

# TURBO<sup>®</sup>

## Model T03321

### CONVERTIBLE JET PUMP *Professional Series*

### 2 YEAR WARRANTY

## 1/2HP 900 GPH

Suction: 1 1/4"  
Discharge: 1" NPT  
Maximum pressure: 85 PSI



Suction lift  
Head of  
25' (7.5m)  
in shallow  
well mode

**US GPH LPH**

5'	900	3400
10'	810	3060
15'	675	2550
20'	480	1810
25'	330	1245

Friction loss not included



Suction lift  
Head of  
80' (24m)  
in deep well  
mode

**US GPH LPH**

30'	710	2680
40'	635	2400
50'	546	2060
60'	437	1650
70'	330	1250
80'	220	830

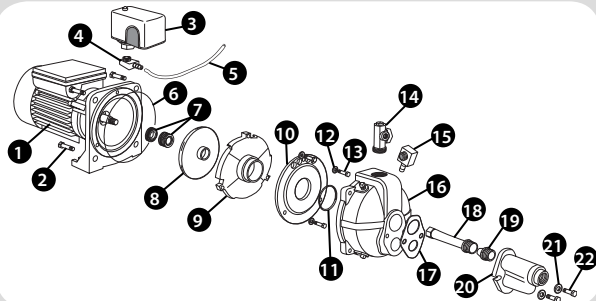
Friction loss not included

- Totally enclosed fan cooled motor, bearing to bearing
- Designed for intermediate or continuous operation
- Easy to prime due to its design and its large pump body
- Full time running capacitor, to eliminate starting wear
- External ejector
- Stainless steel shaft and mechanical seal
- Long life and high performance Noryl impeller

115/230V 60Hz  
115V = 8.6A (15A at start)  
230V = 4.3A (7.5A at start)

## REPAIR PARTS

REF.	PART	DESCRIPTION
1	510054	Motor
2	510055	Motor screws (4)
3	7509575	Pressure switch
4	510056	1/4" NPT 1/4" barb elbow
5	750748	Hose
6	510053	Seal plate "O" ring
7	510052	Mechanical seal
8	510048	Impeller
9	510047	Diffuser
10	510065	Diffuser plate
11	510051	Diffuser plate "O" ring
12	510050	Diffuser plate washers (3)
13	510049	Diffuser plate screws (3)
14	510072	Flow regulator
15	510056	1/4" NPT 1/4" barb elbow
16	510058	Pump body
17	510061	Ejector gasket
18.1	510066.1	Short venturi
18.2	510066.2	Long venturi (25'-60')
18.3	510066.3	Long venturi (60'-80')
19	510070	Nozzle
20	510062	Ejector body
21	510063	Washers (2)
22	510064	Ejector cap screws (2)
23	750968	1/8" pressure gauge (not shown)



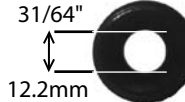
## VENTURIS

Your ejector is factory pre-assembled with the venturi 510066.2, for an optimum performance when the pumping level is between 25' to 60' (7.5 meters to 18 meters) depth, in reference to the pump position. So, this is a deep well application mode. The ejector is positioned into the well and is connected to the pump using 2 pipes. If the pumping level is deeper than 60' (18 meters) in reference to the pump position, it is mandatory to unscrew the pre-assembled venturi and to replace it by the venturi 510066.3, also as a deep well mode application with the ejector positioned into the well. In the case of a pumping level lower than 25' (7.5 meters), unscrew the pre-assembled venturi and replace it by the venturi 510066.1. Then screw the ejector to the pump body. This becomes a shallow well mode application where only one pipe is required to pump water.

