



D9 HYDRAULIC POWERPAK

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This manual contains information on D9 Hydraulic PowerPak manufactured by Elastec / American Marine. All data in this publication is based on the latest product information.

Elastec / American Marine reserves the right to make changes at any time without notice and without incurring any obligations. If a problem is encountered, or if you have questions about your Elastec / American Marine equipment, please call one of our consultants at **(618) 382-2525**.

Elastec / American Marine products are designed to provide safe and dependable service when operated according to instructions. Read and understand this manual before operating this system. Failure to do so may result in personal injury or equipment damage.

Your Serial Number is YA50911049

★ SERIAL NUMBER MUST BE INCLUDED WHEN ORDERING PARTS.

CONTACT INFORMATION

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Component List:

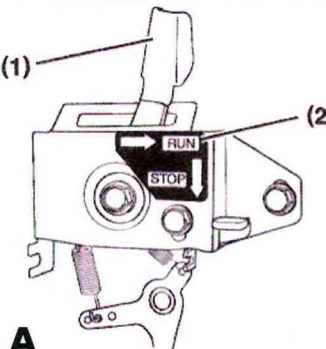
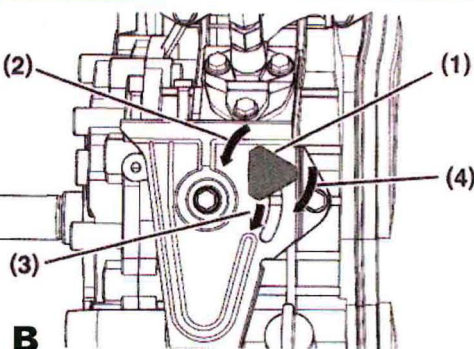
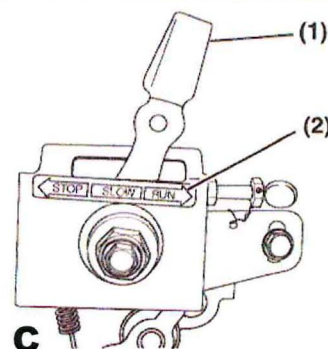
1. Diesel engine
2. Hydraulic pump
3. Hydraulic reservoir
4. Hydraulic hoses and fittings

Before Starting your PowerPak

Fill oil reservoir with hydraulic oil. (Tank capacity: 8 gallons / 30.28 liters)

1.
 - Hydraulic oil with anti-wear additives should be used. In arctic environments during times of extremely low temperatures, automotive transmission fluid may be used.
 - Suggested oil types include hydraulic oil commonly available for agricultural equipments, forklifts, etc. in your country.
- | BRAND | TYPE |
|----------|----------------------|
| Pennzoil | AW46 Hydraulic Oil |
| Texaco | Rando HDAZ |
| Shell | Tellas Hydraulic Oil |
| Mobil | D.T.E 20 Series |
| Chevron | EP Hydraulic Oil |
| Exxon | J-58 Hydraulic Oil |
2. Check the engine oil. The engine oil selected should be chosen based on the optimum oil viscosity for the climate (temperature range) in which the PowerPak will be used. An oil selection guide in the manufacturer's operation manual will assist the operator in choosing the correct oil.
 3. Connect battery cables. Your D9 PowerPak is shipped with the battery cables disconnected.
 4. Fill the engine's fuel tank with diesel fuel.
 5. Connect hydraulic hoses.
 - **WARNING:** Always connect hydraulic hoses to power unit before starting.
 - All hydraulic hoses in this system are color-coded. Return lines are colored with green markings that match the green markings on the fittings on the boom reel. Pressure lines are marked with yellow.
 - Hydraulic hoses are tested at the factory and contain oil. If the ambient temperature at the final location is higher than when tested, hoses may be under pressure and difficult to connect. To connect the hoses, this pressure will have to be released by depressing the pin on the male end of the hose. This pin can be depressed by tapping with a hammer or pressing against a solid object.

