

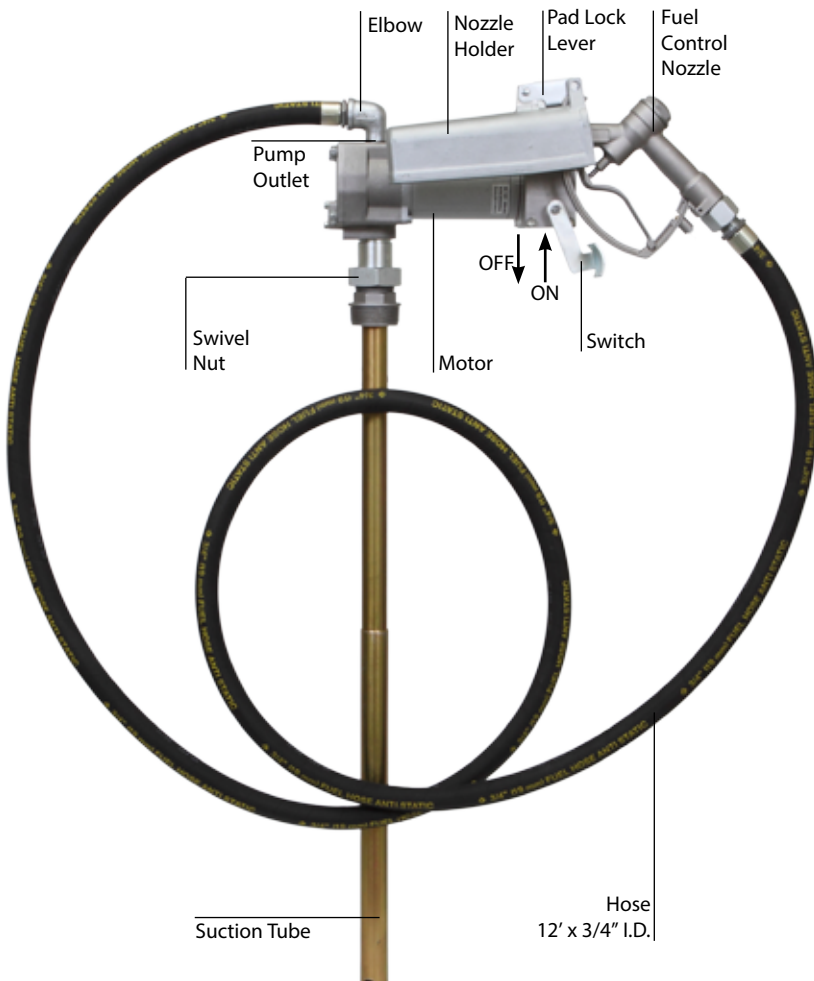
ATD-50012

Electric Fuel Pump

(FPM-12)



Congratulations on purchase of this World Class Electric Fuel Pump!



This is an Electric Fuel Pump. Pump uses 2 Sintered Powder Metal gears for suction & is designed for use with Gasoline, Diesel, E15 Fuel, Kerosene, Bio Diesel (B20) etc. In ideal laboratory conditions, pump dispenses up to 15 GPM (57 LPM) at the pump outlet. The actual discharge varies depending on fuel being used, temperature, Hose Length, power supply etc.




ATD-50012 is a 12V DC Pump


Rating is marked on the pump motor. Pump uses an Explosion Proof motor & the motor is UL , cUL, ATEX & IECEX listed.


California Prop 65 WARNING:


Batteries contain lead and other chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. **Wash hands after handling.**


General Safety Warnings:


 **WARNING:** The instructions and warnings contained in this manual should be read and understood before using or operating this tool. Do not allow anyone to use or operate this tool until they have read this manual and have developed a thorough understanding of how this tool works. Failure to observe any of the following instructions could result in severe personal injury to tool user and bystanders, or cause damage to the tool and property. Keep this manual for future reference.


 **Note:** The warnings and cautions 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.


 **WARNING:** Use safety equipment. Users and bystanders should use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists. 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.

