

RCD Power Pack

SN: 135029



Futech Engineering Trading Co., Ltd.

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1. Introduction

This manual explains the proper operation of your machine. Study and understand these instructions thoroughly before operating or maintaining the machine. Failure to do so could result in personal injury or equipment damage.

The instructions, illustrations, and specifications in this manual are based on the latest information available at time of publication.

Your machine may have product improvements and features not yet contained in this manual.

Contact FUTECH if you do not understand the instructions in this manual, or need additional information.

2. Safety regulations

I. Caution

This manual is designed to familiarize the operator with Power Pack in order to ensure efficient and safe use. To reduce the risk of serious injury to yourself or others, read these safety regulations before using Power Pack.

Post these safety instructions at work locations, provide copies to employees, and make sure that everyone reads the safety instructions before using the Power Pack.

II. Safety regulations for environment

- Do not use flammable solvents around the power unit engine.
- Do not setup the machine in explosive atmospheres.
- Do not set up the machine on ground that is soft, unstable, congested.

III. Safety regulations for using machine







- Allow the engine to warm up at idling speed for a few minutes before operation.
- Do not operate a damaged or improperly adjusted power unit.
- Do not inspect or clean the power unit while the unit is running.
- Do not overfill the oil of the tank
- Make sure hoses and fittings are undamaged and tight before starting the power pack.

IV. Safety regulations for personal

- Do not wear loose clothing that can get entangled in the working parts of the power unit.
- Do not near the working parts of the power unit of your body.
- Do not attempt to locate hydraulic leaks by feeling around hoses and fittings with bare hands.
- Make sure shut down the power pack's engine before performing any maintenance or adjustments on the power unit unless otherwise specified.

V. Personal protective equipment

- Wear required personal protective equipment.
- Wear close-fitting clothing and confine long hair.
- Avoid wearing jewelry, such as rings, wrist watches, necklaces, or bracelets.
- Always wear:
 - Safety glasses
 - Work shoes
 - Hard hat

<p>Health Hazard</p>  <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	<p>Flame</p>  <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	<p>Exclamation Mark</p>  <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none"> • Gases Under Pressure 	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> • Aquatic Toxicity 	<p>Exploding Bomb</p>  <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides

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3. Warranty

- We warrant products sold by us to be free from defect in material and workmanship.

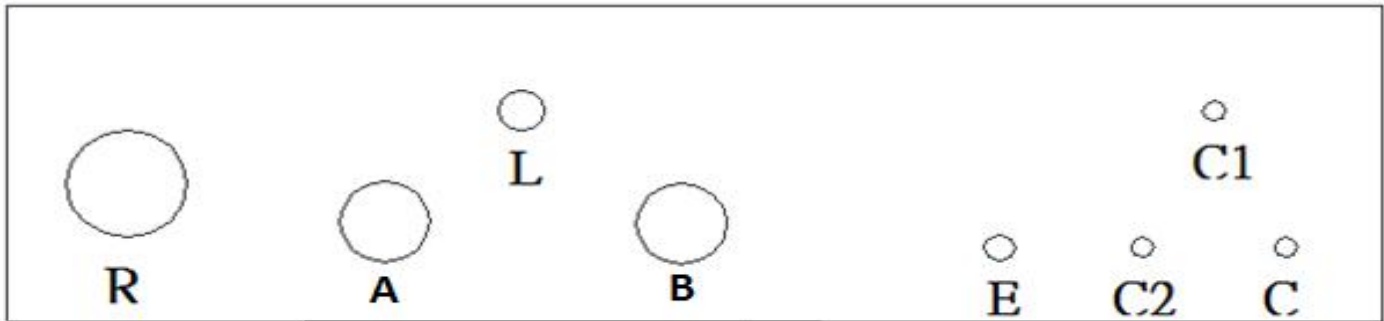
- This limited warranty does not extend to any damage resulting from the following:
 1. Changes, modifications or repairs to the pump or the parts by the users or any other third person other than the FUTECH authorized;
 2. Accidents, negligence, misuse, or abuse of the pump by the user or any other third person, including, but not limited to, improper storage of or physical abuse such as dropping or otherwise damaging the pump; or
 3. Normal 'wear and tear' including but not limited to cosmetic damage such as scratched display lenses and/or scratched paint.

- No claims under this warranty will be valid unless buyer notifies FUTECH in writing within a reasonable time of the buyer's discovery of such defects, but in no event later than twelve (12) months from date of shipment to buyer.

