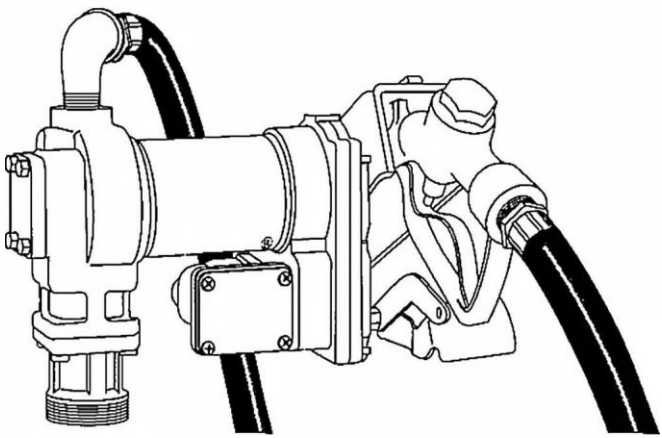
DSTP20: Fuel Transfer Pump

- Up To 20 GPM
- Integral inlet screen
- 2” Male NPT On Bung Adapter
- Security: Pump equipped for padlocking
- Ball Bearing Construction, No Lubrication Required
- Dimensions: 14" wide x 9" high x 5" deep
- 11 '7" 1 in. Hose with Nozzle
- Integral Inlet Screen 1” Female NPT On Suction Port
- 1/4 HP 12v DC Motor, Permanent Magnet, Bearing Construction, No Lubrication Required.



FLUID COMPATIBILITY:

The pump is compatible with the following fluids:		
• Diesel	• Kerosene	• Heptane
• Gasoline	• Mineral Spirits	• Hexane

The pump is NOT compatible with the following fluids:			
• Acetone	• Ammonia	• Benzene	• Bleach
• Hydrochloric acid		• Ink	• Toluene

If in doubt about compatibility of a specific fluid, contact supplier of fluid to check for any adverse reactions to the wetted materials shown in the parts list

READ ALL INSTRUCTIONS BEFORE USING THIS TOOL!

KEEP THE MANUAL AND INVOICE IN A SAFE AND DRY PLACE FOR FUTURE REFERENCE!

1. **Keep work area clean.** Cluttered areas invite injuries. DO NOT smoke near pump or use pump near an open flame.
2. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords. Always lock up tools and keep out of reach of children.
3. **Use the right tool for the job.** This product should not be used for fluid transfer into aircraft. This product is not suited for use with fluids for human consumption or fluids containing water. Do not modify this tool and do not use this tool for a purpose for which it was not intended. It will do the job better and more safely at the rate for which it was intended.
4. **Do not overreach.** Keep proper footing and balance always. Do not reach over or across running machines.
5. **Maintain tools with care.** Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have them repaired by an authorized technician. The handles must be kept clean, dry, and free from oil and grease always.
6. **Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.
7. **Check for damaged parts.** Before using any tool, any part that appears damaged should be carefully checked to determine that it would operate properly and perform its intended function. Check for any broken parts or mounting fixtures and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician.
8. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool.
9. **Do not operate tool if under the influence of alcohol or drugs.** Read warning labels when taking prescription medicine your judgment or reflexes may be impaired. If there is any doubt, do not operate the tool.
10. **Pacemaker safety warning.** People with pacemakers should consult with their physician(s) before using this product; operation of equipment near a heart pacemaker could cause interference or failure of the pacemaker.
11. Pump has a built-in check valve with pressure relief to prevent fluid thermal expansion from causing unsafe system pressures. Do not install additional check valves or foot valves during installation without proper pressure relief valves built into them. Housing or plumbing cracking may result.

WARNING!

The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may 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.

MAINTENANCE

- Disconnect power to pump before servicing pump.
- To keep pump running at its best, thoroughly flush pumps to be stored for long periods of time with diesel fuel.
- Remove and clean strainer screen after every 20 hours of operation. Cleaning frequency depends on fluids being pumped.
- For your safety, service and maintenance should be performed regularly by a qualified technician.
- Take motors needing service to an authorized repair shop to maintain "explosion proof' integrity.