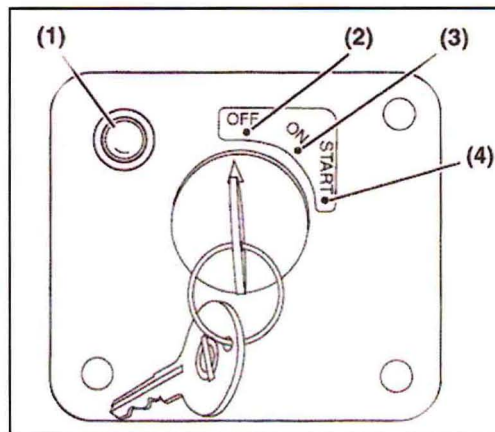
Several types of engine speed control are used in this series of engines. The following procedures are for three typical applications. See engine manufacturer's service manual for more information.

 A	 B	 C
Slide engine speed control lever (A-1) to the RUN position (A-2).	- Turn engine speed control knob (B-1) to the left (B-2). - Slide engine speed control knob to the START position (B-3) - Turn engine speed control knob to the right (B-4) to tighten it.	Slide engine speed control lever (C-1) to the RUN position (C-2).

CAUTION: Never use an engine starting aid such as ether. Engine damage will result.

START THE ENGINE

1. Insert key into key switch (#2).
2. Turn key clockwise to the START POSITION (#4). Release the key as soon as engine starts. It will return to ON position (#3). **CAUTION: Never hold key in START position for longer than 15 seconds to avoid overheating of starter motor.**
3. If engine fails to start:
 - a. Wait until engine comes to a complete stop before you attempt to start again. Engaging the starter while the engine is still rotating will result in damage to the starter motor and fly-wheel.
 - b. Wait at least 30 seconds before you attempt to start the engine again. This pause will allow the battery voltage to recover and prevent damage to the starter motor due to low battery voltage.



NOTE: The Battery Indicator Lamp (#1) comes on if there is a problem in the charging system.

Engine:

Maintain your engine as directed in the manufacturer's instructions provided with your PowerPak.

PowerPak:

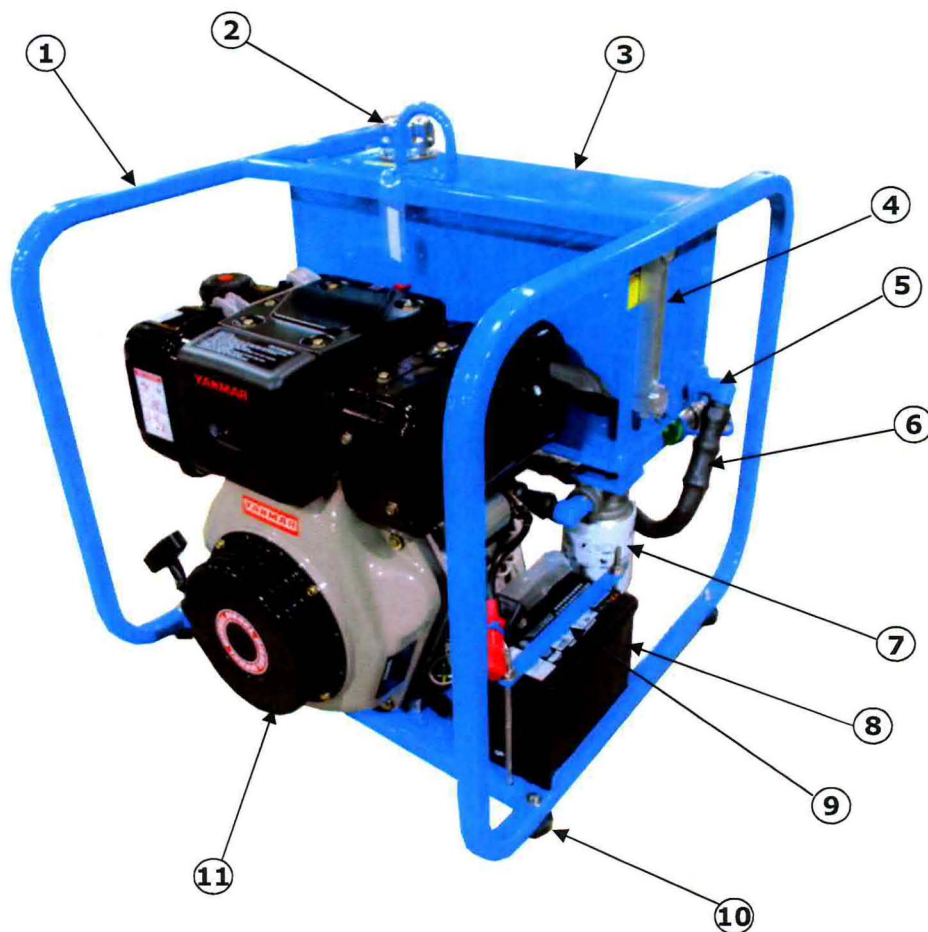
1. Hydraulic oil and filter should be changed every three hundred (300) hours of operation.
2. Clean hydraulic filter suction strainer every six hundred (600) hours of operation. The strainer is located in the hydraulic tank. Access the strainer by removing the adapter.
3. Hydraulic pumps are not serviceable items. If pump malfunctions, it must be replaced.