For shallow well application mode



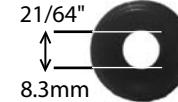
**510066.1**



Factory pre-assembled, for deep well application mode, 25' to 60'



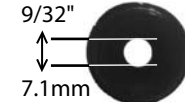
**510066.2**



For deep well application mode, 60' to 80'



**510066.3**

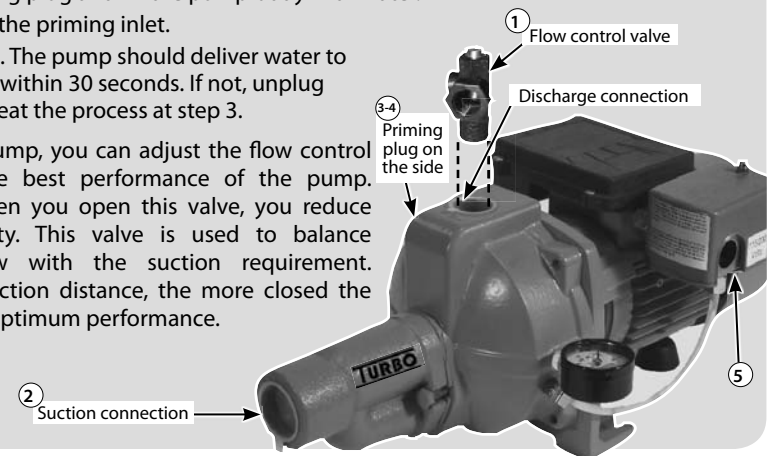


## VALVE CONTROL

Use the included flow control valve to connect your pump to your home plumbing distribution pipe system. Install this valve to the pump discharge and close the valve completely by turning the top screw clockwise. Then, turn the screw counter-clockwise for one turn only and proceed to the following priming process of the pump. Follow all these inside step by step instructions to install your pump. Use teflon tape on all threads.

- 1- Install the pump discharge fittings as illustrated.
- 2- Fill the suction line with water and connect it to the suction inlet.
- 3- Remove the priming plug and fill the pump body with water.
- 4- Screw the plug to the priming inlet.
- 5- Turn the power on. The pump should deliver water to the plumbing line within 30 seconds. If not, unplug the pump and repeat the process at step 3.

After priming the pump, you can adjust the flow control valve to obtain the best performance of the pump. Remember that when you open this valve, you reduce the suction capacity. This valve is used to balance the discharge flow with the suction requirement. The deeper your suction distance, the more closed the valve should be for optimum performance.



# TURBO

**TO THE PROFESSIONAL OR INSTALLER:**  
Instructions must remain with installation.

## **GENERAL SHALLOW WELL AND/ OR CONVERTIBLE JET PUMP INSTALLATION INSTRUCTIONS INCLUDING COMPLETE SYSTEMS PRE-ASSEMBLED ON TANK**

Please read these instructions carefully. Note before you proceed with the installation of this product that the manufacturer's guideline has to be respected. Failure to comply to instructions and designed operation of this product, may void the warranty.

Your product has been carefully packaged at the factory to prevent damage during shipping. However, occasional damage may occur due to rough handling. Carefully inspect your product for damages that could cause failures. Report any damage to your carrier or your point of purchase.

### **MONTHLY MANDATORY CHECK-UP:**

- 1- Inspect the pump for any obvious condition that necessitates cleaning, correction, adjustment or repair.
- 2- Clear the surrounding of any paper, leaves or other debris.
- 3- Assure that the pump is secure for proper operation.
- 4- Assure that there is adequate clearance from any combustible materials or structure. Stored materials must be kept away from the pump. Shelves or cabinet structures must not be in close proximity over the pump.
- 5- Assure that the motor is securely plugged into a proper 'GFCI' electrical outlet.
- 6- Test the 'GFCI' outlet by pressing its test switch. This should prove that the outlet is energized and will trip off to protect against a ground fault. Be sure to reset the 'GFCI' by pressing its reset switch.
- 7- Observe that the plumbing can carry the water safely into the residence.

### **SAFETY INSTRUCTIONS:**

Before installation and operation, follow these procedures:

- A- Check with your local electrical and plumbing codes to ensure you comply with the regulations. These codes have been designed with your safety in mind. Be sure you comply with them.
- B- A separate circuit must be lead from the home electrical distribution panel properly protected with a fuse or a circuit breaker. We also required that a ground fault circuit be used as well as a 'GFCI' receptacle. Consult a licensed electrician for all wiring.
- C- The ground terminal on the three prong plugs should never be removed. They are supplied and designed for your protection.
- D- Never make adjustments to any electrical appliance or product with the power connected. Do not only unscrew the fuse or trip the breaker, remove the power plug from the receptacle.

