FX301

12 VOLT 330GPH UTILITY TRANSFER PUMP

User Manual



Please read and understand all instructions before use. Retain this manual for future reference.

DC/12V Self-Priming Transfer Pump

SPECIFICATIONS

Max. Flow Rate	330 GPH
Current Rating	12A
Discharge	3/4 in. GHT
Max. Suction Lift	3 ft
Max. Discharge Head	27 ft
Operating Temperature Range	0 to 45°C
Housing Material	Powder Coated Carbon Steel
Impeller Material	NBR Rubber
Flow Rate @ 5 Ft	300 GPH
Flow Rate @ 10 Ft	280 GPH
Flow Rate @ 15 Ft	240 GPH
Cord Length	36 in. Leads with Alligator Clamps
Contents	Suction Strainer with 6 ft Water Hose
	Service Kit with Impeller and Gasket

INTRODUCTION

The 12V Mini Utility Pump is a self-priming, portable pump with a convenient carry handle. It features slip resistant rubber bumpers that keep the pump in place during use. It can be used for various water transfer applications and is ideal for homeowners, RV owners, boaters, ranchers, campers and contractors.

SAFETY

WARNING! Read and understand all instructions before using this device. The operator must follow basic precautions to reduce the risk of personal injury and/or damage to the equipment.

Keep this manual for safety warnings, precautions, operating or inspection and maintenance instructions.

HAZARD DEFINITIONS

Please familiarize yourself with the hazard notices found in this manual. A notice is an alert that there is a possibility of property damage, injury or death if certain instructions are not followed.

DANGER! This notice indicates an immediate and specific hazard that **will** result in **severe personal injury or death** if the proper precautions are not taken.

WARNING! This notice indicates a specific hazard or unsafe practice that **could** result in **severe personal injury or death** if the proper precautions are not taken.

CAUTION! This notice indicates a potentially hazardous situation that may result in minor or moderate injury if proper practices are not taken.

NOTICE! This notice indicates that a specific hazard or unsafe practice will result in equipment or property damage, but not personal injury.

WORK AREA

1. Operate in a safe work environment. Keep your work area clean, well-lit and free of distractions.
2. Keep anyone not wearing the appropriate safety equipment away from the work area.
3. Store unused devices properly in a safe and dry location to prevent rust or damage. Lock devices away and keep out of the reach of children.

PERSONAL SAFETY

WARNING! Wear personal protective equipment approved by the Canadian Standards Association (CSA) or American National Standards Institute (ANSI).

PERSONAL PROTECTIVE EQUIPMENT

1. Always wear impact safety goggles that provide front and side protection for the eyes. Eye protection equipment should comply with CSA Z94.3-07 or ANSI Z87.1 standards based on the type of work performed.

2. Wear gloves that provide protection based on the work materials or to reduce the effects of vibration.
3. Wear protective clothing designed for the work environment and device.
4. Non-skid footwear is recommended to maintain footing and balance in the work environment.

PERSONAL PRECAUTIONS

Control the device, personal movement and the work environment to avoid personal injury or damage to device.

1. Do not operate any device when tired or under the influence of drugs, alcohol or medications.
2. Avoid wearing clothes or jewelry that can become entangled with the moving parts of a device. Keep long hair covered or bound.
3. Do not overreach when operating a device. Proper footing and balance enables better control in unexpected situations.

SPECIFIC SAFETY PRECAUTIONS

WARNING! DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to the device safety rules. If you use this device unsafely or incorrectly, you can suffer serious personal injury.

1. Use the correct device for the job. This device was designed for a specific function. Do not modify or alter this device or use it for an unintended purpose.
2. Do not insert a finger or any object into the pump or motor openings.
3. Do not pump hot liquids. This will overheat the pump and damage the pump system. The temperature of pumped liquids must be between 40 to 130ºF (4 to 54ºC).
4. This pump is designed to handle clear water. Any of the following can clog the pump or damage the pump system:
    a. Physical obstruction such as sand, dirt, debris or water scale/rust.
    b. Caustic liquids like salt water, brine, laundry discharge or any other liquid containing caustic chemicals and/or foreign materials.
    c. Flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc.
5. Do not allow the pump or any other system component to freeze, as this can damage the pump during operation.

