




12V DC DIESEL FUEL TRANSFER PUMP

PUMP

OWNER'S MANUAL



 **WARNING:** Read carefully and understand all **INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item # 1096009

Thank you very much for choosing a NORTHERN TOOL + EQUIPMENT CO., INC. Product! For future reference, please complete the owner's record below:

Model: _____ Purchase Date: _____

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This machine is designed for certain applications only. Northern Tool + Equipment cannot be responsible for issues arising from modification. We strongly recommend this machine is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted Northern Tool + Equipment to determine if it can or should be performed on the product.

For technical questions please call **1-800-222-5381**.

INTENDED USE

The pump is designed to transfer diesel fuel only, for intermittent use with a working cycle of 30 minutes under maximum back pressure conditions.

TECHNICAL SPECIFICATIONS

Item No.	1096009
Electrical power	DC 12V
Current	Max. 24 Amp
Fuses	25
Working pressure	Max. 18 PSI
Flow rate range	9.5-11.6 GPM

General Safety Regulations



WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.



WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

WORK AREA

- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Keep children and bystanders** away while operating a transfer pump. Distractions can cause you to lose control, so visitors should remain at a safe distance from the work area.
- **Be aware of all power lines, electrical circuits**, water pipes and other mechanical hazards in your work area, particularly those hazards below the work surface hidden from the operator's view that may be unintentionally contacted and may cause personal harm or property damage.
- **Be alert of your surroundings**. Using your fuel pump in confined work areas may put you dangerously close to unsafe conditions.

ELECTRICAL SAFETY

- **This pump** gets its electrical power from batteries. It demands the same respect that "corded" tools demand. Remember, cordless tools are very capable of causing injury if all safety precautions are not followed. Read and thoroughly understand the instruction manual that is provided with the fuel pump.



WARNING! Always check to ensure the power supply corresponds to the voltage on the rating plate.

- **Do not abuse the cables**. Never carry this pump by its cables, or yank pump or cable from the battery. Keep cables away from heat, oil, sharp edges or moving parts. Replace damaged cables immediately. Damaged cables may cause a fire and increase the risk of electric shock.
- **Avoid body contact** with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increase risk of electric shock if your body is grounded.
- **Do not expose** your transfer pump to rain or wet conditions. Water entering a transfer pump will increase the risk of electric shock.
- **Do not let your fingers** touch the terminals of plug when installing to or removing from the battery.

PERSONAL SAFETY

- **Stay alert**, watch what you are doing and use common sense when operating a transfer pump. Do not use a transfer pump while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating transfer pumps may result in serious personal injury.
- **Dress properly**. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts. Air vents often cover moving parts and should be avoided.
- **Use safety apparel and equipment**. Use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use as dust mask in dusty work conditions. This applies to all persons in the work area. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate.

- **Avoid accidental starting.** Do not carry the transfer pump with your finger on the switch. Ensure the switch is in the off position before attaching to the battery.
- **Do not overreach.** Keep proper footing and balance at all times.
- **Remove adjusting keys or wrenches** before connecting to the power supply or turning on the pump. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.
- **Prolonged contact with diesel fuel can damage the skin.** The use of glasses and gloves is recommended.