- Our obligation under this warranty shall not include any transportation charges or cost of installation, replacement, field repair, or other changes related to returning products to us; or any liability for direct, indirect or consequential damage or delay. If requested by us, products or parts for which a warranty claim is made are to be returned transportation prepaid to our factory. The risk of loss of products or parts thereof returned to FUTECH will be on buyer.

4. Technical specifications

Item			Units
Dimensions	Width	1600	mm
	Length(over all)	4600	mm
	Height(over all)	2090	mm
Drive Engine	Type	Deutz BF6M 1013	
	Power	200	kW
	Fuel tank	1150	L
Hydraulic System	2-main pump max. flow rate	190	L/min
	2-main pump max. pressure	300	bar
	Gear pump max. pressure	220	bar
	Control gear pump max. pressure	60	bar
	Hydraulic oil tank	850	L
Electric System	Voltage	24	Volts



Pos	Designation	connection	
C1	main pump 1 adjustment	fast pipe coupling	G3/8
C2	main pump 2 adjustment		G3/8
A	main pump 1		G1 1/4
B	main pump 2		G1 1/4
E	gear pump(pressure line 20 L/min)		G1/2
C	control oil		G3/8
R	return line		G2
L	leakage oil	screwed fitting	G3/4

Remark:

All these data will be changed according to the technology development and the updated of new version.

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5. Operation regulations

Machine operators and maintenance personnel must always comply with the safety precautions given in this manual and on the safety labels and tags attached to the power pack.

Review safety precautions carefully before operating the power pack and before performing maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations.

5.1 Before starting check or perform the following:

- i. Engine
 - Check engine oil level.
 - Check battery level
 - Check air cleaner condition.
 - Check engine for proper operation.
- ii. Hydraulics
 - Check hydraulic fluid level.
 - Check all hydraulic components for leaks or damage.
 - Check all hydraulic connections for foreign objects and dirt.
- iii. General
 - Check tension of alternator/fan belt.
 - Check installation and condition of shields.
 - Check machine for proper lubrication.
 - Check tightness of nuts and bolts.

5.2 Start the machine

When starting the engine, use the following switch on the procedure:

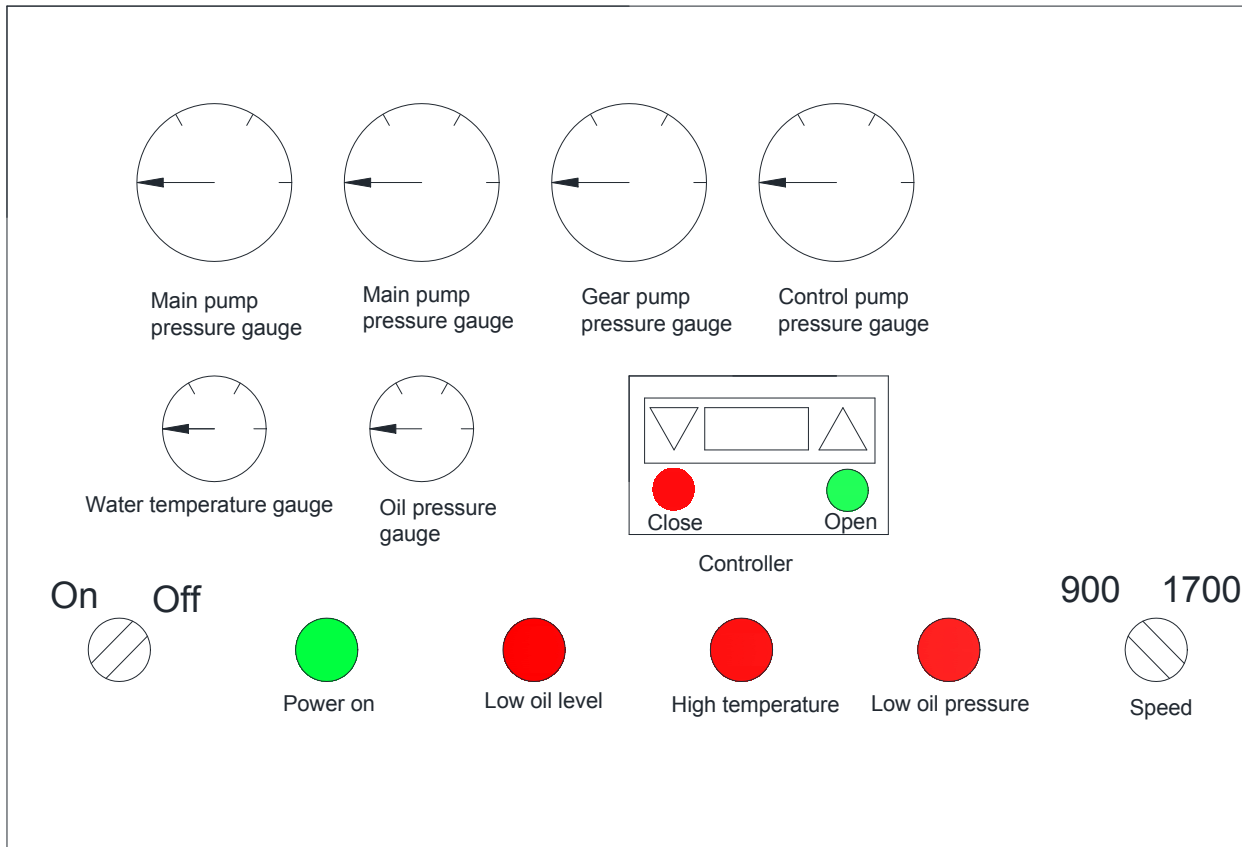
- Change to no load condition
- Make sure the emergency stop button is in a pull-up situation
- Turn the ON/OFF switch to ON position
- Turn on the DSE controller (Refer to P.8-9)
- Pre-heat the machine for about 1 min. before start the engine