INSTALLATION

- The hose used with this pump must be of conductive jacket design, or have ground wire connecting inlet and outlet fittings to avoid build-up of static charge.
- Systems should be set-up to require a minimum amount of suction lift. Maximum vertical distance from the surface of the fluid in the tank to the inlet of the pump is 9 ft. for gas and 10 ft. for diesel fuel.
- A filter should be used on pump outlet to ensure that no foreign material is transferred to fuel tank.
- Tank or barrel must be properly vented.
- Use a gasoline and oil proof pipe compound on all joints.
- A water separator should be used for pumping diesel fuel.

ATTACHING PUMP TO TANK OR BARREL

1. Tightly screw extension pipe into inlet flange of pumping unit. Attach second extension pipe and suction pipe to extension pipe in the same manner.
2. Cut suction pipe to a length that will place its end within 3" of the BOTTOM of the tank. Do not rest suction pipe on bottom of tank.
3. Screw inlet flange of pump into tank or barrel opening inlet flange must be completely and securely threaded into an undamaged tank or barrel bung.
4. Install hose and nozzle to pump before connecting power wires together. Ground wire must be connected.
5. Tank or barrel should be anchored down to prevent tipping when full or empty.

If Connected to A Vehicle:

1. DO NOT attempt to power the pump from thin vehicle wiring such as the cigarette lighter wire.
2. Ground wire must always be independently connected to chassis of vehicle being fueled and/or container being filled. DO NOT connect green and black wires together, for example.
3. Unless pump body and tank/chassis are at same electrical potential, sparking due to static charge or wiring faults could ignite fuel fumes, resulting in an explosion.
4. If pump is to be powered from a vehicle power system, it is recommended that permanent wiring and connections be made to vehicle power system which includes a 30-amp slow blow fuse.

CONNECTING PUMP

Read and understand all the electrical wiring instructions before proceeding.

1. Remove pump's electrical junction box cover and straighten the 3 wires to make the stripped wire ends accessible outside of the junction box.
2. Screw furnished cable connector in to the conduit opening in pump junction box.
3. Strip 6 inches of the outer insulating covering from one end of the furnished electrical cable being careful not to damage the wire insulation.
4. Pass the stripped end of the furnished cable through the cable connector until 2 inches of the unstripped wire is within the junction box.
5. Strip 1 /2 inch of the insulation from the ends of the cable wires. Connect these wires to the matching colored pump wires using wire nuts, be sure no bare wire is exposed.
6. Fold wires into junction box and replace cover.
7. Make sure all screws are seated so there is no space between the cover and the junction box.
8. Run the electrical cable to the vehicle power system, supporting the cable as necessary and protecting it from sharp edges, heat and anything that could damage the cable.
9. Strip the outer cable covering as necessary. Make a solid electrical connection to the vehicle frame with the ground (green) wire.
10. To determine if the vehicle electrical system is negative (-) or positive (+) ground, check the battery marking of the terminal that is wired to the vehicle frame or motor block. For vehicles with negative ground, connect the negative (black) to the vehicle frame. For vehicles with positive ground, connect the positive (red) wire to the vehicle frame.
11. Attach one end a 30-amp fuse holder to the end of the remaining wire. Connect the other end of the fuse holder to the ungrounded side of the power source. The battery terminal or the end of the battery cable is recommended.
12. Check all connections to make sure they are correct. Install the 30-amp slow blow fuse in the fuse holder.

The installation is now complete.