 **WARNING:** Keep bystanders and children out of the work area while operating this tool.


 **WARNING:** Always keep your work area clean, uncluttered, and well lit. Cluttered or dark areas invite accidents and injuries. DO NOT work on floor surfaces that are slippery.

 **WARNING:** Do not operate this tool if you are tired or under the influence of alcohol, drugs, or medications that could affect your ability to use the tool properly.

 **WARNING:** Dress properly. Do not wear loose clothing or jewelry as they can be caught in moving parts. Wear restrictive hair covering to contain long hair.

 **WARNING:** Do not reach over or across running machines. Keep proper footing and balance at all times. Non-skid footwear is recommended when working.

Lead Acid Battery Safety Warnings:

 **WARNING:** The instructions and warnings contained in this manual should be read and understood before using or operating this tool. Do not allow anyone to use or operate this tool until they have read this manual and have developed a thorough understanding of how this tool works. Failure to observe any of the following instructions could result in severe personal injury to tool user and bystanders, or cause damage to the tool and property. Keep this manual for future reference.

 **CA Prop 65 WARNING:**

Batteries contain lead and other chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. **Wash hands after handling.**

 **WARNING:** WORKING AROUND LEAD-ACID BATTERIES MAY BE DANGEROUS.

- Lead-acid batteries release explosive gases during normal operation, charging and jump starting.
- All lead-acid batteries (car, truck and boat) produce hydrogen gas which may violently explode in the presence of fire or sparks. **Do not smoke, use matches or a cigarette lighter while near batteries.** Only work with lead-acid batteries in a well-ventilated area. Do not handle the battery while wearing vinyl clothing because static electricity sparks are generated when vinyl clothing is rubbed.
- To reduce risk of battery explosion, follow these instructions and those published by the battery manufacturer and manufacturer of any equipment you intend to use in the vicinity of the battery. Review cautionary markings on these products and on engine.

EYE PROTECTION:

- User and bystanders should always wear eye protection, appropriate protective clothing and other safety equipment when working near lead-acid batteries. Do not touch eyes while working on or around lead-acid batteries.
- **IF SPLASHED WITH BATTERY ACID, IMMEDIATELY FLUSH AFFECTED AREA SUCH AS FACE AND PARTICULARLY THE EYES WITH CLEAN WATER. SEEK MEDICAL ATTENTION AND CONTINUE FLUSHING FACE AND EYES UNTIL MEDICAL HELP ARRIVES.**

WORKING IN ENGINE COMPARTMENT:

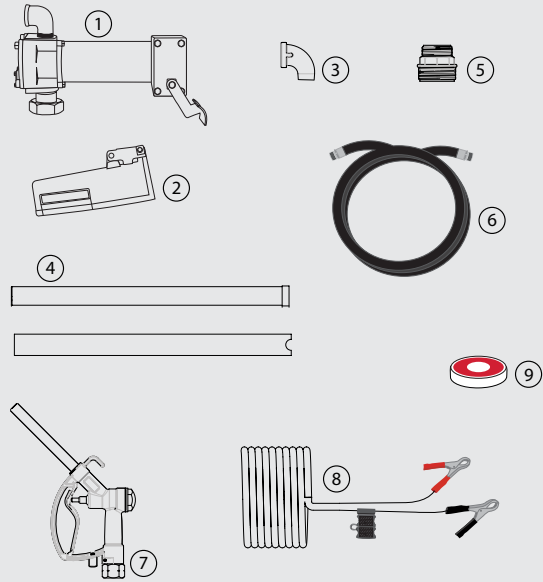
- Use extreme caution while working within the engine compartment, because moving parts may cause severe injury. Read and follow all safety instructions published in the vehicle's Owner's Manual.