TOOL USE AND CARE

- **Be aware that a cordless tool** can always be in an operating condition because it does not have to be plugged into an electrical outlet. Unless the battery cables are disengaged, the pump can function at any time the switch is turned on.
- **Do not force the tool.** Tools do a better and safer job when used in the manner for which they are designed. Plan your work, and use the correct tool for the job.
- **Never use a transfer pump** with a malfunctioning switch. Any transfer pump that cannot be controlled with the switch is dangerous and must be repaired by an authorized service representative before using.
- **Disconnect battery** from the transfer pump and place the switch in the locked or off position before making any adjustments, changing accessories, or storing transfer pumps. Such preventive safety measures reduce the risk of starting the transfer pump accidentally.
- **When battery is not in use,** keep it away from other metal objects like: paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause sparks, burns, or a fire.
- **Store idle tools.** When tools are not in use, store them in a dry, secure place out of the reach of children. Inspect tools for good working condition prior to storage and before re-use.
- **Use only accessories that are recommended** by the manufacturer for your model. Accessories that may be suitable for one tool may create a risk of injury when used on another tool.
- **Do not expose battery** to moisture, frost or temperature extremes of over 110 degrees Fahrenheit or under -20 degrees Fahrenheit.
- **Do not incinerate battery** or throw it into water even if it is damaged or is completely worn out. Batteries can explode in a fire.
- **Keep guards in place** and in working order.
- **Never leave tool** running unattended.
- **Check that the quantity of diesel fuel in the suction tank** is greater than the amount you wish to transfer.
- **Make sure that the residual capacity of the delivery tank** is greater than the quantity you wish to transfer.
- **Do not run the pump dry.** This can cause serious damage to its components.
- **Never start or stop the pump by connecting or cutting out the power supply.**
- **Do not operate switches with wet hands.**
- **Diesel fuel leaks can damage objects and cause injuries.**
- **Make sure that the tubing and line accessories are in good condition.**

INITIAL STARTUP



WARNING: Extreme operation with working cycles longer than 30 minutes can cause the motor temperature to overheat and could damage the motor. Each 30-minute working cycle should always be followed by a 30-minute cooling phase.

In the priming phase, the pump must blow the air initially present in the entire installation out of the delivery line. Therefore it is necessary to keep the outlet open to permit the evacuation of the air.



WARNING: If an automatic dispensing nozzle is installed at the end of the delivery line, the evacuation of the air will be difficult because of the automatic stopping device that keeps the valve closed when the line pressure is too low. It is recommended that the automatic dispensing nozzle be temporarily disconnected during the initial start-up phase.

The priming phase can last from several seconds to a few minutes, as a function of the characteristics of the system. If this phase is prolonged, stop the pump and verify:

- That the pump is not running completely dry;
- That the suction tubing is not allowing air to seep in;
- That the suction filter is not clogged;
- That the suction height does not exceed 6½ feet. (if the height exceeds 6½ feet, fill the suction hose with fluid);
- That the delivery tube is allowing evacuation of the air.

When priming has occurred, verify that the pump is operating within the anticipated range, in particular:

- That under conditions of maximum back pressure, the power absorption of the motor stays within the values shown on the identification plate;
- That the suction pressure is not greater than 7.25 PSI;
- That the back pressure in the delivery line is not greater than the maximum back pressure foreseen for the pump.

DAILY USE OF YOUR TRANSFER PUMP

1. If using flexible tubing, attach the ends of the tubing to the tanks. In the absence of appropriate fittings, solidly grasp the delivery tube before beginning dispensing.
2. Before starting the pump, make sure that the delivery valve is closed (dispensing nozzle or line valve).
3. Turn the ON/OFF switch to the ON position. The bypass valve allows functioning with delivery closed only for brief periods.
4. Open the delivery valve, solidly grasping the end of the tubing.
5. Close the delivery valve to stop dispensing.
6. When dispensing is finished, turn off the pump.



WARNING: The pump can function with the delivery valve closed for brief periods (2–3 minutes maximum). After use, make sure the pump is turned off.

PUMP USE

This pump is designed for diesel fuel only. The transfer pump works with diesel fuel at a viscosity from 2 to 5.35 cSt (at a temperature of 100°F or less). The minimum flash point (PM) is 131°F.

Do not use your transfer pump with these liquids for the reasons listed in this chart:

Description	Related Dangers
Gasoline	Fire – Explosion
Inflammable Liquids With Pm<55°C	Fire – Explosion
Liquids With Viscosity>20cst	Motor Overload
Water	Pump Oxidation
Food Liquids	Contamination
Corrosive Chemical Products	Pump Corrosion, Injury To Persons
Solvents	Fire – Explosion, Damage To Gasket Seals

OPERATING YOUR TRANSFER PUMP



WARNING: Do not install the pump where inflammable vapors can be present.