OPERATION

To ensure ultimate performance, pump must be set up per **INSTALLATION** section of this manual. On initial start-up, it may be necessary to hold nozzle open a few seconds to allow pump to prime:

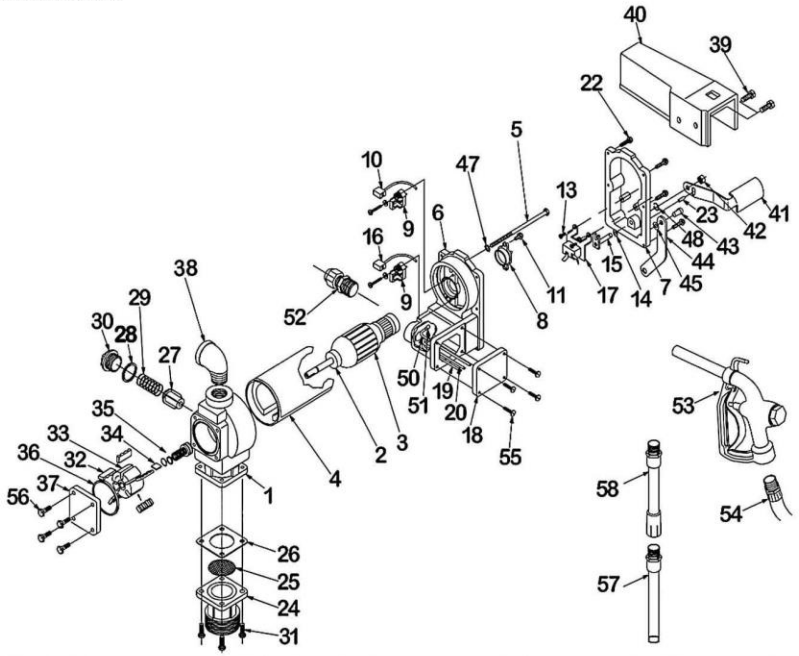
1. Remove nozzle from pump and insert into tank.
2. Turn pump on by lifting the switch lever.
3. Begin fueling by squeezing nozzle lever.

WARNING! The pump motor is equipped with thermal with thermal overload protection. If overheated, it will shut itself off without any damage to the windings. Be sure to turn off the pump power if this occurs. As the motor cools, it will start without warning if power is on.

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump does not prime	1. Suction line problem	1. Check for leaks in suction line.
	2. Bypass valve open	2. Remove and inspect valve.
	3. Vanes sticking	3. Check vanes and slots for nicks, burrs or wear.
	4. Gasket leakage	4. Tighten covers and joints.
	5. Excessive rotor or vane wear	5. Check rotor and vanes for excessive wear or damage.
	6. Outlet is blocked	6. Check pump outlet, hose, nozzle and strainer screen for blockage.
	7. Motor not operating	7. Rotor should turn clockwise at pump end; if not, return for repair.
	8. Motor runs backwards	8. Check wiring for correct polarity.
Pump hums but will not operate	1. Dirt in pump cavity	1. Clean out pump cavity.
	2. Motor failure	2. Motor bearing(s) frozen; return for repair.
Low capacity	1. Excessive dirt in strainer	1. Remove and clean strainer.
	2. Suction line problem	2. Check suction line for leaks or restrictions; it may be too small, too long or not airtight.
	3. Bypass valve sticking	3. Remove and inspect valve.
	4. Vanes sticking	4. Check vanes and slots for wear.
	5. Excessive rotor or vane wear	5. Check rotor and vanes for excessive wear or damage.
	6. Hose damaged	6. Replace hose.
Pump runs slowly	1. Incorrect voltage	1. Check incoming line voltage.
	2. Vanes sticking	2. Check vanes and slots for wear.
	3. Wiring problem	3. Check for loose wires.
	4. Casting out of line	4. Motor frame must be installed with punch mark in line with notch in motor casting.
	5. Brush problem	5. Check brushes for excessive wear and adequate spring tension.
	6. Motor problem	6. Inspect armature and commutator.
	7. Motor failure	7. Motor bearing(s) failing; return for repair.
Motor stalls	1. Bypass valve sticking	1. Remove and inspect valve.
	2. Low voltage	2. Check incoming line voltage.
	3. Excessive rotor or vane wear	3. Check rotor and vanes for excessive wear or damage.
Motor overheats	1. Pumping high viscosity fluids	1. These fluids can only be pumped for short periods of time (less than 1/2 hour duty cycle).
	2. Clogged strainer	2. Remove and clean strainer.
	3. Restricted suction pipe	3. Remove and clean pipe.
	4. Weak armature	4. Replace armature.
	5. Motor failure	5. Bearing(s) tightening up; return for repair.
Motor will not turn on	1. No power	1. Check incoming power source.
	2. Switch failure	2. Check line switch.
	3. Motor failure	3. Return for repair.
	4. Thermal protector failure	4. Check thermal protector.
Fluid leakage	1. Bad o-ring gasket	1. Check all o-ring gaskets.
	2. Dirty shaft seal	2. Clean seal and seal cavity.
	3. Bad shaft seal	3. Replace seal.
	4. Incompatible fluid	4. Refer wetted parts list to fluid manufacturer.