GENERAL PRECAUTIONS / PERSONAL PRECAUTIONS:

- Never work alone with lead-acid batteries. Make sure that someone is around to give assistance if you need help.
- Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
- In case of battery acid contact with eyes, skin or clothing, always have soap and water near your work area.
- Remove jewelry such as rings, bracelets, necklaces and watches when working around a battery. A lead-acid battery can produce a short circuit current, which can melt metals and result in a severe burn.
- Do not drop tools or other metal objects on or near the battery as a spark may result, igniting explosive gases.
- Never attempt to jump start a frozen battery.

PUMP CONSTITUENTS

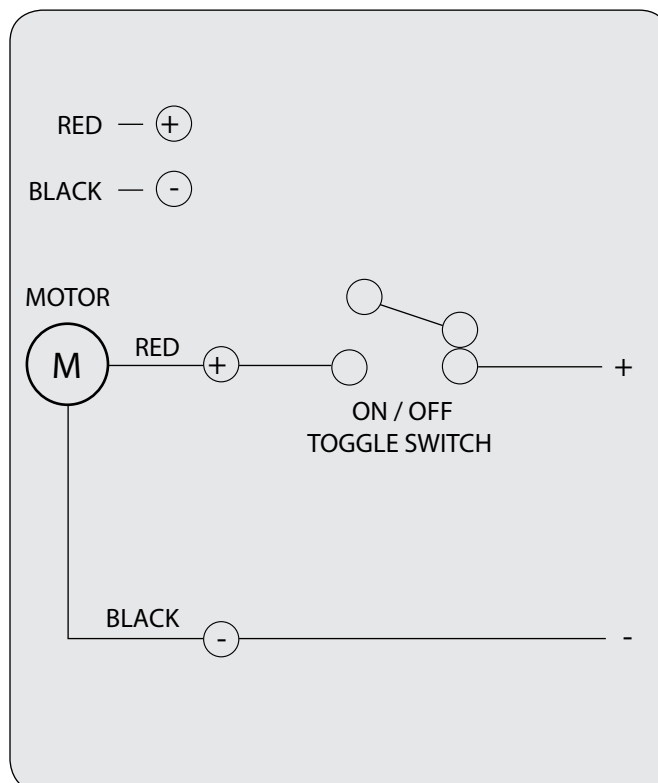
1. Pump & Motor Assembly
2. Nozzle Holder
3. Elbow
4. Suction Tube (2 parts)
5. Bung Nut
6. Hose Assembly (12' Long x 3/4" ID Anti Static Hose)
7. Fuel Control Nozzle
8. Power Cord complete with Fuse & Clamps
9. PTFE Tape



ELECTRICAL INSTALLATION - DC MOTORS

Cable systems and accessories should be installed in positions that prevent them from being subject to mechanical damage, corrosion, chemical attack, heat and other detrimental environmental conditions. Selection of the wiring system and cable type must consider these influences and where exposure to such conditions are avoidable, protective measures such as minimizing the risk of mechanical damage by the use of appropriate armoured cable types should be considered. Motor must be connected using a cable incorporating an earthing or equipotential bonding conductor. Filed wiring shall comply with requirement stated article 501 in National Electrical Code (NEC) for Class I, Division 1 Location.

ELECTRICAL DIAGRAM FOR DC MOTOR



ASSEMBLY & INSTALLATION

Ensure tank / drum being used is clean & free of welding slag. Ensure the tank is vented to allow air into the tank as fuel is being pumped out. Failure to provide a vent will cause priming problems

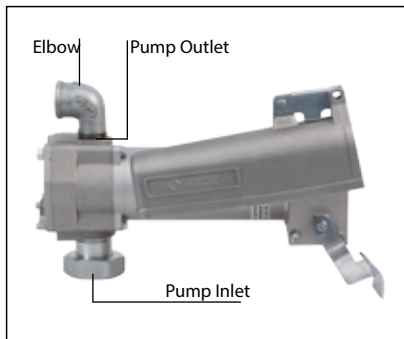
1. Wrap around PTFE tape on the following male threaded joints. This will ensure a leak-proof connection

- Male Threads on the Elbow
- Male Threads on the Fitting ends of the Hose
- Male threads between the 2 Suction Tube parts
- Male threads on the Suction tube end that fits into the pump inlet

2. Assemble the Nozzle Holder with the pump. In order to do so, open the 2 bolts on top of the On / Off Switch. Remove the bolts & re-attach along with the nozzle holder



3. Now Fasten the Elbow into the pump outlet & hand tighten. Once you can no longer hand tighten, take a wrench & tighten the elbow by about 1/2 a turn.