1. Preliminary Inspection

- Ensure that battery is not connected to pump prior to inspection.
- Check that the machine has not suffered any damage during transport or storage.
- Clean the inlet and outlet openings, removing any dust or residual packing material.
- Check that the electrical specifications correspond to those shown on the identification plate.

2. Positioning the Pump

- The pump can be installed in a horizontal position.
- Attach the pump using screws of adequate diameter (included) for the attachment holes provided in the base of the pump, see the section “INSTALL DIMENSIONS” for their position and dimension.

3. Connecting the Tubing

- Before connection, make sure that the tubing and the suction tank are free of dirt and thread residue that could damage the pump and its accessories.
- Before connecting the delivery tube, partially fill the pump body with diesel fuel to facilitate priming.
- Do not use conical threaded joints that could damage the threaded pump openings if excessively tightened.
- The pump suction filter must be installed prior to use. It is included in the package.



WARNING: It is the installer’s responsibility to use suitable tubing with this pump. The use of tubing unsuitable for use with diesel fuel can damage the pump, and cause potential injury and pollution of the environment. Loose connections (threaded connections, flanging, gasket seals) can cause serious ecological and safety issues. Check all the connections after the initial installation and on a daily basis after that. Tighten the connections, if necessary.

SUCTION TUBING:

- Minimum recommended nominal diameter: 3/4".
- Nominal recommended pressure: 145PSI.
- Use tubing suitable for functioning under suction pressure.

DELIVERY TUBING:

- Minimum recommended nominal diameter: 3/4".
- Nominal recommended pressure: 145 PSI.

PUMP DELIVERY

The pump model must match the capacity of system. The combination of the length of the tubing, the diameter of the tubing, the flow rate of the diesel fuel and the installed line accessories can affect pump performance by creating back pressure exceeding the pump specifications. This could cause the (partial) opening of the pump bypass, which will affect the flow rate and overall performance. To correct this issue, it is necessary to reduce system resistance by using shorter tubing and/or of wider diameter and line accessories with less resistance (e.g. an automatic dispensing nozzle for greater flow rates).

SUCTION

Your transfer pump is a self-priming pump with a good suction capacity. During the startup phase, with an empty suction tube and the pump correctly primed, the electric pump unit is capable of suctioning the liquid with a maximum difference in height of 6½ feet. Priming time can be as long as one minute; because the pressure of an automatic dispensing nozzle on the delivery line prevents the evacuation of air from the installation, it is always advisable to prime the pump without an automatic delivery nozzle, verifying the proper wetting of the pump. An one-way valve of unseal pressure 1.45 PSI (not included) is recommended to prevent the suction tube from emptying and to keep the pump wet. In this way, the pump will subsequently always start up immediately.

When the system is functioning, the pump can work with pressure at the inlet as high as 7PSI. Operation beyond that level can cause a decreased flow. Using short tubing of a diameter equal to or larger than recommended 3/4", reducing curves to a minimum and using suction filter (included) of wide cross-section and foot valves with the lowest possible resistance will ensure top performance.

The difference in height between the pump and the fluid level must be kept as small as possible and, within 6½ feet for the priming phase. If this height must be exceeded, installation of a foot valve is required. It is recommended that the pump not be installed at a difference in height greater than 9 feet.



WARNING: In applications where the suction tank is higher than the pump, it is advisable to install the fuel nozzle, and then install the suction tube towards the suction tank. That is to prevent accidental diesel fuel leaks from the siphon.

In applications where the pump is lower than the fuel nozzle, it is recommended that the difference in height is not larger than 2m, in order to control the back pressure caused by water hammer effect.



WARNING: It is the installer's responsibility to perform all electrical connections in accordance with any applicable regulations.