5.3 Stop the machine

When shutting off the engine, use the following shutdown procedure:

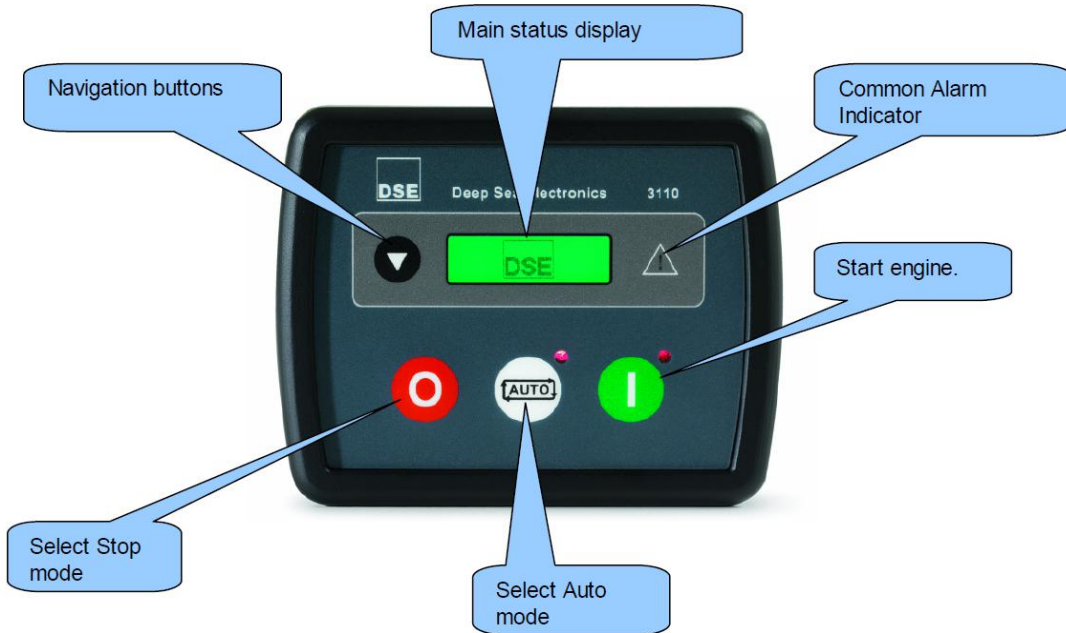
- Press the STOP button on the DSE controller
- Turn the ON/OFF switch to OFF position

