Defence Equipment and Support
Secretariat
#2043 Maple 0a
Ministry of Defence
Abbey Wood
Bristol BS34 8JH

Email: DES SEC-PolSec LE-JSC-WPNS@mod.gov.uk

[redacted]

[redacted]

Our Reference:
FOI2022/04182
Date:
13 April 2022

Dear [redacted]

Thank you for your email of 28 March 2022 requesting the following information:

> *"I would like to kindly ask if you could provide me with a digital copy of the Army Equipment Support Publication 1015-G-100-201 Generator Type B22 (LG) Operating Information under the Freedom of information act."*

I am treating your correspondence as a request for information under the Freedom of Information Act 2000 (FOIA).

A search for the information has now been completed within the Ministry of Defence, and I can confirm that all information in scope of your request is held and is attached at Annex A to this letter.

Under Section 16 of the Act (Advice and Assistance) please note that the first three pages of the publication display an incorrect reference number of 1015-K-100-201. This does not affect the details contained in the document which covers the operating information for Generator Type B22. The correct reference number of 1015-G-100-201 appears from the contents page onwards.

If you have any queries regarding the content of this letter, please contact this office in the first instance.

If you wish to complain about the handling of your request, or the content of this response, you can request an independent internal review by contacting the Information Rights Compliance team, Ground Floor, MOD Main Building, Whitehall, SW1A 2HB (e-mail CIO-FOI-IR@mod.gov.uk). Please note that any request for an internal review should be made within 40 working days of the date of this response.

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powers of the Information Commissioner can be found on the Commissioner's website at https://ico.org.uk/.

Yours sincerely

DE&S Secretariat

GENERATOR SET, ENGINE DRIVEN, BADNAMS BD22LG (GASOLINE) 2KW/28-32V DC CHARGING N1 1015-99-877-1684

OPERATING INSTRUCTIONS

Sponsored for use in the
UNITED KINGDOM MINISTRY OF DEFENCE
AND ARMED FORCES

BY

ARTILLERY SUPPORT SYSTEMS
KCU01

Publication Authority:

DEFENCE EQUIPMENT AND SUPPORT
ABBEY WOOD

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PRELIMINARY MATERIAL Page

OPERATING INFORMATION

Chap

Badnam Generator BD22LG

PREFACE

Sponsor: ARTILLERY SYSTEMS TEAM Abbey Wood

Publication Agency: Defence Equipment & Support

INTRODUCTION

1 Service users should forward any comments on this publication through the channels prescribed in AESP 0100-P-011-013. An AESP Form 10 is provided at the end of this publication; it should be photocopied and used for forwarding comments on this AESP.

2 AESPs are issued under Defence Council authority and where AESPs specify action to be taken, the AESP will of itself be sufficient authority for such action and also for the demanding of the necessary stores, subject to the provisions of Para 3 below.

3 The subject matter of this publication may be affected by Defence Council Instructions (DCIs), Standing Operating Procedures (SOPs) or by local regulations. When any such instruction, order or regulation contradicts any portion of this publication it is to be taken as the overriding authority.

RELATED AND ASSOCIATED PUBLICATIONS

Related publications

4 The Octad for the subject equipment consists of the publications shown opposite. All references are prefixed with the first eight digits of this publication.

Category/Sub-category			Information Level			
			1 User/ Operator	**2 Unit Maintenance**	**3 Field Maintenance**	**4 Base Maintenance**
1	0	Purpose and Planning Information	*	*	*	*
	1	Equipment Support Policy Directives	*	*	*	*
2	0	Operating Information	201	201	201	*
	1	Aide-Memoire	*	*	*	*
	2	Training Aids	*	*	*	*
3		Technical Description	201	201	201	*
4	1	Installation Instructions	*	*	*	*
	2	Preparation for Special Environments	*	*	*	*
5	1	Failure Diagnosis	201	201	201	*
	2	Maintenance Instructions	*	*	*	*
	3	Inspection Standards	*	*	*	*
	4	Calibration Procedures	*	*	*	*
6		Maintenance Schedules	601	601	601	*
7	1	Illustrated Parts Catalogues	711	711	711	*
	2	Commercial Parts Lists	*	*	*	*
	3	Complete Equipment Schedule, Production	*	*	*	*
	4	Complete Equipment Schedule, Service Edition (Simple Equipment)	741	741	741	*
	5	Complete Equipment Schedule, Service Edition (Complex Equipment)	*	*	*	*
8	1	Modification Instructions	811	811	811	*
	2	General Instructions, Special Technical Instructions and Servicing Instructions	822	822	822	*
	3	Service Engineered Modification Instructions (RAF only)	*	*	*	*