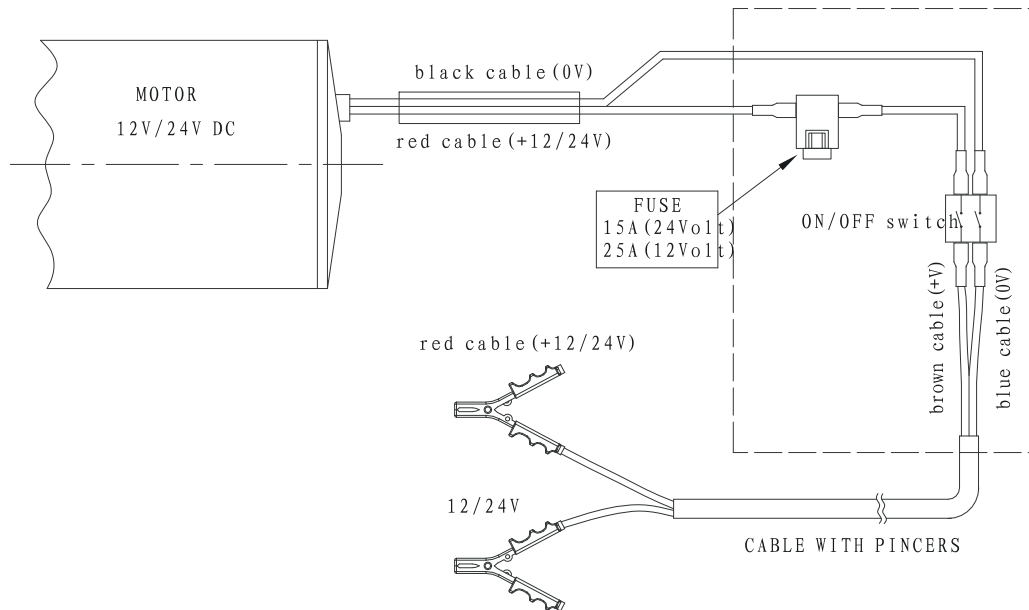
4. Electrical Configuration of Your Pump

Your transfer pump features a terminal strip box with a safety fuse and pincers for connection to a 12V battery. The terminal strip box features:

- ON/OFF switch;
- 25 Amp safety fuse against short circuits and overcurrent
- 6½-ft. power cable complete of pincers for connection to the battery

RED cable: positive pole (+)

BLACK cable: negative pole (-)



- During installation and maintenance, make sure that the electric supply lines are not live.
- Always close the cover of the strip box before supplying electrical power.
- Check the correct rotation direction of the pump. If it is inverted, check the polarity of the connection cable.

MAINTENANCE

- All models are designed and constructed to require a minimum of maintenance. Following these basic recommendations will improve pump performance and longevity
- On a weekly basis, check that the tubing joints have not loosened, to avoid any leakage.
- On a weekly basis, check and clean the line suction filter.
- On a monthly basis, check the pump body; keep it clean of any impurities.
- On a monthly basis, check that the electric power supply cables are in good condition.
- On a monthly basis check and keep clean the dispensing nozzle. Keep any final check valve installed.
- On a monthly basis, inspect the suction filters and clean as needed.