### **IMPORTANT ELECTRICAL CONNECTION:**

For pumping systems using more than one pump, each pump needs to be connected to a separate dedicated circuit protected by a fuse or breaker. This way, the power supply of one pump will not stop operating if the fuse of one of the pumps burns or if the breaker of one of the pumps trips.

### **INSTALLATION STEPS:**

We recommend that you install your pump in a clean and dry location where there is adequate room for servicing at a later date. Protection from freezing temperatures and good ventilation should be considered as well, to provide the pump an environment for long life. Locating the pump as close as possible to the water source will reduce friction losses encountered in the suction pipe. Friction losses in the suction pipe must be taken into consideration when the horizontal offset is greater than 50 feet. The suction pipes should be increased from 1" to 1 1/4". This will reduce friction losses and allow the pump to give maximum performance. A new well should be checked to determine that it is free from sand. Sand will damage

the seal and the impeller. Have your well driller clean the well before your installation. **Never run the pump dry.** Damage to the seal may occur. Fill pump body and suction pipe with water before turning on the power. **The run of horizontal pipe from the top of your well into the house, where your pump will be located, must be installed in a trench, below the frost level of your area.**

### FOR SHALLOW WELL OR CONVERTIBLE PUMP IN SHALLOW WELL APPLICATION:

#### STEP 1

Cut the desired length of poly pipe to run from the top of the well to the pumping level. Smooth the pipe cuttings with your round file. (Check that no cut-out parts are left inside of pipe. This may block pump injector or impeller). Tape male adaptor threads with teflon tape and thread adaptor into the foot valve. Slide 2 stainless steel clamps over one end of pipe and use torch to soften pipe. Insert the male adaptor and foot valve into this pipe end. Tighten clamps with screwdriver when cool. For security against leaks, we suggest to install 2 stainless steel clamps on each adaptor.

#### STEP 2

Insert the well seal elbow thru the opening of the seal. Slide 2 stainless steel clamps over the free end of the previously cut pipe and soften pipe with your torch. Attach pipe to the well seal elbow (end protruding at bottom of well seal). Tighten clamps with screwdriver when cool.

#### STEP 3

Install the well seal and piping assembly into your well casing. Tight down the well seal bolts using your adjustable wrench. To facilitate servicing at a later date, you may use a pitless adaptor and a sealed well cap instead of an elbow and a well seal as describe in steps 2 and 3.

#### STEP 4

Install your pump in the house, on a sound foundation, as close as possible to the basement wall. Locate the suction inlet in the front of the injector. Thread an adaptor into inlet using teflon tape. Do not over tighten.

#### STEP 5

Cut the desired length of pipe from pump location to the well seal and connect both ends using the previous way, with stainless steel

clamps and torch. Do not fill in your trench to the house until you have checked for any leaks in your connections or trouble in your water system.

#### STEP 6

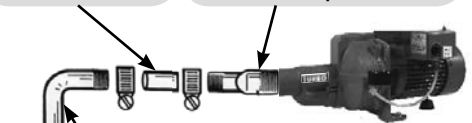
Sand or well points are limited to areas where water bearing sand or gravel lies below the surface, and where there are no boulders or rocks to interfere with the driving into the ground of the point. The amount of water any "one" well point will supply is usually rather limited. Sometimes, it is necessary to use more than one point to increase the supply of water, entering to the pump's suction. **The important installation step in using well points is that a check valve must be used in the suction pipe leading to the suction inlet, as close to the pump as possible, to keep suction line and pump well primed.**

#### STEP 5

Cut poly pipe and connect both ends

#### STEP 4

Install your pump and thread an adaptor into inlet



*\* Picture shown is an example only, it may vary from your pump model.*

#### STEP 2

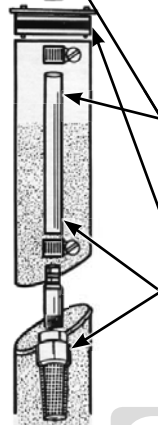
Insert well seal elbow through the seal and attach to pipe

#### STEP 3

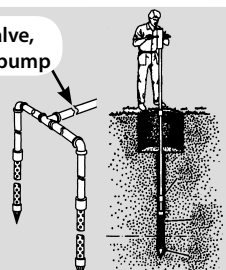
Install well seal and piping into well casing

#### STEP 1

Cut poly pipe and install the check valve



Check valve, close to pump



#### STEP 6

You may install one or more sand points to increase the supply of water

## FOR CONVERTIBLE PUMP IN DEEP WELL APPLICATION:

### STEP 1

Locate your injector body in your package. Using teflon tape, screw the 1 1/4" venturi adaptor over the injector venturi (black tube), into the 1 1/4" opening of injector body. Install the 1" male thread adaptor in the 1" opening in injector body. Securely tighten both adaptors with pipe wrench.