*Category/Sub-category not published

Associated publications

1015-K-100* (*all Octads) 105MM L118 LIGHT GUN

ABBREVIATIONS

6

Abbreviation	Meaning
BIT	Built-in test
Chap	Chapter
DC	Direct current
Fig	Figure
IFU	Interface Unit
LED	Light-emitting diode
Li-Ion	Lithium Ion
m	Metre
MSL	Mean sea level
NSN	NATO Stock Number
Ni-Cd	Nickel-Cadmium
Para	Paragraph
PBIT	Power-up built-in test

WARNINGS AND CAUTIONS

All WARNINGS and Cautions in this publication must be read, understood and strictly adhered to by all personnel working with the Badnam Generator and its ancillaries and associated equipment.

WARNINGS

(1) BEFORE ANY WORK IS CARRIED OUT ON THE EQUIPMENT, ENSURE THAT:

(1.1) THE EQUIPMENT HAS BEEN DISCONNECTED FROM ANY CHARGING OUTLET SOURCES.

(1.2) THE FUEL LINE HAS BEEN DISCONNECTED.

(1.3) DO NOT SMOKE OR USE NAKED LIGHTS WITHIN 20 FT (6.1M) OF THE EQUIPMENT.

(1.4) GASOLINE. GASOLINE VAPOUR IS EXPLOSIVE WHEN CONTAINED IN A CONFINED SPACE.

(1.5) GASOLINE. GASOLINE FUEL IS FLAMMABLE AND CONSTITUTES A FIRE HAZARD. SPECIAL CARE MUST BE TAKEN WHEN REFUELING, SHUTDOWN OR PERFORMING MAINTENANCE ACTIVITIES.

(1.6) PERSONAL INJURY. MANUAL LIFTING OF THE TOTAL EQUIPMENT MUST BE CARRIED OUT BY TWO PERSONS.

(1.7) TOXIC FUMES. IF THE GENERATOR IS OPERATED IN A CONFINED SPACE, ENSURE THAT THE EXHAUST GASES ARE VENTED TO THE OUTSIDE ATMOSPHERE

(1.8) FIRE HAZARD. WHEN THE JERRYCAN ADAPTOR AND HOSE ASSEMBLY IS STOWED, SEEPAGE OF FUEL CAN CONSTITUTE A FIRE HAZARD. ENSURE THAT THE JERRYCAN ADAPTOR AND HOSE ASSEMBLY IS DRAINED BEFORE STOWAGE.

(1.9) TOXIC FUMES. MATERIAL USED IN THE CONSTRUCTION OF THE GENERATOR SET MAY GIVE OFF TOXIC AND IRRITANT FUMES WHEN BURNT. DO NOT INHALE SMOKE OR FUMES IF THE GENERATOR SET IS INVOLVED IN A FIRE.

(1.10) FIRE HAZARD. BEFORE USING THE GENERATOR SET, OPERATORS MUST BE FAMILIAR WITH THE LOCATION OF SUITABLE FIRE EXTINGUISHING EQUIPMENT.

(1.11) DO NOT USE AN EXHAUST EXTENSION PIPE

CAUTIONS

(1) EQUIPMENT DAMAGE. Alternative lubricants are not to be used without authority.

(2) EQUIPMENT DAMAGE. Equipment damage will result if the correct tools are not used.