Main control panel



Operation of DSE controller

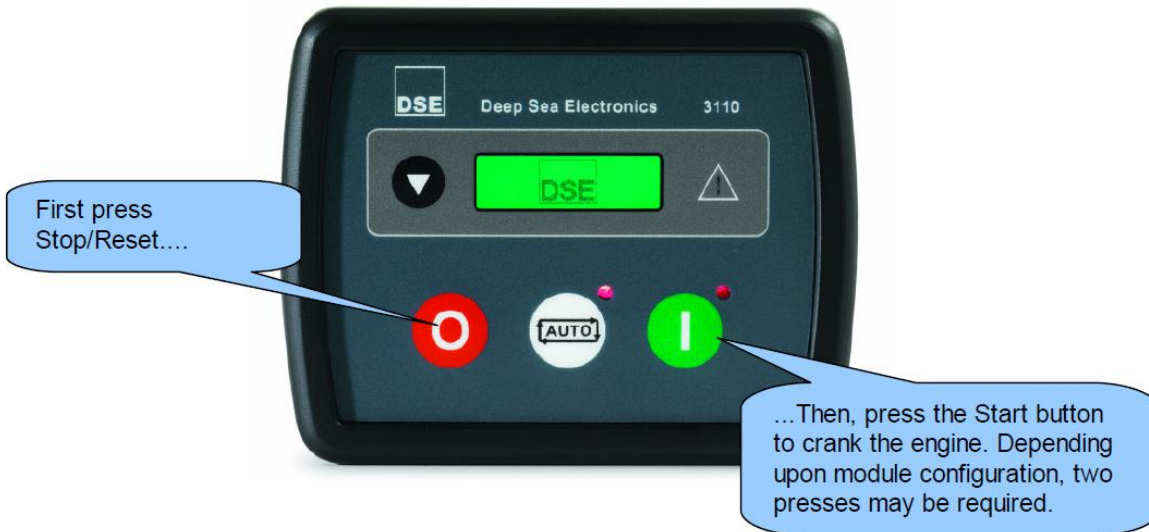
The following section details the function and meaning of the various controls on the module.



Quick start guide

This section provides a quick start guide to the module's operation.

- **Starting the engine**



- **Stopping the engine**



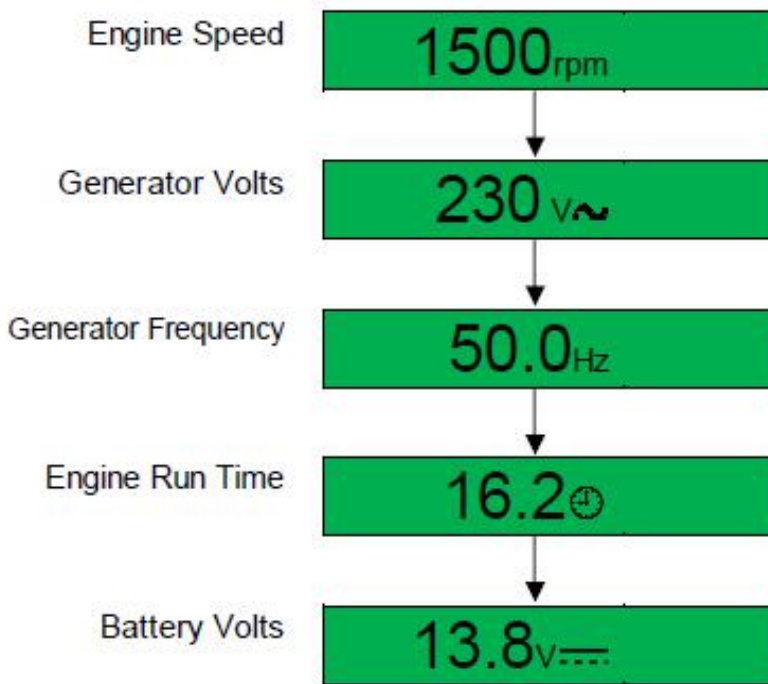
Select Stop/Reset mode. The Engine is stopped.

- **VIEWING THE INSTRUMENTS**

It is possible to scroll to display the different pages of information by repeatedly operating the scroll button.

If an alarm becomes active while viewing the status page, the display shows the Alarms page to draw the operator's attention to the alarm condition.

Page order:



6. Maintenance regulations

WARNING: Before servicing, cleaning, repairing, inspecting, lubricating, fueling, or transporting the machine, refer to the Shutdown Procedure, page 9.

6.1 Maintenance time table

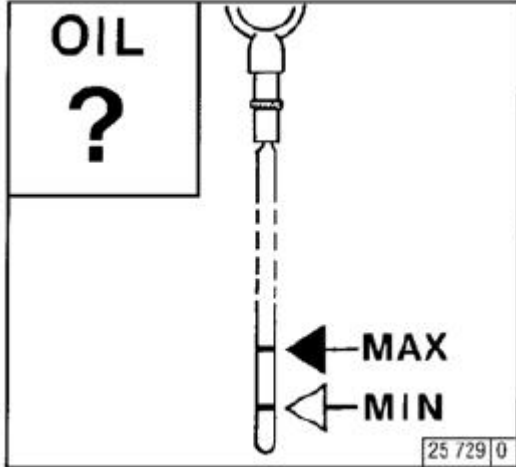
Check◆
Clean●
Replace★

First 50 hours	Work time per hour							
	10	125	250	500	1000	1500	2000	
	◆							Hydraulic oil level
◆	◆							Leakage
	◆							Air filter
		◆			◆			Battery and wire
		◆	◆	◆	◆		◆	Cooling system
★			★					Engine oil(according to the usage to replace)
★				★				Engine oil filter element
★					★			Fuel filter element
◆					◆			Fuel coarse filter
●							●	Fuel system
◆						◆		Valve clearance
◆				◆				Engine mounting
◆				◆				V-belt
◆								Failure alarm system
◆								Fixed parts
					◆			Heater plug
							★	Engine coolant
				◆				Coolant concentration
	◆							Coolant level
					◆			Connect hose