### STEP 2

With teflon tape on threads, install a 1" nipple into the 1" foot valve, then screw this assembly into the 1" bottom opening of the injector.

### STEP 3

Cut the desired length of 1" and 1 1/4" poly pipes to run from the top of the well to the pumping level. Smooth the pipe cuttings with your round file. (Check that no cut-out parts are left inside of pipe. This may block pump injector or impeller). Slide 2 stainless steel clamps over one end of each pipe and use torch to soften pipe. Fix the 1" and 1 1/4" pipes respectively on the 1" adaptor and 1 1/4" venturi adaptor. Tighten clamps with screwdriver when cool. For security against leaks, we suggest to install 2 stainless steel clamps on each adaptor.

### STEP 4

Insert both well seal elbows thru their opening of the seal. Slide 2 stainless steel clamps over the free ends of the previously cut pipes and soften pipes with your torch. Attach pipes to the well seal elbows (ends protruding at bottom of well seal). Tighten clamps with screwdriver when cool. To facilitate servicing at a later date, you may use a pitless adaptor and a sealed well cap instead of an elbow and a well seal as describe in steps 2 and 3.

### STEP 5

Install the well seal and the injector piping assembly into your well casing. Tight down the well seal bolts using your adjustable wrench.

### STEP 6

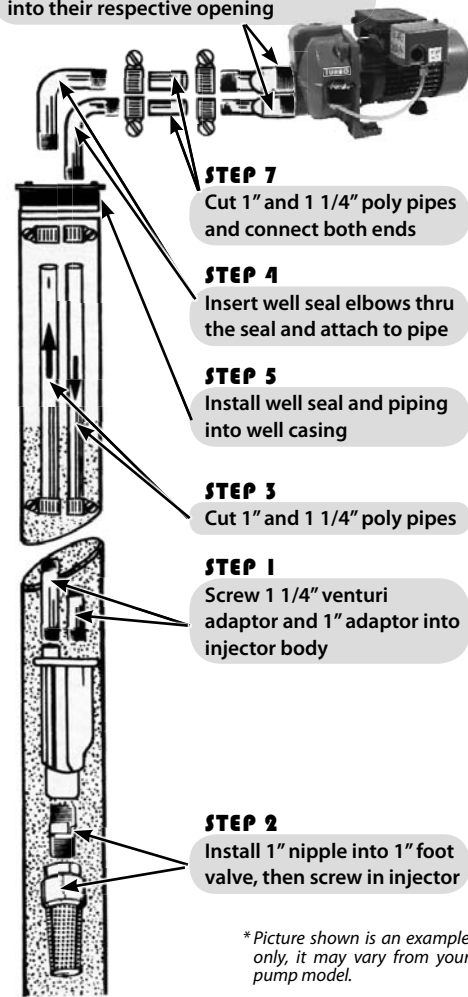
Install your pump in the house, on a sound foundation, as close as possible to the basement wall. Locate the openings in the front of the pump body. Thread respectively 1" and 1 1/4" adaptors into corresponding openings using teflon tape. Do not over tighten.