CHAPTER 1

OPERATING INSTRUCTIONS

CONTENTS

INTRODUCTION

1 This publication details the operating instructions for the Generator Type - BD22LG.

STARTING AND STOPPING ROUTINES - NORMAL CONDITIONS

Starting

2 The following is to be adhered to when starting:

2.1 Remove all external loads from the generator.

2.2 Ensure exhaust (Fig 1) is not obstructed.

2.3 Connect fuel line between generator (Fig 2) and fuel source (Fig 3).

2.4 Prime fuel line (Fig 4) - 3 to 5 pumps. Check that "air bubble" has been expelled from fuel filter.

2.5 ON/OFF switch (Fig 5) to **ON** position.

2.6 Pull choke out (Fig 6) if starting from cold.

2.7 Pull start handle (Fig 7). If generator does not start after 3 pulls, re-prime fuel line as in Fig 4.

2.8 Push choke in when generator is running evenly.

2.9 Connect load to generator.

Stopping

3 The following is to be adhered to when stopping:

3.1 ON/OFF switch (Fig 5) to **OFF** position.

3.2 Disconnect loads.

3.3 Disconnect fuel line.

Fig 1 Exhaust

Fig 2 Fuel line connection - fuel source

Fig 3 Fuel line connection-generator

Fig 4 Prime fuel line

Fig 5 ON/OFF position

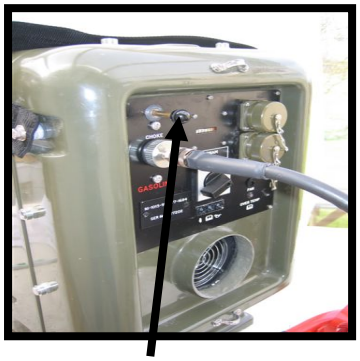

Fig 6 Choke control

Fig 7 Pull start handle

STARTING AND STOPPING - SEVERE COLD WEATHER CONDITIONS

4 In severe cold weather conditions (ambient temperature < -15 deg C) it is necessary to pre-heat the generator before starting. The LG battery is utilised during the generator pre-heating routine.

Starting

5

5.1 Insert the front panel air inlet blanking plate (Fig 8).

5.2 Ensure that the accessories bag (Fig 9) is secured across the rear panel.

NOTE

The air outlet vent should be fully covered by the accessories bag.

5.3 Using the patch lead provided as part of the LG accessories - connect battery output terminal to generator pre-heater socket (Fig 10) mounted adjacent to the pull start handle on the generator.

5.4 Observe that the YELLOW LED adjacent to the socket is illuminated. This indicates that the generator pre-heater is activated.

5.5 Wait until the GREEN (start) LED illuminates.

NOTE

GREEN LED will not illuminate until the internal temperature of the generator is at +25 deg C. At an ambient temperature of -35 deg C a wait of 45 minutes can be expected.