6.2 Method

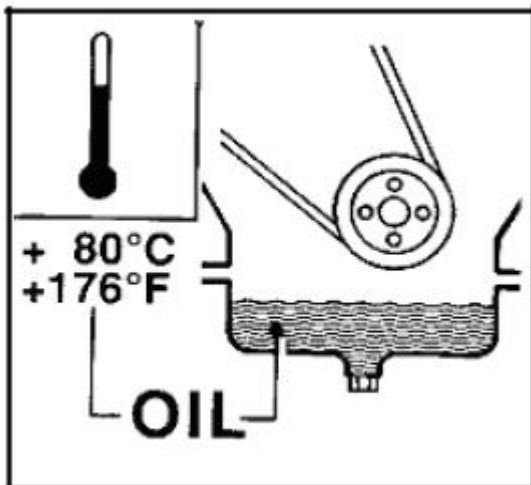
1. Change engine oil

1.1 Check the engine oil level

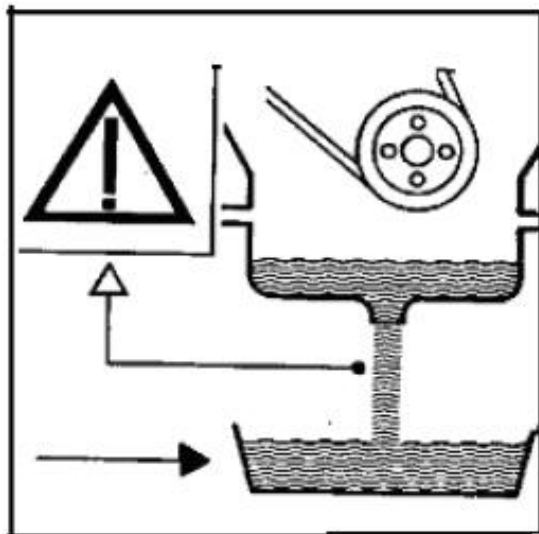


- A. Place the engine in a horizontal position and check the oil level before idle the engine for 2 minutes
- B. Shutdown
- C. Take out the dipstick and clean the oil
- D. Re-insert and take out again
- E. Check the oil level add the fuel oil when needed
- F. If the oil level in the minimum scale it must be add the fuel oil

1.2 Change the engine oil



- G. Place the engine in a horizontal position.
- H. Run the engine make the temperature to 80°C
- I. Shutdown



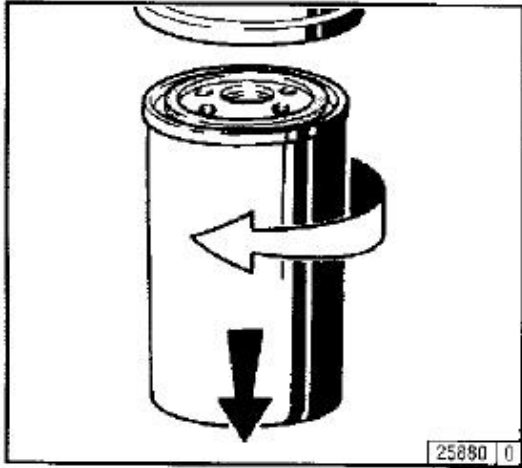
- J. Put a pan under the engine
- K. Twist out the fuel oil plug
- L. Release the fuel oil
- M. Put a new gasket, and then tighten on the fuel oil plug
- N. Fill the new oil
- O. And check the engine oil again

