintenance schedule in figure 13. When the oil level is low you will need to add oil until the level is sufficient to run the generator. The oil capacity of your generator engine is listed in figure 15.

Model Number	XP4400EH
Engine Oil Capacity	20 fl. Oz.

Figure 15 – Generator Oil Capacity