5.6 Connect fuel line between generator and fuel source.

5.7 Prime fuel line - 3 to 5 pumps. Check that 'air bubble' has been expelled from fuel filter.

5.8 ON/OFF switch to **ON** position.

5.9 Pull choke out.

5.10 Pull start handle. If generator does not start after 3 pulls, re-rime fuel line, as in Para 5.7.

5.11 When generator is running - remove front panel air inlet blanking plate.

5.12 Remove accessories bag from rear panel air access vent.

5.13 Push choke in when generator is running evenly.

5.14 Disconnect path lead between battery and generator pre-heater socket.

5.15 Connect load to generator.

Stopping

6

6.1 ON/OFF switch to **OFF** position.

6.2 Disconnect loads.

6.3 Disconnect fuel line.

Fig 8 Air inlet blanking plate

Fig 9 Accessories bag

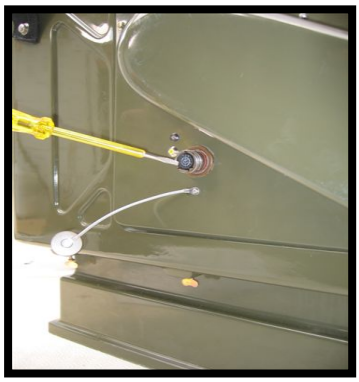

Fig 10 Pre-heater socket

CHAPTER 2

MAINTENANCE

CONTENTS

DAILY GENERATOR CHECKS

1 The following routines should be undertaken on a **daily basis or before use**:

1.1 Check fuel filter is clean (see Para 3).

1.2 Check oil level is correct (see Para 4).

1.3 Check air filter if operating in dust laden conditions (see Para 7).

1.4 Register running hours in log book.

200 RUNNING HOURS GENERATOR CHECKS

2 The following routines should be undertaken after every **200 generator running hours**:

2.1 Replace air filter (see Para 7).

2.2 Replace fuel filter (see Para 3).

2.3 Oil change (see Para 8).

2.4 Replace spark plug (see Para 5).

FUEL FILTER

3 Visually inspect fuel filter (Fig 11) for signs of contamination, indicated by discolouration of filter. If contamination is present, change filter. A spare filter and tie wraps are provided as part of the 1st line maintenance kit.

NOTES

(1) There is a further fuel filter located behind the fuel inlet connection on the front panel of the generator. This filter should be dismantled and cleaned if the generator runs erratically (Fig 12). When refitting this filter it is recommended that the 'O' ring is lubricated with a small amount of grease.

(2) When operating unit in high ambient temperatures (>40 deg C) performance of generator can be improved if the fuel source is elevated 0.5 m above the base of the generator.

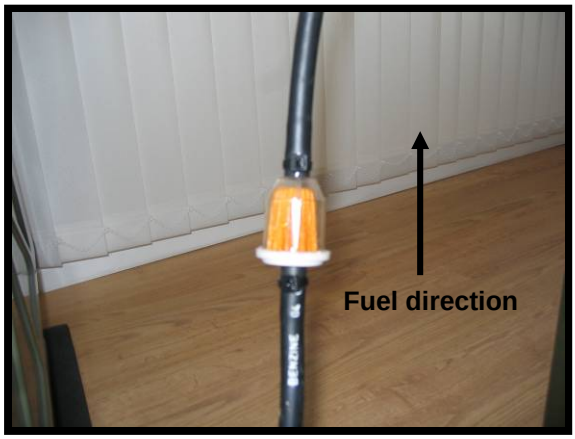

Fig 11 Fuel filter

Fig 12 Front panel in line fuel filter

OIL LEVEL

4

4.1 Disconnect pull start handle cover plate (Fig 13).

4.2 Remove engine inspection plate (Fig 14).

4.3 Remove oil filler plug (Fig 15).

4.4 Check that oil is visible within the filler neck (Fig 16).

NOTE

Outside casing shown removed for clarity.

4.5 Refill as required with clean oil of the correct specification. With the generator sitting on level ground - oil is at the correct maximum level when the oil is level with the top of the filler pipe neck (Fig 17).

NOTE

Outside casing shown removed for clarity.

4.6 Replace oil filler plug, engine inspection plate and pull start handle.

SPARK PLUG REMOVAL

5

NOTE

Ensure all loads and fuel lines are disconnected before undertaking this routine.

5.1 Remove generator top access plate (Fig 18).

5.2 Remove plug cap.

5.3 Remove spark plug with socket provided (Fig 19).

SPARK PLUG REPLACEMENT

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6.1 Insert spark plug with socket provided.

6.2 Replace plug cap.

6.3 Replace generator top access plate.

Fig 13 Pull start handle cover plate

Fig 14 Engine inspection plate

Fig 15 Oil filler plug

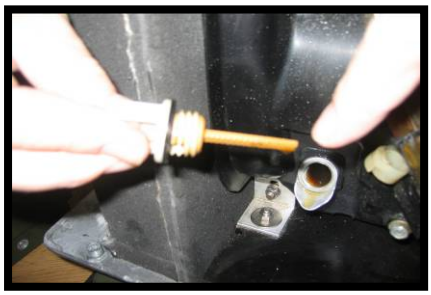


Fig 16 Oil level

Fig 17 Filling oil

Fig 18 Top access plate removal

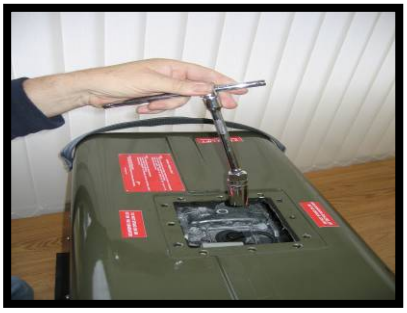


Fig 19 Spark plug removal tool

AIR FILTER

7

NOTE

Ensure all loads and fuel line are disconnected before undertaking this routine.

