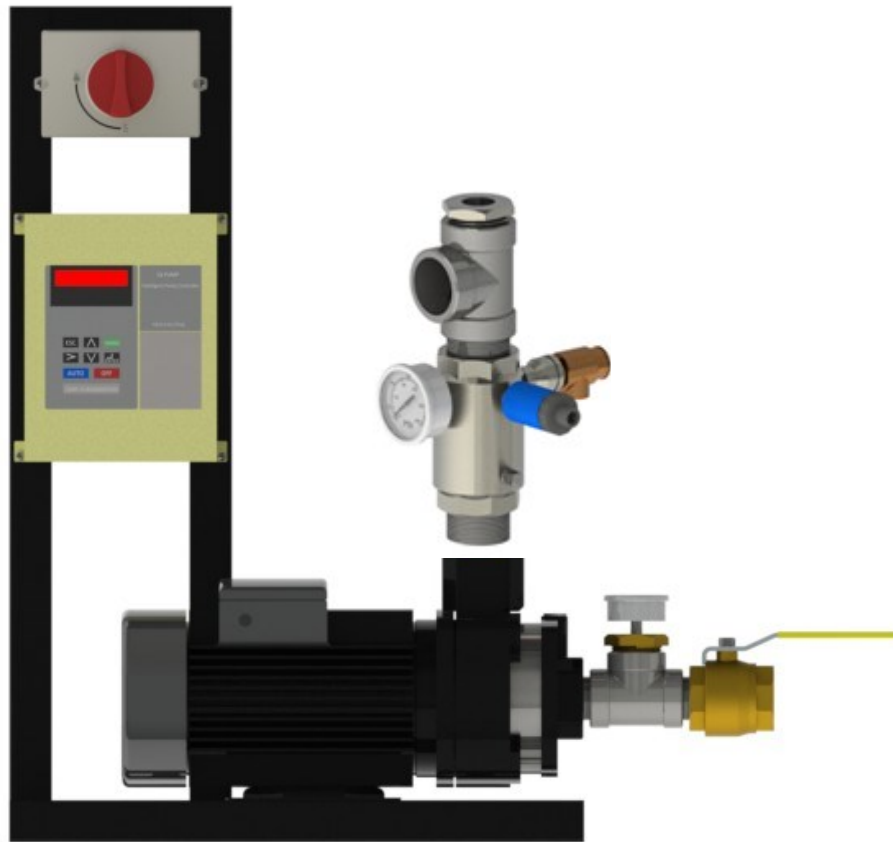




TOWLE WHITNEY LLC

Instruction and Operation Manual



Model: TW1111

NEMA 4

Variable Speed Booster System

1. Safety Instructions



WARNING! Plumbing code requirements for a closed system:

The check valve installed on the booster pump system creates a closed system which restricts backflow of water. If the Pressure Relief Valve starts to leak water, there is probably a thermal expansion issue.



The TW1111 is designed to withstand wash down, water spray, rain, sun, and humidity, etc.

All local building, electrical and plumbing codes must be followed while installing and operating a TW Booster System.

PRE- W RED

Note: Your pump system has been assembled, power tested and water tested against leaks in our factory. Some residual pipe sealant and water may be left in the pump and piping.

You will enjoy great pressure and energy savings from our Booster Pump System !

Thank you for your purchase

2a. Installation Instructions

Follow local building, electrical, and plumbing codes during installation.

System Installation

- ___ Verify all parts are in plumbing parts kit. Follow directions [2b. Getting Started]
- ___ Affix Booster System frame to Support Frame (supplied by others)
- ___ Verify Power and Circuit breaker match VFD (variable frequency drive) Nameplate.
- ___ Make electrical connections to Disconnect Box
- ___ Install Discharge & Suction Assembly [2c]
- ___ Ready for Start up [3. Start up]
- ___ Refer to troubleshooting page for troubleshooting. [4. Troubleshooting]
- ___ Look for Blue and White Serial Number Sticker on frame and record number here for future