6. Do not run the pump dry. This will cause cavitation in the pump mechanism and can damage the pump beyond repair.
7. Protect the pump from extreme temperatures and humidity to prevent personal injury and/or equipment damage.
    a. This unit is not waterproof and is not intended for use in damp locations such as showers, saunas or swimming pools.
    b. Do not submerge in liquids.
    c. Ambient temperature around the motor should not exceed 104ºF (40ºC).
    d. Do not block the motor openings to prevent overheating.
8. Secure the discharge hose before starting the pump to prevent it from whipping and causing personal injury and/or property damage.
9. Do not touch a hot or operating motor to prevent burn injuries.
10. Release pressure and drain liquid from the system completely before servicing to prevent personal injury and/or equipment damage.

ELECTRICAL SAFETY

WARNING! Do not touch or handle a live device with any part of your body that is wet or damp. Wet skin reduces resistance to electrical current, increasing the danger of a serious or fatal shock.

WARNING! To reduce risk of electric shock, be certain that the plug is connected to a properly grounded receptacle.

1. Disconnect device from power source before cleaning, servicing, changing parts/accessories or when not in use.
2. Protect yourself against electric shocks when working on electrical equipment. Avoid body contact with grounded surfaces. There is an increased chance of electrical shock if your body is grounded.
3. Do not expose the device to rain or wet conditions. Water entering a device will increase the risk of electric shock.
4. Do not alter any parts of the device or accessories. All parts and accessories are designed with built-in safety features that may be compromised if altered.
5. Make certain the power source conforms to requirements of your equipment (see Specifications).

6. When wiring an electrically driven device, follow all electrical and safety codes, as well as the most recent Canadian Electrical Code (CE) and Canadian Centre for Occupational Health and Safety (CCOHS).

WARNING! All wiring should be performed by a qualified electrician.

BATTERY LEADS SAFETY

WARNING! DO NOT touch the two clamps together while the unit is connected to a vehicle battery. This will cause a discharge and may result in electrocution.

1. Do not operate this tool if the leads are frayed or damaged as an electric shock or surge may occur, resulting in personal injury or property damage.
    a. Inspect the leads for cracks, fraying or other faults in the insulation before each use.
    b. Discontinue use if the leads feel more than comfortably warm while operating the tool.
2. Keep all connections dry and off the ground to reduce the risk of electric shock. Do not touch the leads with wet hands.
3. Prevent damage to the leads by observing the following:
    a. Keep the leads away from heat, oil, sharp edges or moving parts.
    b. Place the leads in a position that prevents them from coming into contact with the tool and from getting caught by the workpiece. The leads should always stay behind the tool.
4. Do not allow people, mobile equipment or vehicles to pass over unprotected leads.
    a. Position the leads away from traffic areas.
    b. Place the leads in reinforced conduits.
    c. Place planks on either side of the leads to create a protective trench.

BATTERY PRECAUTIONS

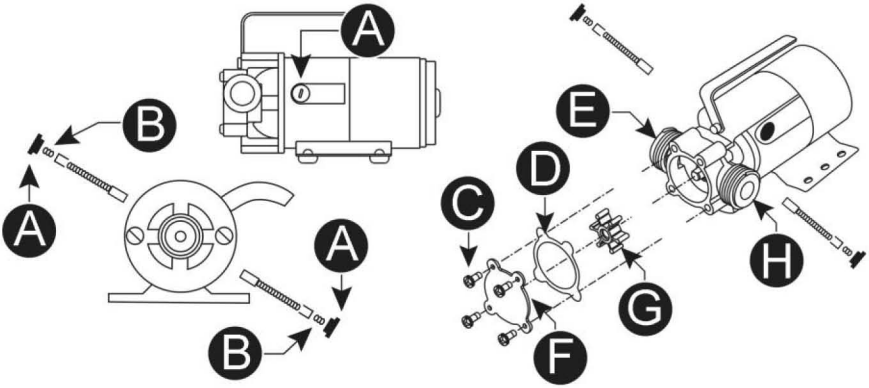
1. Keep any ignition source, such as flames, sparks or embers away from the battery.
2. Avoid contact with batteries as they contain sulfuric acid. The acid is corrosive and can cause skin burns.

3. Install caps over the battery terminals to prevent accidental contact. Discharged batteries may still carry charges and cause electric shock upon contact.

UNPACKING

WARNING! Do not operate the device if any part is missing. Replace the missing part before operating. Failure to do so could result in a malfunction and personal injury.

Remove the parts and accessories from the packaging and inspect for damage. Make sure that all items in the Identification Key are included.



IDENTIFICATION KEY

A	Brush Cap	E	Outlet
B	Spring Assembly	F	Face Plate
C	Face Plate Screw	G	Impeller
D	Gasket	H	Inlet

ASSEMBLY & INSTALLATION

1. Connect the supplied inlet hose (Fig. 1-2) to the pump's inlet (H). Connect a 5/8 in. discharge hose (Fig. 1-1) (sold separately) to the pump's outlet (E). The discharge hose should be as short as possible and should not exceed 25 ft.