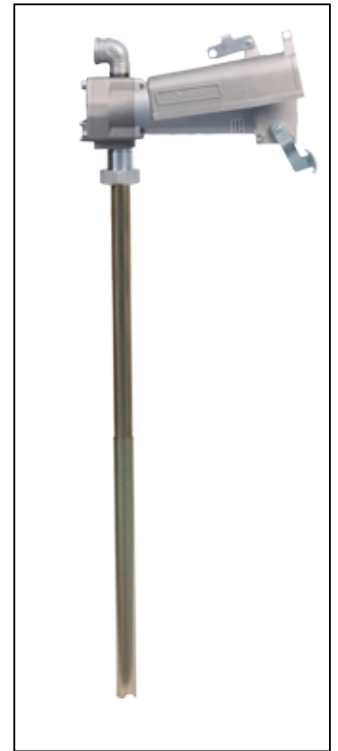


4. Take the Bung Nut & fasten it onto the 2" opening on the Drum/ Tank. Bung Nut has a large 2" thread & a small 1-1/2" thread. 2" thread goes into the drum/ tank, whereas the 1-1/2" thread is for connecting bung to the pump



5. In case the Bung Nut does not fit onto your drum/ tank, use a Drum Bung Converter. Note that bung supplied with the pump has 2" Pipe threads

6. Connect the two halves of the Suction Tube. Suction tube is designed for use with tanks / drums which are 36" (914 mm) deep & has a total connected length of 34" (865 mm). In case you are installing the pump on a tank that is deeper, you would have to get a standard 1" dia. tube with 1" NPT threads on one end. Suction tubes longer than 5' (1.52 m) require a foot valve (not provided) at the bottom of the tube to prevent loss of prime. For shallower drums, cut the suction tube to the desired length. Ensure that there is about 2" (50 mm) gap between the bottom of the tank/drum & inlet of the suction tube allowing for easy entry of fuel into the tube. Now connect the Suction Tube to the pump inlet. Hand tighten



7. Lift the Pump from the motor. Be careful as the assembly is heavy. Insert suction tube into the drum through the 2" opening on the drum. Use the Swivel Nut mounted at the pump inlet to fasten onto the Bung Nut. Hand tighten



8. Take the Fuel being dispensed & pour it into the pump outlet, until completely filled. This will ensure that the gear chamber stays lubricated & makes it easier for the pump to prime

9. Take the Hose Assembly & connect the threaded end onto the Elbow at the pump outlet. Hose has a hex nut at the threaded end which can be tightened to the elbow using a wrench



10. Connect the other end of the Hose to the Fuel Control Nozzle
11. Connect Power cord to source of power & switch it ON

- The pump is now ready for use



PRIMING

All pump models using the supplied 34" (865mm) suction tube should prime within 10 seconds after pump is turned on. Pumps installed at a height upto 5' (1.52 m) may have difficulty in priming. Follow the procedure below to initiate priming. Pumps installed at a suction height above 5' (1.52m) may have difficulty in holding prime. It is recommended that a foot valve with ball check (not supplied with the pump) be added to the bottom of the suction tube to maintain prime

- Remove the Elbow from the pump outlet
- Pour fuel being pumped into the pump outlet until completely filled
- Re-assemble the Elbow back into the pump outlet & turn the pump on. Pump should get primed in less than 10 seconds
- If pump still does not gain prime, check for any major leaks in the system. If no leaks are found, then the pump is mechanically defective & should be reported back to your Distributor

PUMP OPERATION

- Remove Nozzle from the Nozzle Holder. The On\ Off switch can be Switched ON only once the nozzle is removed from the nozzle holder