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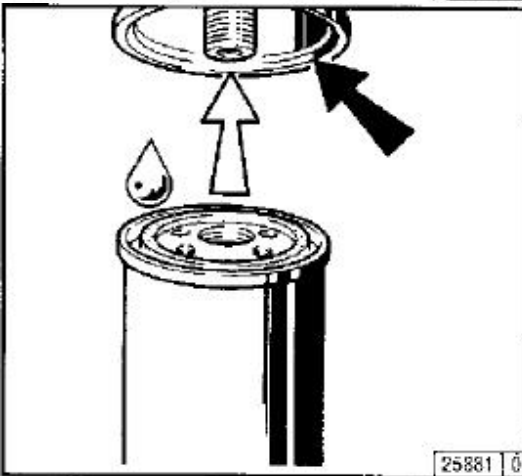
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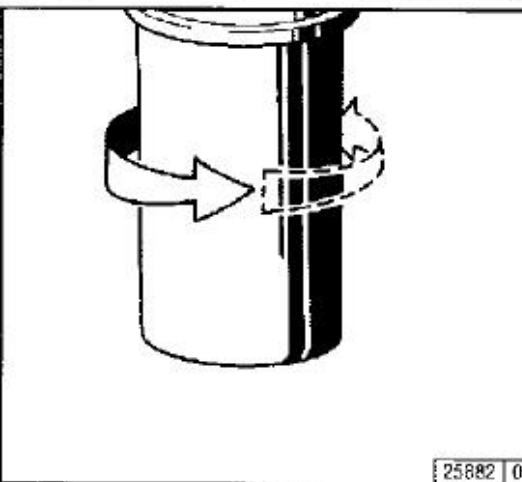
2. Replace the hydraulic oil filter



- A. Use a suitable tool to remove the cartridge
 - B. Remove the filter
 - C. Put a pan under the filter
- Note that hot oil, take care!

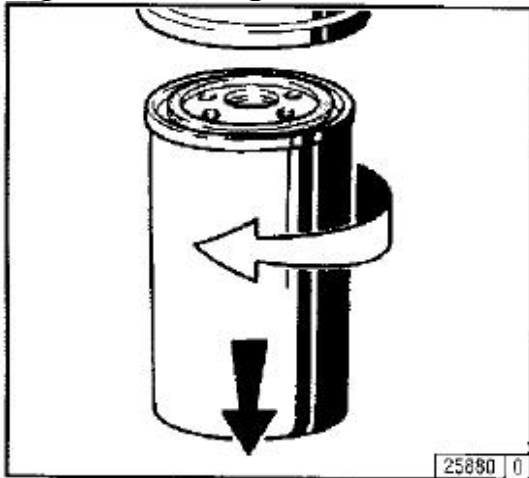


- D. Clean the filter sealing
- E. Cast a small amount of oil on the new hydraulic oil filter rubber gaskets
- F. Tighten the new filter element by hand
- G. Tighten the hydraulic oil filter until the fixed alignment and tighten the bolts

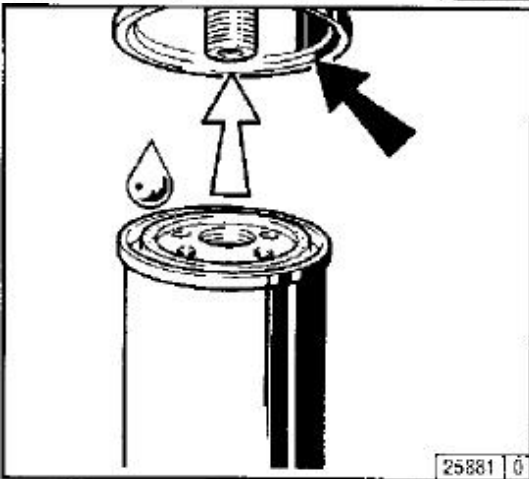


- H. Tighten the hydraulic oil filter until the fixed alignment and tighten the bolts
- I. Check the hydraulic oil level
- J. Check the hydraulic oil pressure
- K. Check the cartridge have not leakage

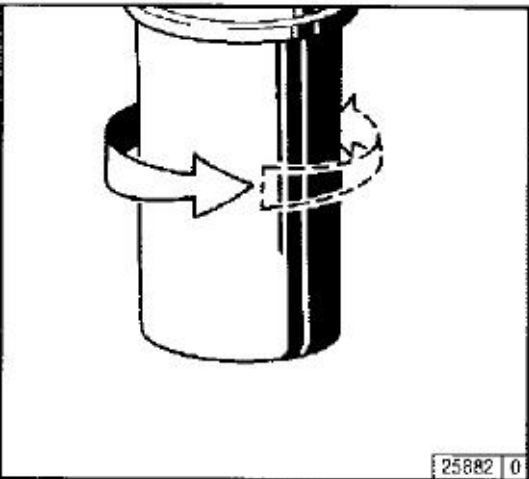
3. Replace the engine oil filter



- A. Use a suitable tool to remove the cartridge
- B. Remove the filter
- C. Put a pan under the filter



- D. Clean the filter sealing
- E. Cast a small amount of oil on the new fuel oil filter rubber gaskets
- F. Tighten the new filter element by hand
- G. Tighten the engine oil filter until the fixed alignment and tighten the bolts