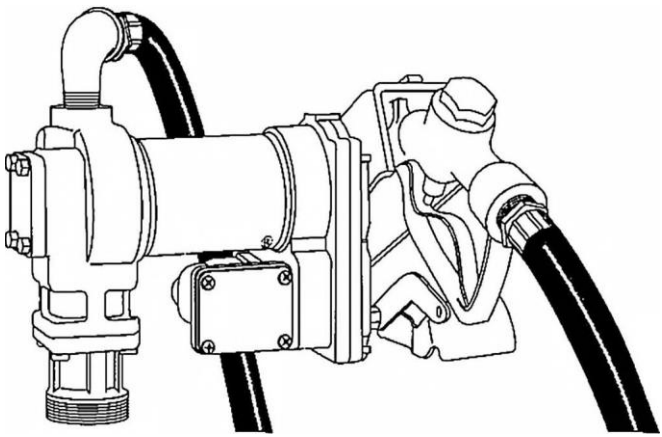
PARTS LIST



NO.	DESCRIPTION	QTY
1	Pump Housing	1
2	Ball Bearing	2
3	Armature Assembly	1
4	Motor Frame/Magnet Assembly	1
5	1/4-20x 5 Thru-Bolt	2
6	Motor Casting Assembly	1
7	Switch Plate with Bushing	1
8	Thermal Protector	1
9	Brush Holder Assembly	2
10	Negative Brush Assembly	1
11	#8-32 X 1/2 Torx	1
13	#8-32 X 3/8 Torx	2
14	5/16 Spring Washer	1
15	Switch Shaft Assembly	1
16	Positive Brush Assembly	1
17	Line Switch	1
18	Junction Box Cover	1
19	Negative Wire Lead	1
20	Positive Wire Lead	1

NO.	DESCRIPTION	QTY
22	10-24 X 3/4" Torx	6
23	5/32 X 1/2 Pin	1
24	Inlet Flange	1
25	Screen	1
26	Inlet Gasket	1
27	Bypass Valve	1
28	Bypass Valve Gasket	1
29	Bypass Spring	1
30	Bypass Cap	1
31	1/4-20 X 3/4 HHCS	1
32	Vane	4
33	Rotor	5
34	Rotor Key	1
35	Rotor Cover	1
36	Rotor Cover Gasket	1
37	Seal Assembly	1
38	1 Steel Elbow	1
39	5/16-18 X 3/4 HHCS	1
40	Nozzle Cover	2

NO.	DESCRIPTION	QTY
41	Switch Lever	1
42	5/15 X 18 Locknut	1
43	#14 X 5/8 Drive Screw	1
44	Locking Link	1
45	1/4 Spring Washer	1
46	1/4 Ext. Lock Washer	1
48	5/16 Retaining Ring	2
49	Ground Wire, Green	1
51	#8-32 X 3/8 Ground Screw	1
52	Cable Connector	1
53	Nozzle	1
54	Hose	1
55	10-24 X .50 Torx	4
56	1/4-20 X .5 HHCS	4
57	Suction Pipe	1
58	Suction Pipe Extension	1
***	Cable (NOT SHOWN)	2



DuroStar Equipment
5798 Ontario Mills Pkwy
Ontario, CA 91764
For Support:
Please call: 800-629-3325 M – F 7a – 5p PT
Or email: support@maxtool.com