- Nozzle should be facing the container into which Fuel is to be dispensed

- Pump On/Off Switch Lever is located under the nozzle holder. Move switch lever ON & simultaneously open the Nozzle



Pump in ON Position

- In less than 10 seconds, the pump will be primed & fuel will start dispensing from the Nozzle
- Dispensing Action can be stopped by closing the Nozzle, with the pump still ON. This however must not be done for more than 5 minutes. DO NOT operate the pump for more than 30 minutes continuously in 1 hour
- It is best practice to Switch Lever in the OFF position to stop dispensing
- The pump must never be run dry (no media in the drum) as that can possibly cause irreparable damage to the motor
- Once Dispensing is completed, switch off the Lever & disconnect power supply to the pump
- Store the Nozzle Back into the Nozzle Holder

WARNING

Do not use curb pump auto nozzle with this pump. Contact your distributor for auto nozzles for use with electric fuel pumps

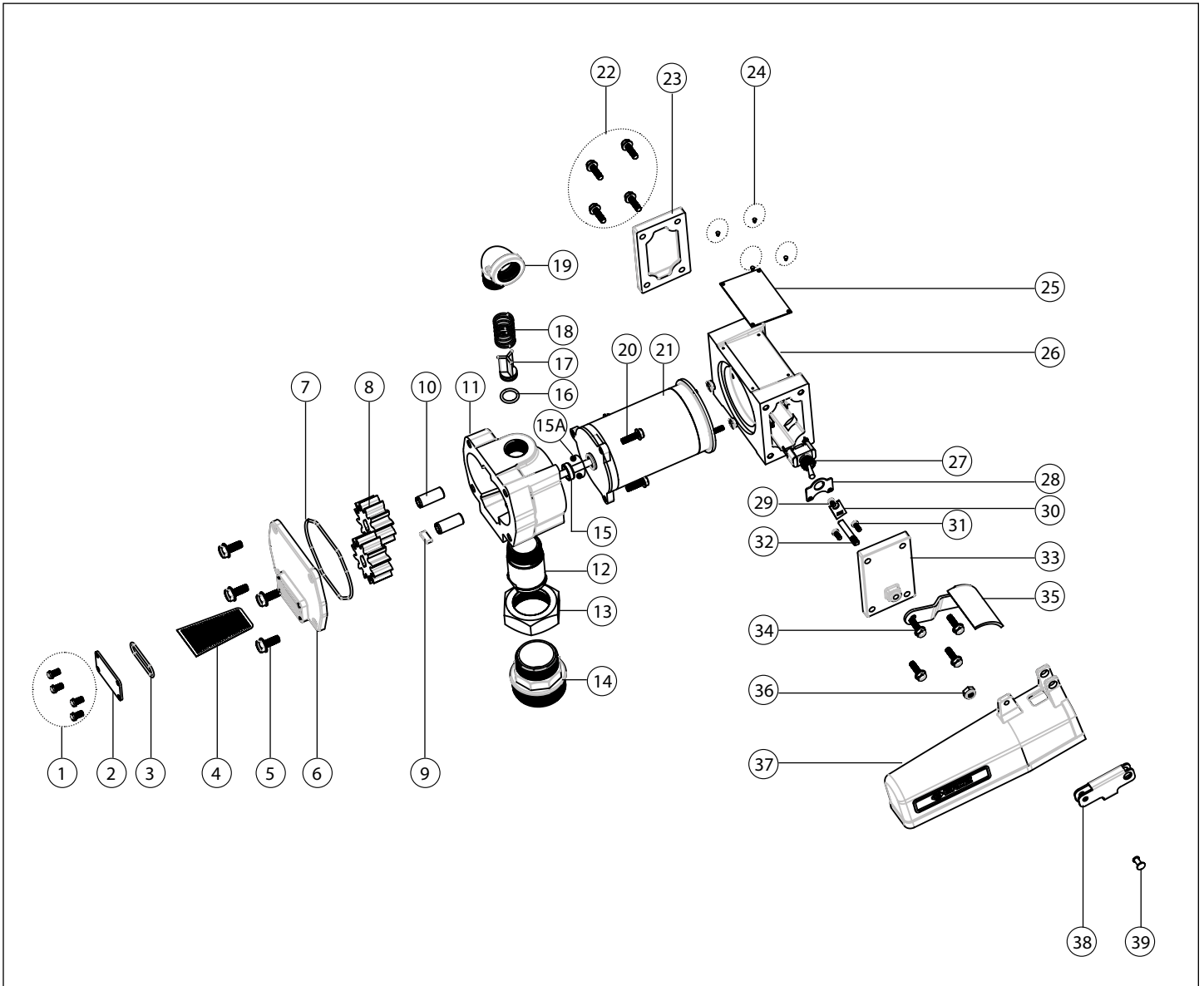
MAINTENANCE

- Clean Inlet Strainer after every 50 hours of operation
- Inlet strainer is easily accessible without having to disassemble the pump. Strainer is installed just above the pump inlet & can be accessed by removing the 4 bolts on the side of the pump holding the Strainer cover
- Remove & clean strainer
- If strainer is excessively dirty, clean tank to protect pump and the equipment being fuelled
- After cleaning strainer, replace strainer & cover. Make sure cover seal is in place

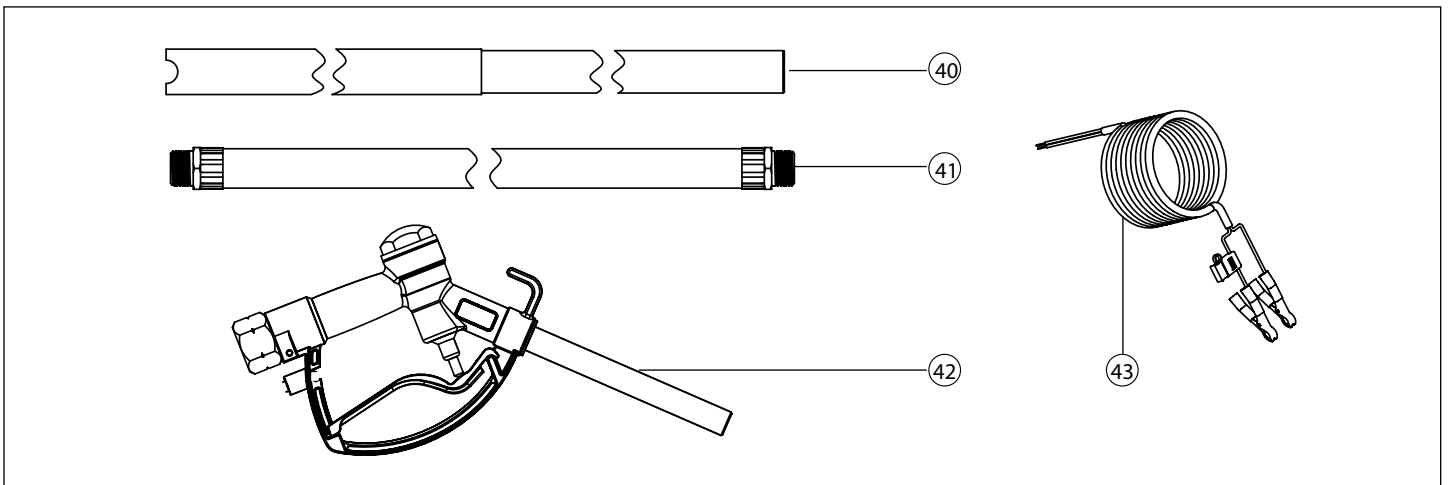


PARTS DRAWING FOR ATD-50012 (FPM-12)

PUMP ASSEMBLY



HOSE, SUCTION TUBE, POWER CABLE & FUEL CONTROL NOZZLE ASSEMBLY



PARTS LIST FOR ATD-50012 (FPM-12)