Relief Valve:

1. Relief valves are pre-set and do not require service.

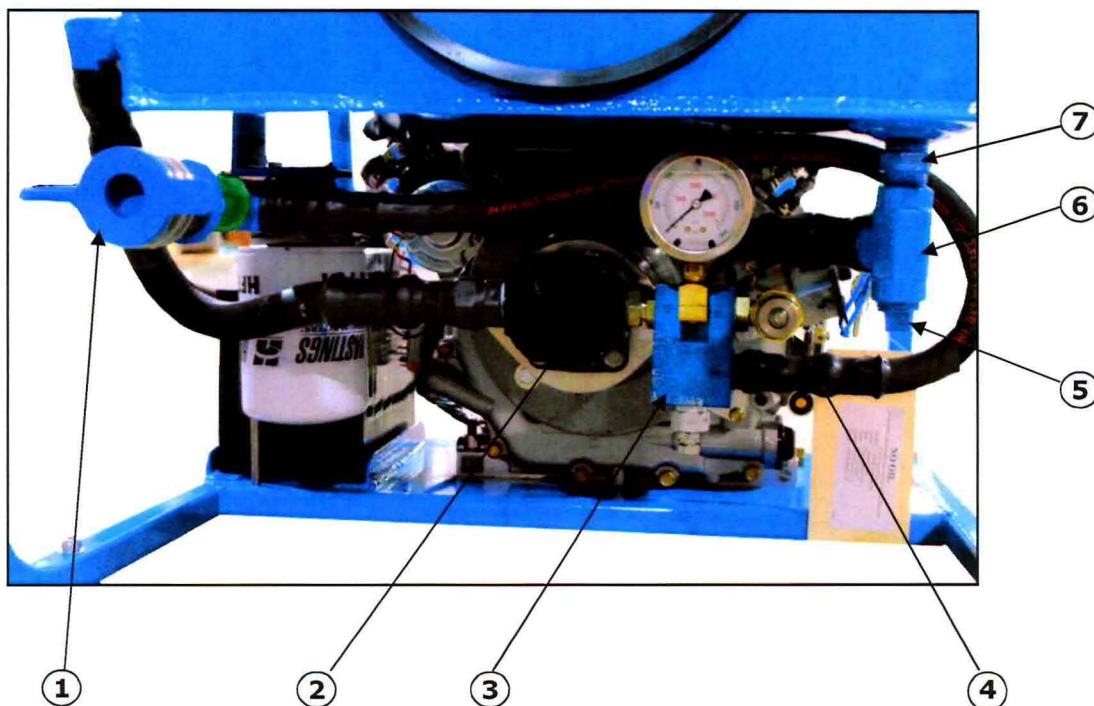
Hydraulic Hoses and Couplers:

1. Couplers used on the PowerPak will have a long service life if kept clean. The quick disconnect couplers can be cleaned with kerosene or solvent using a brush or compressed air.
2. Damage to hoses comes primarily from kinking and chafing. This should be avoided at all times. If the hoses begin to leak, they should be replaced.