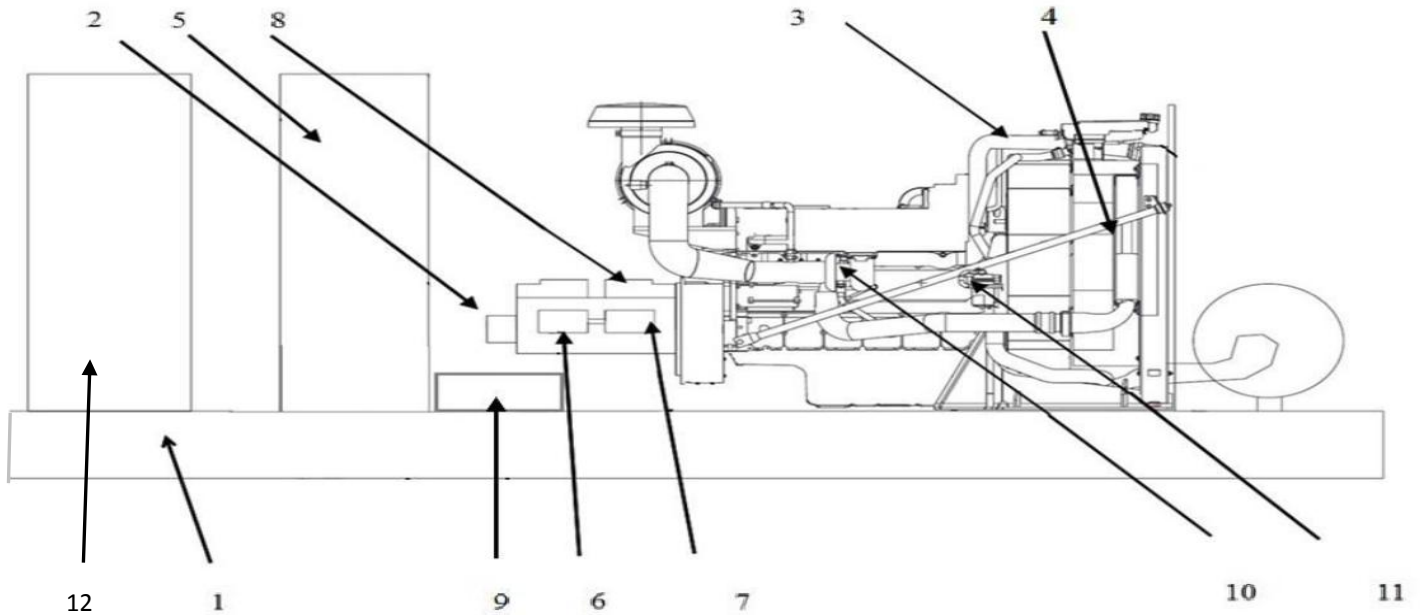


- H. Tighten the engine oil filter until the fixed alignment and tighten the bolts
- I. Check the engine oil level
- J. Check the engine oil pressure
- K. Check the cartridge have not leakage

Fault diagnosis

SYMPTON	POSSIBLE FAULT	ACTION
Engine stops or will not start	Fuel shortage.	Refuel.
	Fuel line blocked.	Clean filter.
	Air cleaner blocked.	Clean or renew element.
	Engine oil level low. (Oil Alert Switch)	Top up to correct level.
	Hydraulic oil level low. (Float Switch).	Top up to correct level.
	Engine malfunction.	Call supplier.
	Engine ignition switch or connecting wires damaged.	Check for earth leak, renew worn or damaged.
	Hydraulic tank float switch or connecting wires damaged.	Renew worn or damaged parts.
	Hydraulic pump seized.	Renew pump
	By-Pass lever in by-pass position.	Set to flow.
Hydraulic oil pressure low	Relief valve set low or worn.	Check relief setting. And adjust if necessary.
	Pump worn or damaged.	Replace if necessary.
	Engine power low.	Check system oil flow. Renew pump if necessary.
	Cooling fan lose or damaged.	Clean using air blast.
	Hydraulic pump worn or damaged.	Tighten or renew as necessary.
	Relief valve set low or worn.	Renew pump.
	Thermal valve malfunction.	Check setting & replace as necessary renew valve.
	Hydraulic oil contaminated.	Drain oil tank & transmission hoses and replenish with correct oil grade .Renew filters.
Engine misfiring or hunting	Call supplier	
Excessive vibration.	Engine mountings loose.	Tighten or replace damaged parts.