ITEM#	ORDERING PART#	MFG PART#	DESCRIPTION	QTY
01	PRT50012-01	TFB/M4/10/FPM/12	THREAD FORMING BOLT M4	4
02	PRT50012-02	CVR/STNR/FPM/12	COVER (STRAINER)	1
03	PRT50012-03-16	FPM/KIT/SK	SEAL KIT (INCLUDED 3, 7, 15 & 16)	1
04	ATD-50005	SVE/FPM/12	STRAINER	1
05	PRT50012-05	TFB/M8/FPM/12	THREAD FORMING BOLT M8	4
06	PRT50012-06	CVR/HSG/FPM/12	HOUSING COVER	1
07	PRT50012-03-16	FPM/KIT/SK	SEAL KIT (INCLUDES 3, 7, 15 & 16)	1
08	PRT50012-08-09	FPM/KIT/GK	GEAR KIT (INCLUDES 8 & 9)	2
09	PRT50012-08-09	FPM/KIT/GK	GEAR KIT (INCLUDES 8 & 9)	1
10	PRT50012-10	SFT/GEAR/FPM/12	SHAFT (GEAR)	2
11	PRT50012-11	HSG/FPM/12	HOUSING (MACHINED)	1
12	PRT50012-12	FTNG/BNG/FPM/12	FITTING (BUNG)	1
13	PRT50012-13	NUT/BNG/FPM/12	SWIVEL NUT	1
14	PRT50012-14	ADP/BNG/FPM/12	BUNG ADAPTOR	1
15	PRT50012-03-16	FPM/KIT/SK	SEAL KIT (INCLUDED 3, 7, 15 & 16)	1
15A	PRT50012-15	CCL/FPM	CIRCLIP	1
16	PRT50012-03-16	FPM/KIT/SK	SEAL KIT (INCLUDED 3, 7, 15 & 16)	1
17	PRT50012-17	VLV/FPM/12	BYPASS VALVE	1
18	PRT50012-18	SPR/VLV/FPM/12	SPRING (BYPASS VALVE)	1
19	PRT50012-19	EW/3-4/N/FPM/12	ELBOW	1
20	PRT50012-20	ASCR/M6/FPM/12	THREAD FORMING BOLT M6	9
21	PRT50012-21	MOT/FPM/12	MOTOR, 12V DC	1
22	PRT50012-22	TFB/M8/FPM/12	THREAD FORMING BOLT M4	1
23	N/A	N/A	ELECTRICAL COVER	1
24	N/A	N/A	DRIVE SCREW U TYPE	4
25	N/A	N/A	LABEL	1
26	N/A	N/A	ELECTRICAL HOUSING (M/C)	1
27	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
28	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
29	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
30	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
31	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
32	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
33	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
34	PRT50012-34	TFB/M6/25/FPM/12	THREAD FORMING BOLT M6	4
35	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
36	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
37	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
38	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
39	PRT50012-27-39	FPM/KIT/SA/DC	SWITCH ASSEMBLY KIT FOR DC PUMPS (INCLUDES 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38 & 39)	1
40	PRT50012-40	FPM/2R/N	SUCTION TUBE	1
41	PRT50012-41	SA/HOS/FPM/12	HOSE ASSEMBLY	1
42	ATD-50007	SA/FCN/S/3-4/FPM/N	MANUAL FUEL CONTROL NOZZLE	1
43	PRT50012-43	FPM/KIT/PC	POWER CABLE ASSY KIT	1

Optional Accessories Available (Not Shown On Parts List):

ATD-50002 - Fuel Tank Filter and Replacement Elements

ATD-50003 - 10 micron filter element for above

ATD-50004 - 10 micron water block filter element for above

ATD-50008 - Automatic Fuel Control Nozzle

ATD-50012 (FPM-12) PUMP SPECIFICATION

	ATD-50012 (FPM-12)
Description	Heavy Duty 12V DC
Flow Rate*	Up to 15 GPM (57 LPM)
Explosion Proof Motor	1/7 HP 12V DC
Amp draw from Battery	12 Amp
Internal Bypass Valve	Yes
Suction Pipe	2 pc threaded
Hose	3/4" x 12' Anti Static Hose
Tank Adaptor	2" Threaded
Inlet	1" NPT
Outlet	3/4" NPT
Dispensing Nozzle	3/4" Manual with Swivel
Battery Cable (2 wire)	15'