Item#	Part #	Description
1	4FRAMPO009C	Frame PowerPak D9
2	4CAP-FI010	Cap Filler Hydraulic Tank
3	4TANKHY008P	Tank Hydraulic 8 Gallon
4	4GAUGOI012	Gauge Oil Level
5	6222361212	Adapter Hydraulic 90 JICM/MPT Steel 3/4" x 3/4"
6	4HOSECO080	Hose Connector Hydraulic D9 Reservoir/Pump
7a	4HOUSFI012	Housing Filter 3/4" 0-20 gpm
7b	4FILTHY010	Filter Hydraulic Oil
8	4BATTEN320	Battery Engine 320 amp 12V
9	4BAR-BA010P	Bar Battery Holding
10	4BUMPRU024	Bumper Rubber 1/4" x 3/4" x 1-1/2"
11	4ENGIYA010	Engine Yanmar L100V6
12*	4COUPJA008	Coupler Jaw Keyed L095 Cast 1/2"
13*	4COUPJA016	Coupler Jaw Keyed L095 Cast 1"
14*	4SPACSP010	Spacer Spider L95

*Not Shown



Item#	Part #	Description
1a	6240471212	Coupler Hyd Universal S/s 3/4" x 3/4"
1b	6269240012	Plug Dust Rubber 3/4"
2	4GAUGPR030	Gauge Pressure Basemount 3000
3	4VALVRE110	Valve Relief Hyd Body, SAE #6, Boss x 1/4" FPT
4a	6222760608	Adapter Hyd 90 Boss/Mpt Steel 3/8" x 1/2"
4b	6223670808	Adapter Hyd Quick Ss 1/2"x1/2"
5	6269460012	Plug Mpt Steel 3/4"
6	6271561212	Tee Threaded Steel 3/4"x 3/4"
7	6220261212	Adapter Hyd Reg Mpt/Mpt Steel 3/4"x3/4"

NOTE: The following changes apply to units equipped with AeroQuip fittings:

Item#	Part #	Description
1	6241061212	Coupler Hyd AeroQuip Steel 3/4" x 3/4"
4	6223460808	Adapter Hyd AeroQuip Steel 1/2" x 5/8"

ELASTEC / AMERICAN MARINE warrants and guarantees that articles supplied are free from defects in materials and workmanship, but seller's liability hereunder is limited to making good by replacement or repair without charge to the buyer any such defects as arise within the period of one year from dispatch of the articles (with the exceptions listed below), provided always that such defects are notified in writing to the seller within fourteen days of their discovery and that the defective parts, where reasonable, are promptly sent carriage paid to the seller's premises. Such liability shall not extend to such faults as are caused by ordinary wear and tear, incorrect handling of the articles or their defective maintenance or storage.

Unless otherwise noted, products are warranted against defects in material and workmanship under normal use and service for a period of 1 year.

SmartAsh incinerators have a warranty period of 6 months.

ELASTEC obligation under this warranty is limited solely to repairing or replacing parts, which in their judgment are defective in material and/or workmanship. Elastec will be responsible for shipping of replacement parts to customer.

Limitations:

ELASTEC is not liable for expenses incurred in repairs or alterations made outside their factory or licensed dealer locations without prior authorization, nor shall they be responsible for the performance of this product to which any revisions or alterations have been made by others.

1. Products that have been subjected to alteration, modification, neglect, or repairs.
2. Products no longer owned by the original purchasers.
3. Products suffering shipping or freight damage, normal wear, accident, improper maintenance or improper protection in storage.
4. Rental costs, return transportation cost of product to Elastec's place of business or phone communications.
5. Any repeat or shop comeback repairs resulting from poor service work, improper diagnosis or testing. Replacement of parts as a trial and error method of diagnosis will not be considered for warranty.
6. Replacement parts other than those sold or supplied by Elastec / American Marine Inc.
7. Any normal replacement and/or service of wiper blades.
8. Natural calamity such as fire, flood, etc.
9. Any damage caused by failure to immediately correct a known or suspected problem with skimmer products.

In the case of components or accessories that have been supplied to the buyer's design, the seller shall be under no liability to replace or repair defects arising there from.

The guarantee contained in the clause above shall constitute the seller's sole liability for latent and other defects and is in full exclusion of any warranty or liability whatsoever implied of common law, statute or otherwise as to the quality of the goods, their fitness for any particular purpose, their merchantability or otherwise, and the seller shall not be liable for the consequential loss, injury or damage of any nature whatsoever arising out of or in connection with the supply of the articles.