7.1 Disconnect pull start handle cover plate (Fig 20).

7.2 Remove engine inspection plate (Fig 21).

7.3 Remove air filter (Fig 22).

7.4 Clean/replace air filter components as required (Fig 23).

7.5 Reassemble air filter.

7.6 Replace engine inspection plate.

7.7 Replace pull start handle (Fig 24), taking care to align cover plate.

Fig 20 Pull start handle cover plate

Fig 21 Engine inspection plate

Fig 22 Air filter

Fig 23 Air filter components

Fig 24 Pull start handle cover plate alignment

OIL CHANGE

8

NOTES

(1) Ensure all loads and fuel lines are disconnected before undertaking this routine.

(2) Do not attempt to run generator with casing removed.

8.1 Remove generator top access panel (Fig 25).

8.2 Disconnect pull start handle plate (Fig 26).

8.3 Remove engine inspection plate (Fig 27).

8.4 Release casing from the front panel (Fig 28) by disengaging 6 snap screws and 2 retaining straps.

8.5 Release the 8 casing lower securing clips (Fig 29).

8.6 Withdraw casing by sliding casing to rear of unit (Fig 30).

8.6 Remove oil filler cap.

8.7 Drain old oil (Fig 31) into suitable container and dispose of as directed under local instructions.

8.8 Refill generator with 0.4 litres of new oil (Fig 32). With the generator sitting on level ground - oil is at the correct maximum level when the oil is level with the top of the filler pipe neck.

8.9 Replace oil filler cap.

8.10 Reassemble unit.

Fig 25 Top access panel

Fig 26 Pull start handle

Fig 27 Engine inspection plate

Fig 28 Front panel

Fig 29 Casing securing clips

Fig 30 Casing removal

Fig 31Draining oil

Fig 32 Filling oil

CHAPTER 3

AIR FREIGHT

CONTENTS

DRAIN-DOWN PROCEDURE

1 Prior to transportation by air, the generator should be drained of all fuel using the following procedure:

1.1 Disconnect pull start handle plate (Fig 1).

1.2 Remove engine inspection plate (Fig 2).

1.3 Turn the "drain-down" screw (Fig 3) two full turns anti-clockwise.

NOTE

A small amount of fuel will be discharged via the fuel drain pipes (Fig 4).