INSTALL DIMENSIONS

Unit of measurement: mm

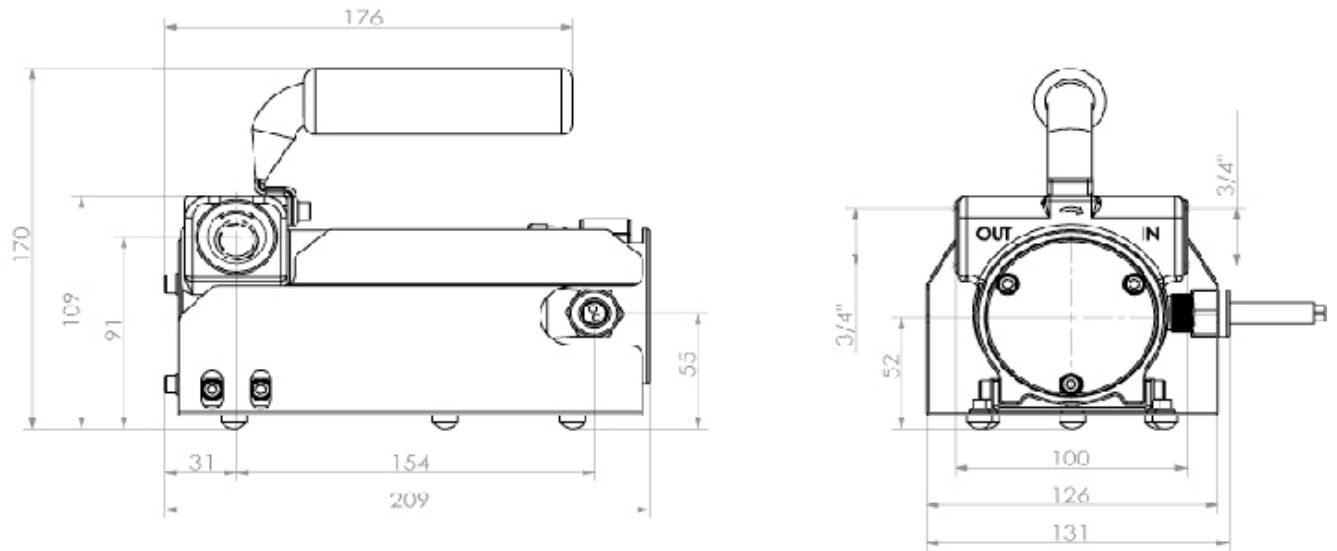
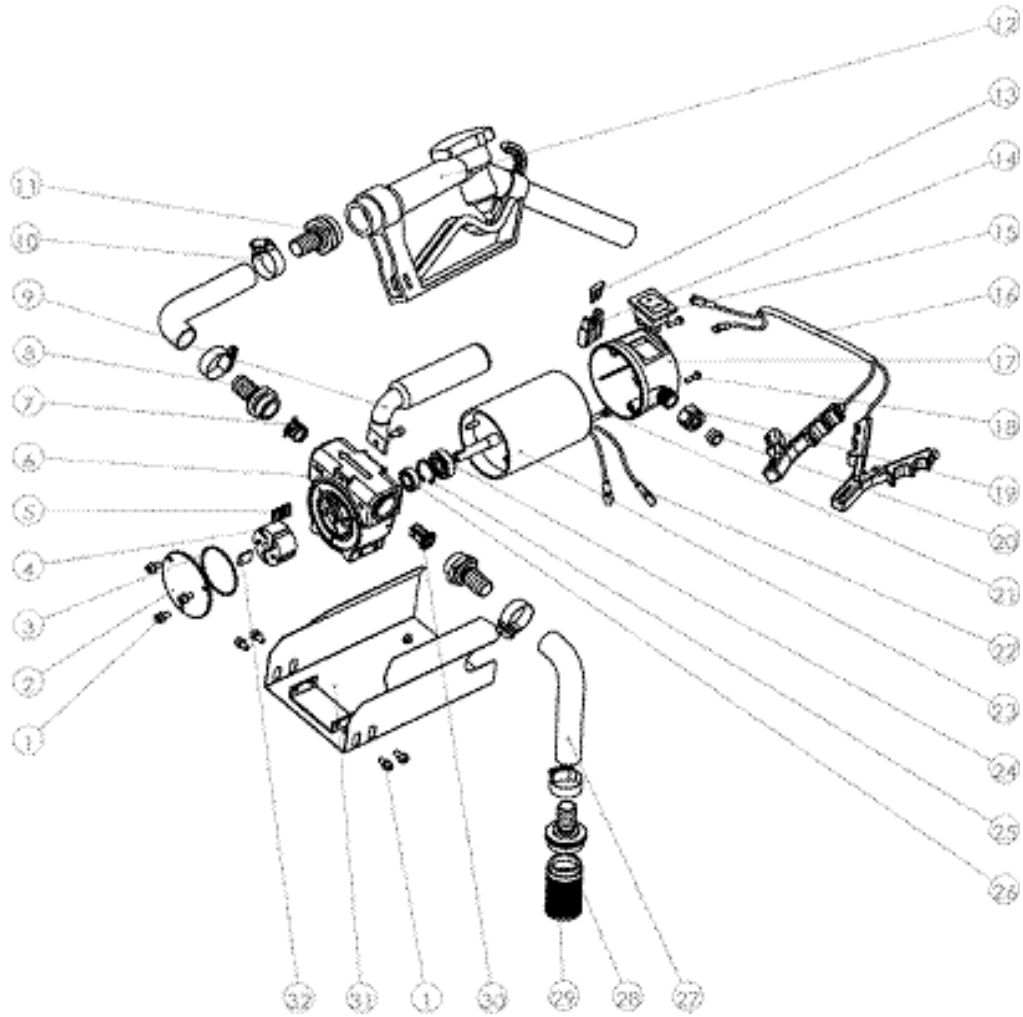