7. List of part



Item	Description(show in diagram)
1	Fuel tank
2	Control gear pump (C)
3	Engine
4	Water cooler
5	Hydraulic oil tank
6	Gear pump (E)
7	Fan pump (F)
8	Main double piston pump
9	Control valve block
10	Engine oil filter
11	Fuel filter
12	Hydraulic cooler

Item	Description(not show in diagram)
A	Coupling
B	Battery
C	Belt
D	Vibration damper
E	Engine flange
F	Air filter element
G	Hydraulic oil filter element
H	Hydraulic oil cooler

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Order spare parts method

To order spare parts, please write down the following data and email to sales@chinahydraulic.com:

Company name :

Contact No. :

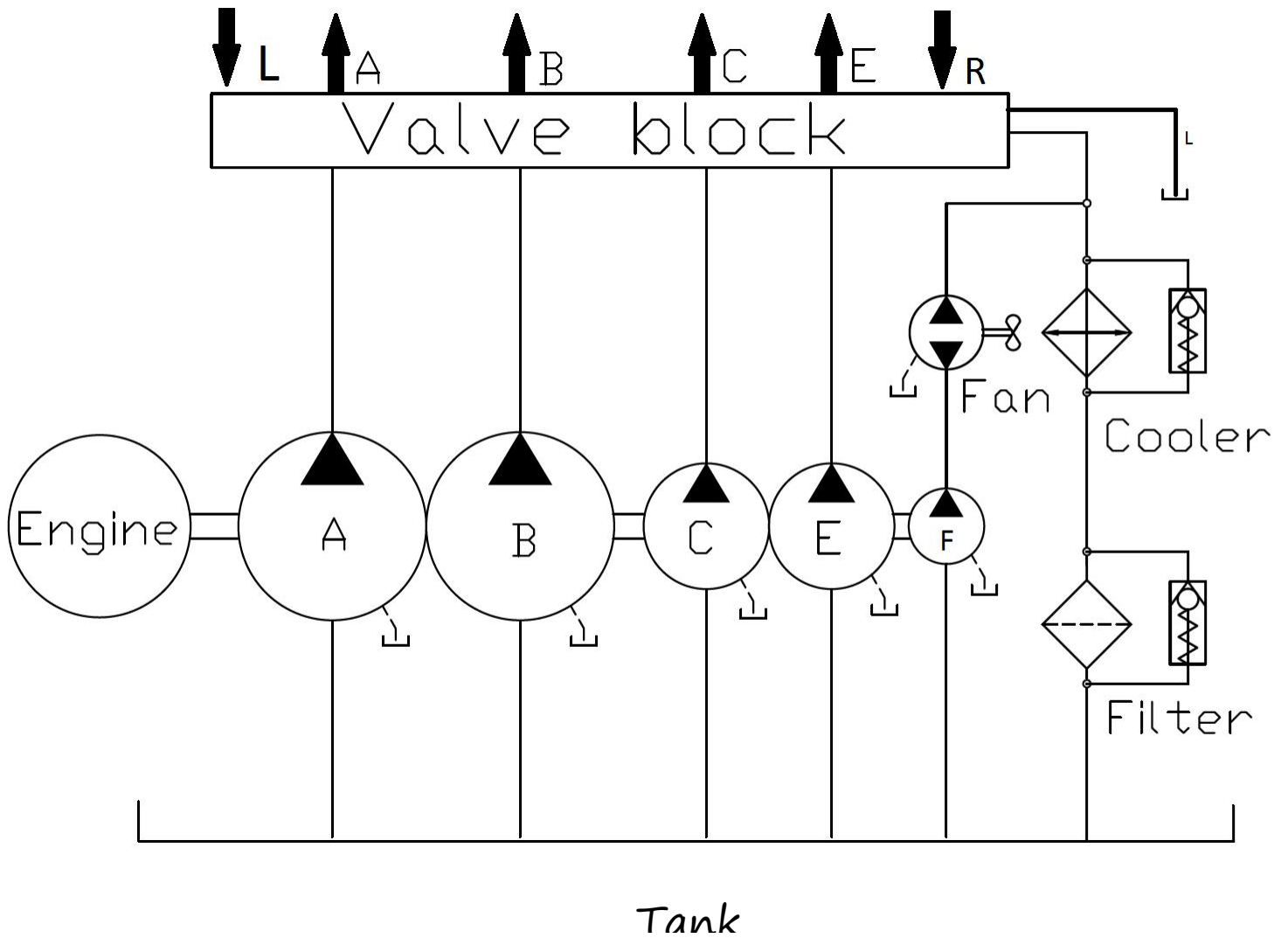
<u>Serial No.</u>	<u>Item</u>	<u>Description</u>	<u>Quantity</u>

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8. Hydraulic diagram



9. Electric circuit diagram