### STEP 7

Cut the desired length of pipes from pump location to the well seal and connect both ends using the previous way, with stainless steel clamps and torch. **Do not fill in your trench to the house until you have checked for any leaks in your connections or trouble in your water system.**

### STEP 6

Install your pump and thread adaptors into their respective opening



### STEP 7

Cut 1" and 1 1/4" poly pipes and connect both ends

### STEP 4

Insert well seal elbows thru the seal and attach to pipe

### STEP 5

Install well seal and piping into well casing

### STEP 3

Cut 1" and 1 1/4" poly pipes

### STEP 1

Screw 1 1/4" venturi adaptor and 1" adaptor into injector body

### STEP 2

Install 1" nipple into 1" foot valve, then screw in injector

*\* Picture shown is an example only, it may vary from your pump model.*

## TANKS INSTALLATION:

### FOR CAPTIVE AIR TANKS

Packaged systems have the pump mounted directly to the tank. The pump to tank plumbing fittings are pre-assembled in factory. You only have to connect the discharge line of your system to your home's plumbing distribution line. When using a separate tank from your pump, we recommend to install a captive air tank as shown in our typical installation diagram, that is air injected into the tank at the factory. This air, which is in addition to atmospheric pressure, increase the ability of the tank to deliver more water between on/off cycles, thus increasing the efficiency of your water system. Connect the pump discharge to the tank T, using adaptors and braided hose, then, connect the other side of tank T to your home's plumbing distribution line. **Make sure that the precharged air pressure (before connecting the tank) is 2 PSI less than the starting pressure setted on the pressure switch of your pump.**

If you adjust the air pressure after the installation, follow these steps:

- 1- Check the starting pressure of the pump on the pressure gauge.
- 2- Disconnect the power to the pump.
- 3- Open nearest fawcet to the tank and relieve all pressure in tank, then close the fawcet.
- 4- Adjust the air pressure of the tank (by pumping or removing air at the snifter valve) 2 PSI below pressure switch "ON" setting.
- 5- Turn power back on to pump.

Your tank is now well precharged. Run the pump through a few cycles to verify that it works properly. Other types of tanks may be used, as galvanized standard tanks, epoxy or glass lined tanks. These products do not achieve the benefits of the captive air tanks.

### FOR EPOXY OR GLASS LINED TANKS

Epoxy or glass lined tanks with float have to be precharged by the installer.

Assuming tank is plumbed to pump and all connections are checked for leaks, follow these steps:

- 1- Run pump thru one complete cycle, until pump shuts off.

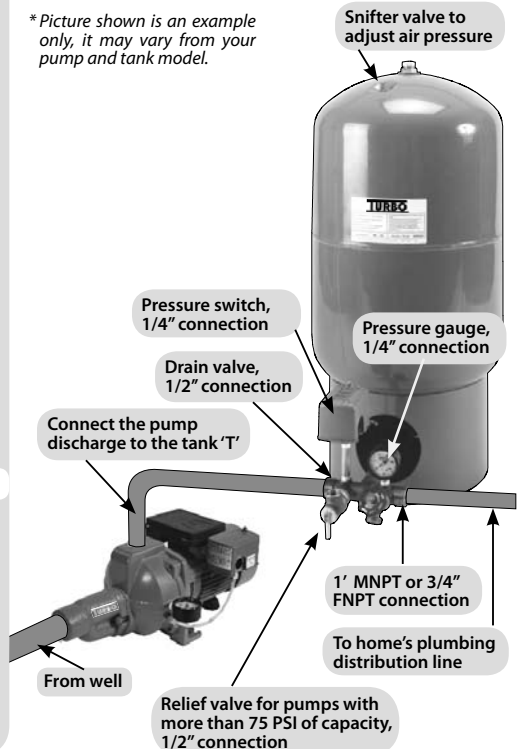
- 2- Disconnect the power to the pump.
- 3- Open nearest fawcet to the tank and relieve all pressure in tank, then close the fawcet.
- 4- Close service line gate valve.
- 5- With a car tire pump, inject air into the snifter valve located in tank. Watch pump pressure gauge and stop pumping air when pressure reaches 2 PSI below pressure switch "ON" setting.
- 6- Return power back on to pump.
- 7- Run pump through one complete cycle.
- 8- Open service line gate valve.

Your tank is now well precharged. Run the pump through a few cycles to verify that it works properly.