2. Position the pump on a surface that is stable, level, dry and not slippery. Ensure that the inlet hose can reach the water source (Fig 1-4). Do not exceed the pump's maximum suction lift (Fig 1-3) of 3 ft.

OPERATION

NOTICE! The pump must be primed before use to prevent damage to its mechanism.

1. Prime the pump by filling the pump cavity with water through the inlet (H). Ensure that the impeller (G) is fully submerged.
2. Dip the inlet hose into the water source. For best results, do not kink or coil the hoses.
3. Connect the red lead to the battery's positive terminal and the black lead to the negative terminal to turn the unit on.
4. Disconnect the leads once the water transfer is nearly complete. Do not fully deplete the water source to prevent the pump from running dry.

CARE & MAINTENANCE

1. Maintain the device with care. A device in good condition is efficient, easier to control and will have fewer problems.
2. Inspect the device fittings, alignment, hoses and power supply cord periodically. Have damaged or worn components repaired or replaced by an authorized technician. Only use identical replacement parts when servicing.
3. Only use accessories intended for use with this device.
4. Maintain the device's labels and name plates. These carry important information. If unreadable or missing, contact Princess Auto Ltd. for replacements.

WARNING! Only qualified service personnel should repair the device. An improperly repaired device may present a hazard to the user and/or others.

REPLACING THE MOTOR BRUSHES

IMPORTANT! Motor brushes (sold separately) wear out during regular use and must be replaced periodically.

1. Unscrew the brush caps (A) at the motor's sides.

2. Remove the brushes and spring assemblies (B) by pulling them away from the brush holders.
3. Install the new brushes. Ensure they are properly aligned.
4. Reinstall the spring assemblies and caps.

REPLACING THE IMPELLER

1. Remove the face plate screws (C), face plate (F) and gasket (D).
2. Remove the damaged or worn impeller (G).
3. Clean the interior surface of the pump cavity. Remove any foreign objects to allow the impeller to turn freely.
4. Apply a thin coat of light lubricant on the interior surface of the pump cavity and the exterior surface of the new impeller.
5. Align the impeller with the motor shaft. Push into place while rotating the blades in a clockwise direction.
6. Reinstall the gasket, face plate and face plate screws.

CLEANING

Flush the pump with running water to remove debris or buildup.

LUBRICATION

Inspect and lubricate the device when required. Only use light oil to lubricate the device. Other lubricants may not be suitable and could damage the device or cause a malfunction during use.

NOTICE! NEVER use a penetrating oil to lubricate the device. Penetrating oil may act as a solvent that can break down the grease and cause the device to seize up.

STORAGE

Drain liquid from the system before storing. When storing for an extended period, apply a thin coat of lubricant on the pump cavity and impeller.

DISPOSAL

Recycle a device damaged beyond repair at the appropriate facility.

TROUBLESHOOTING

Visit a Princess Auto Ltd. location for a solution if the device does not function properly or parts are missing. If unable to do so, have a qualified technician service the device.

Problem(s)	Possible Cause(s)	Suggested Solution(s)
Pump does not prime or does not retain prime during operation.	1. Suction lift is too high. 2. Hose is kinked. 3. Hose fitting is loose. 4. Hose is leaking air.	1. Adjust pump position. 2. Straighten. 3. Tighten. 4. Repair or replace.
Pump runs but water is not discharged.	1. Pump is not primed. 2. Suction lift or discharge height is too high. 3. Hose is kinked. 4. Impeller is faulty. 5. Inlet is clogged.	1. Prime. 2. Adjust pump position. 3. Straighten. 4. Replace. 5. Remove obstruction.
Motor runs too hot.	1. Voltage is incorrect. 2. Discharge hose diameter is too small. 3. Impeller is faulty. 4. Outlet is clogged. 5. Liquid is too viscous. 6. Motor openings are obstructed.	1. Ensure power source conforms to device requirements. 2. Increase hose diameter to 3/4 in. 3. Replace. 4. Remove obstruction. 5. Thin out liquid. 6. Clear area around motor.
Flow rate is low.	1. Hose is kinked. 2. Impeller is clogged or faulty. 3. Hose is too long.	1. Straighten. 2. Remove obstruction or replace. 3. Reduce length.
Pump does not run.	1. Pump has no power. 2. Impeller is clogged or faulty. 3. Motor has overheated and thermal protection system has tripped.	1. Check power source. 2. Remove obstruction or replace. 3. Wait 15 minutes for motor to cool.