1.4 Retighten "drain-down" screw.

1.5 Reassemble unit.

REFILL OF CARBURETTOR

2 After transportation by air, it will be necessary to fill the carburettor using the following routine:

2.1 Disconnect pull start handle plate (Fig 1).

2.2 Remove engine inspection plate (Fig 2).

2.3 Connect fuel line between generator and fuel source.

2.4 Turn the "drain-down" screw (Fig 3) one full turn anti-clockwise.

2.5 Retighten "drain-down" screw.

2.6 Disconnect fuel line.

2.7 Replace engine inspection plate.

2.8 Replace pull start handle plate.

Fig 1 Pull start handle cover plate

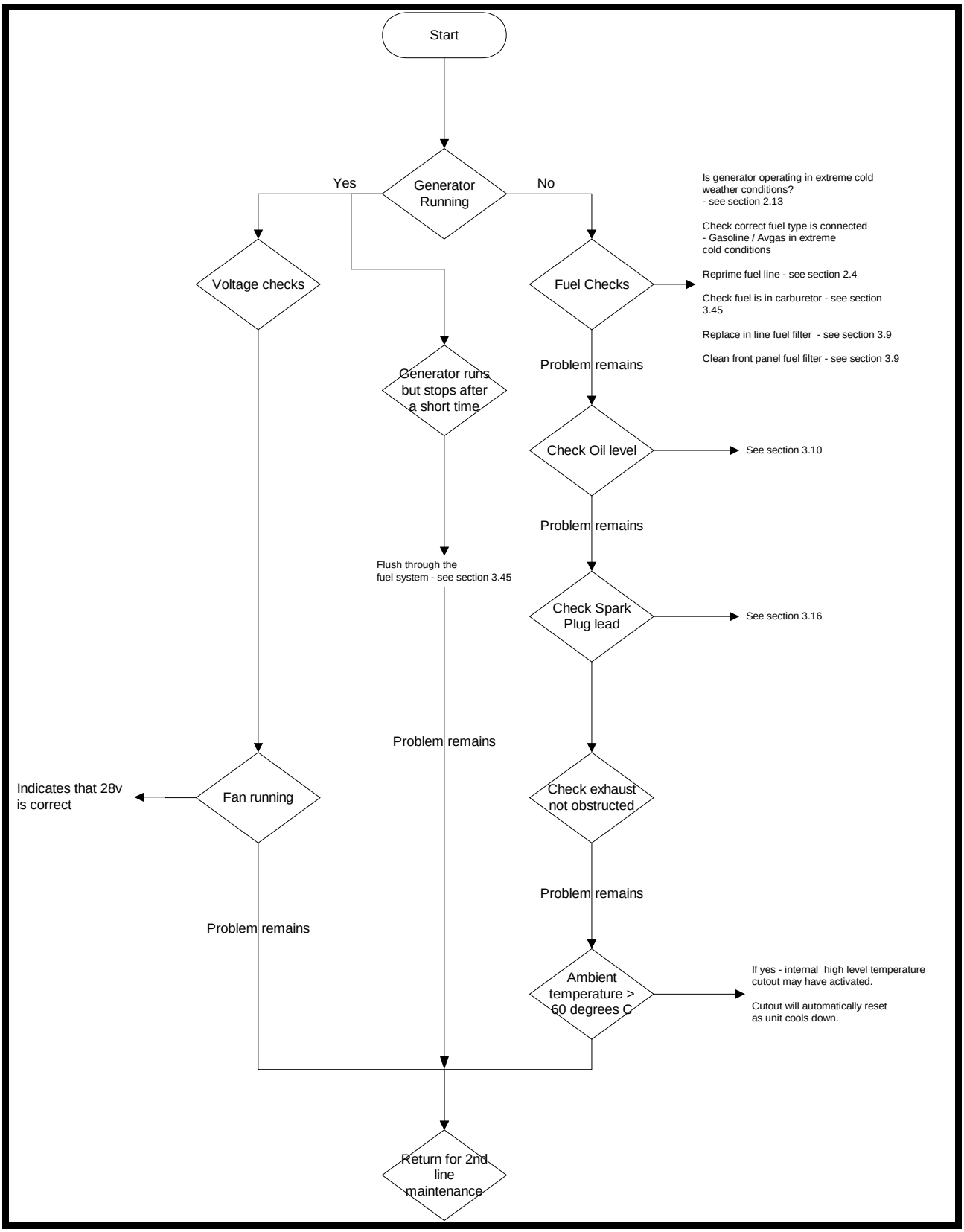
Fig 2 Engine inspection plate

Fig 3 Fuel "drain-down" screw

Fig 4 Fuel drain pipes

CHAPTER 4

1ST LINE FAULT FINDING



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CHAPTER 5

SPECIFICATIONS

Model	BD22LG
Type	Air-cooled, 4-stroke, single-cylinder (OHC)
Fuel Type	Gasoline or Avgas in extreme cold temperatures
Length x Width x Height (mm)	775 x 370 x 535
Weight(kg)	40kg
Max. power (gross) [kW/rpm]	2/3000
Voltage output DC (V/A)	28/32
Fuel	Unleaded automobile gasoline
Fuel tank capacity (L)	N/A – external supply
Lubrication oil capacity (L)	0.5
Lubrication oil specification	Pro S5w-40 Fuchs Silkiline
Carburetor	Butterfly
Ignition	CDI
Governor system	Electronic (STR GOVERNOR)
Spark plug type	DENSO U14FSR - UB
Starting system	Recoil starter
Choke	Manual
Fuel Valve	Automatic
Fuel Filters	Inline Disposable / Fixed washable
Air Filter	Foam
Pre Heating (V/A)	24/9.5
Ambient operating range	-32 to +54^{o}C (Sea level to +3000m)

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