### GALVANIZED TANKS ARE NOT RECOMMENDED WITH A JET PUMP

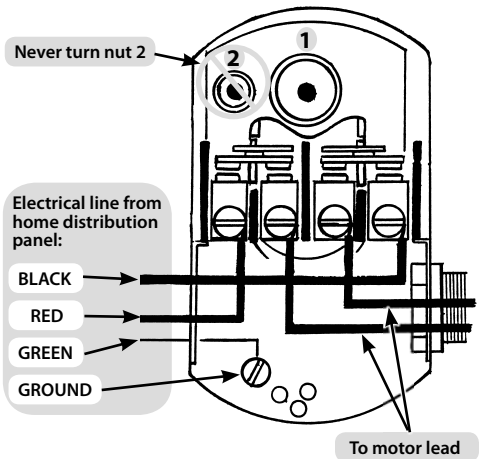
Galvanized standard tanks require an air volume control to be used with jet pump. We do not recommend the installation of this type of tank with your jet pump. This type of galvanized tank is recommended with piston pumps.

*\* Picture shown is an example only, it may vary from your pump and tank model.*



## ELECTRICAL INSTALLATION:

We recommend that a licensed electrician be employed to do the proper wiring to the pressure switch, and to permanently ground the motor in accordance to the electrical codes in your area. Do not use an extension cord to connect your pump to the power source. From your distribution panel to the pressure switch, we recommend a wire gauge not smaller than 14 gauge. This is a dual voltage 115/230 pump. The voltage selection switch is located inside the terminal box. The motor is factory wired on 115V. For 230V selection, please open the terminal cover and set the switch to the proper voltage. (See above drawing on right). Pressure switch setting (start/stop 20/40 or 30/50) has been made at the factory. Adjustments may be done to give other operating pressures. Adjustment or modification of start/stop setting of pressure switch have to be done carefully. Turn adjustment nut half turn at a time. Turn nut 1 clockwise to raise start and stop pressure setting. Never turn nut 2. This will change the 20 PSI range between start and stop pressure and may damage your tank's bladder or modify the efficiency of your water system. Check system operation after each adjustment.



### VOLTAGE SELECTION SWITCH

(NOT APPLICABLE FOR JET PUMPS WITH FLUOMAC)

1- POWER off.

2- Please SELECT the up knob position for 115 V or down knob position for 230 V.



3- CONNECT to appropriate power source.

## NOTICE:

**This unit have benn designed to pump water only. This unit is not designed for applications involving salt water, brine or any other liquids including petroleum products. Use with salt, brine or any other liquids including petroleum products will void the warranty.**

## NOTES:

## TROUBLE SHOOTING GUIDE CHECK LIST

### PROBABLE CAUSE

### ACTION

**Motor does not run**

Switch is off position  
Blown fuse  
Tripped breaker  
Dirty pressure switch  
Defective pressure switch  
Defective motor

Turn switch to on position  
Replace  
Reset  
Clean  
Replace  
Replace

**Motor runs but no water is delivered**

Pump not primed  
Leaky suction line  
Foot valve plugged  
Ejector nozzle clogged  
Water level below foot valve  
Suction lift to great  
Improper voltage

Prime with clean water  
Check pipe and pipe connections  
Clean  
Clean  
Check foot valve level  
Water level lower than lift capacity  
Check voltage

**Pump does not deliver to full capacity**

Water level below foot valve  
Ejector nozzle clogged  
Excessive friction in pipe  
Improper voltage

Check foot valve level  
Clean  
Too small or dirty pipe  
Check voltage

**Pump does not shut off**

Leaky discharge line  
Motor not up to normal speed  
Improper setting of pressure switch  
Ejector nozzle clogged

Check all pipes for leak  
Check power cable and voltage  
Reset or replace  
Clean

**Pump starts and stop too often**

Pressure tank waterlogged  
Leaky foot valve  
Leaky suction line  
Foot valve do not close properly  
Pressure switch out of adjustment  
Leaky discharge line (toilet, etc.)

Drain tank and restart  
Replace  
Check pipe and pipe connections  
Clean or replace  
Adjust on/off setting  
Check all pipes for leak

**Air spurts from faucets**

Leaky suction line  
Gaz in water  
Airlogged tank (gavanized)

Check pipe and pipe connections  
Check and consult factory  
Replace air volume control

### TO THE END CONSUMER:

If you have any problem with the product, before advising the store, where you've purchased the pump, please contact us at 514 337-4415, and ask for our customer service desk. They will be pleased to help you with any questions you might have, concerning your installation.