* measured in lab conditions at pump outlet using Diesel with vehicle engine switched on

WETTED COMPONENTS

Aluminium, Steel, Cast Iron, Nylon, NBR, Zinc, Viton, Polypropylene

RECOMMENDED USE

Gasoline, Diesel, E15 Fuel, Kerosene, Bio Diesel (B20)

ATD-50012 (FPM-12) TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Motor runs but pump will not prime	Motor rotation wrong.	Check wiring instructions for possible problems
	Missing relief valve o-ring seal (16)	Remove gear cover (6), inspect seal, replace if missing or damaged
	Sheared drive key (9)	Remove cover (6) and inspect key, replace if worn or sheared
	Dirt under by-pass valve (17) or seal (16)	Remove cover (6) and inspect, clean or replace if damaged
	Strainer seal (3) leaking	Inspect and replace if damaged
	Suction height too high to prime	See Priming Pump, page 5
	Worn or damaged gears (8)	Remove cover (6) and inspect gears. Replace if worn or damaged
	Fuel level low	Refill tank
	Cover seal (7) damaged	Replace if worn or damaged
	Inlet strainer (4) clogged	Remove and clean or replace
	Air leak in suction tube (40)	Inspect all joints in suction tube. Make sure all joints in suction tube are sealed and that there are no cracks from over-tightening
	Air lock in system	This may occur if filter or meter or automatic shut-off nozzle is used. If this occurs, fill pump and meter with fuel through top of pump
	Motor does not run at proper speed	Check electric connections. Check supply voltage for proper voltage level
	Curb Pump Auto Nozzle used	Change to Auto Nozzle for use with Electric Fuel Pumps
Unit pumps but output flow is low	Clogged inlet strainer (4)	Clean or replace
	Air leak in suction tube (40)	Check to make sure all joints in suction tube are sealed and that there are no cracks
	Suction tube (40) too close to tank bottom	Suction tube must have a 2 in. (50 mm) minimum clearance
	Tank empty	Refill tank
	Tank not vented	Tank must be vented to atmosphere
	Worn or damaged gears (8)	Remove cover (6) and inspect gears. Replace if worn or damaged
	Damaged motor (21)	Replace motor
	Clogged suction tube (40), hose (41) or nozzle (42)	Inspect and clean
Motor stalls when nozzle is closed	Curb Pump Auto Nozzle used	Change to Auto Nozzle for use with Electric Fuel Pumps
	Bypass relief valve (17) stuck	Inspect relief valve, making sure poppet is free. Replace if damaged
	Low supply voltage	Check supply voltage
	Gears (8) damaged and binding	Inspect gears. Gears should turn freely. Replace if damaged
Fuel leaking in motor mount	Faulty motor (21)	Replace motor
	Faulty or damaged motor shaft seal (15)	Replace shaft seal
	Operating pump extended time with nozzle closed	Do not exceed 5 minutes of operation with nozzle closed
Motor overheating	Motor shaft worn	Replace motor if shaft has worn in seal area
	Gears (8) binding	Check to make sure gears turn freely on shaft
	Operating pump extended time with nozzle closed	Do not exceed 5 minutes of operation with nozzle closed
	Clogged inlet strainer (4)	Clean or replace, see Maintenance, page 5
	Clogged suction tube (40), hose (41) or nozzle (42)	Inspect and clean if required
Switch will not turn pump on	Operating pump more than 30 minutes continuous duty	Limit operation to 30 minutes per hour
	Blown fuse	Replace fuse. 30 amp automotive fuse
	Electrical problem	Check that supply voltage is proper and getting to pump
	Defective switch (27)	Check and replace if defective
	Mechanical problem	Check switch actuator cam. Cam should be actuating the switch
Damaged or defective motor (21)	Check motor, replace if damaged or defective	