DIAGRAM & PARTS LIST



No.	Description	Quantity	No.	Description	Quantity
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1	SCREW M5×10	8	17	TERMINAL BOARD	1
2	FRONT COVER	1	18	SCREW M4×15	2
3	O-RING	1	19	COMPACTION NUT	1
4	ROTOR	1	20	TAPER RING	1
5	BLADE	5	21	NUT M5	2
6	PUMP BODY		22	POWER LINE	2
7	BY PASS SPRING	1	23	MOTOR 12V/24V	1
8	HOSE HOLDER 3/4" + O-RING	2	24	BEARING	2
9	HANDLE	1	25	SPRING COLLAR	1
10	CLAMP 22-32 SCREW	4	26	SEAL	1
11	HOLDER 1"	1	27	TUBE	2
12	MANUAL NOZZLE	1	28	HOLDER 1"	1
13	FUSE 15A/25A	1	29	FILTER	1
14	FUSE-CARRIER	1	30	BY PASS VALVE	1
15	SINGLE-POLE SWITCH	1	31	BASE	1
16	LINE CORD 2MT	1	32	KEY	1

For replacement parts and technical questions, please call **1-800-222-5381**.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
The Motor is not turning	Lack of electric power	Check the electrical connection
	Rotor Jammed	Check for possible damage or obstruction of the rotating components
	Motor Problems	Contact the Service Department
The motor turns slowly when starting	Low voltage in the electric power line	Bring the voltage back within the anticipated limits
Low or no flow rate	Low level in the suction tank	Refill the tank
	Foot valve blocked	Clean and/or replace the valve
	Filter clogged	Clean the filter
	Excessive suction pressure	Lower the pump with respect to the level of the tank or increase the cross-section of the tubing
	High loss of head in the delivery circuit (working with the bypass open)	Use shorter tubing or of greater diameter
	Bypass valve blocked	Dismantle the valve, clean and/or replace it.
	Air entering the pump or the suction tubing	Check the seals of the Connections

	A narrowing in the suction tubing	Use tubing suitable for working under suction pressure
	Low rotation speed	Check the voltage at the pump. Adjust the voltage and/or use cables of greater cross-section
	The suction tubing is resting on the bottom of the tank	Raise the tubing
Increased pump noise	Suction pressure is increased when the difference between the pump and the fluid level is larger than 2m	Decrease the difference to reduce suction pressure
	Irregular functioning of the by-pass	Dispense fuel until the air is purged from the by-pass system
	Air present in the diesel fuel	Verify the suction connection
Leakage from the pump body	Seal Damaged	Check and replace the seal

If the pump is not working properly, contact an authorized service representative. Do not attempt to repair this pump yourself.



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