2b. Installation Instructions

GETTING STARTED

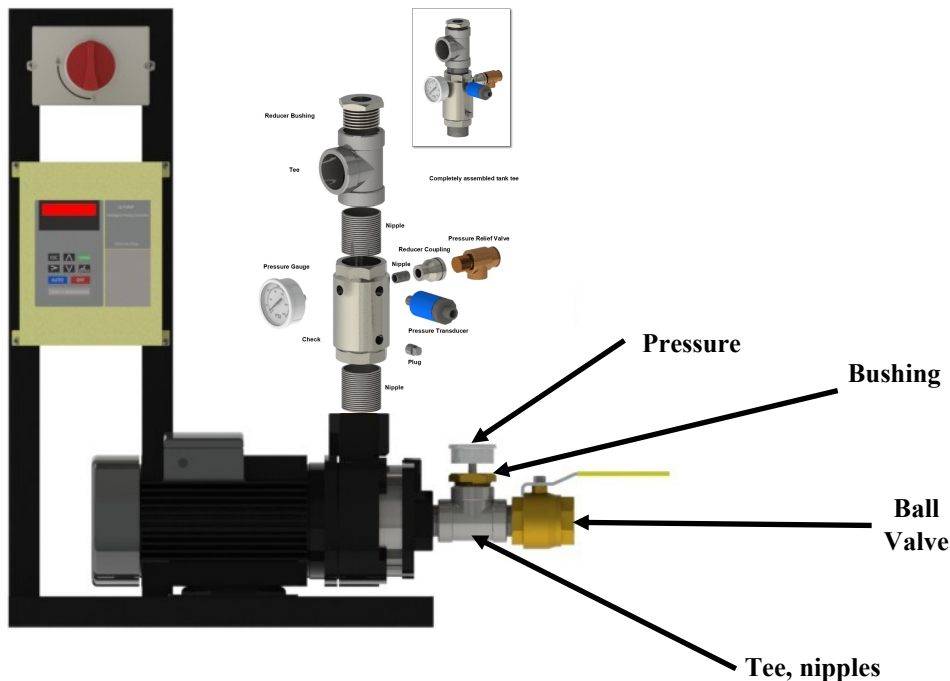
Verify that all parts are included in your kit.

DISCHARGE

- ___ 1 1/2" Riser
- ___ Pressure Gauge
- ___ Transducer
- ___ Relief Valve
- ___ Bushings (2) 1/2" x 1/4"
- ___ 1 1/2" Close Nipple
- ___ Check Valve
- ___ 1 1/2" Copper male adapter
- ___ 1 1/2" Copper female adapter

Suction

- ___ 1 1/2" Tee
- ___ Pressure Gauge
- ___ Bushings (1 1/2" x 1/4")
- ___ (2) 1 1/2" Close Nipple
- ___ 1 1/2" Ball Valve NPT



2c. Installation Instructions

Caution: DO NOT USE TEFLON TAPE TO INSTALL CHECK VALVE

1. Check valve [embossed arrow must be pointing away from pump]
2. Teflon tape may foul the check valve.
3. Only use pipe sealant such as Loctite.

Discharge Tank Tee

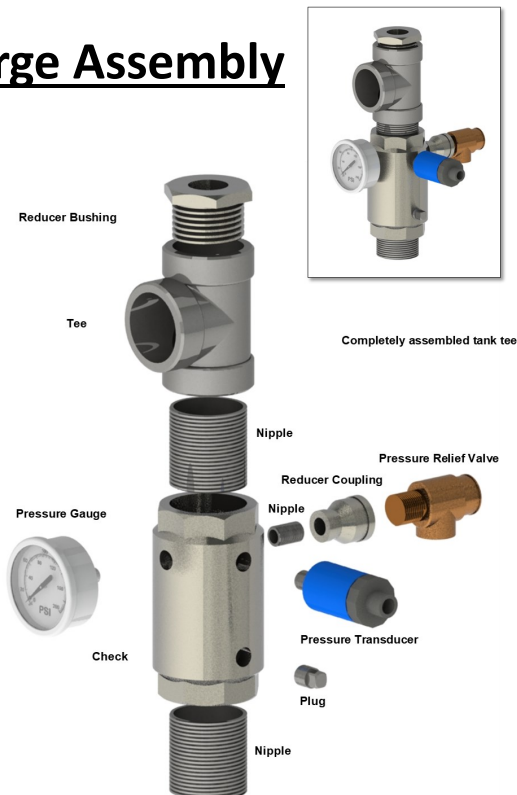
Follow procedure to attach the Tank tee to the pump:

(use pipe sealant or Teflon tape)

1. Attach Check Valve to pump discharge using the nipple provided.
2. Attach riser manifold to check valve using the male adapter provided.
3. Attach bushings, relief valve, transducer, and pressure gauge in locations shown on Figure 1.
4. Attach the wire from VF Drive to the transducer.

Do not aim PRV towards any electrical components / VFD.

Discharge Assembly



Suction Assembly



Yaskawa VF Drive

NOTE: The VF Drive is factory preset. DO NOT change the settings in the VF Drive.

Make sure the necessary power connections are based on the type of power provided (See sticker on disconnect switch): 220-230V /1PH, 220-230V /3PH, or 460-480V/3PH

System Start-up

Do not power up system yet

- Fill pump with water by opening supply line to pump and then open a downstream valve. This will fill the pump with water and let air out of the pipes. Wait a couple of minutes before proceeding
- Turn on circuit breaker
- Turn on disconnect switch
- Once power is provided, pump will start automatically. If it does not, press AUTO
- Close downstream valve

If Pump System does not turn on automatically:

- Verify downstream valve is open.
- Press the AUTO button.
- Pump will start up because there is demand for water.

Pump will automatically stop when there is no water demand.

You are ready to enjoy great water pressure!



4. Troubleshooting

Loss of incoming water supply:

- Systems are programmed to stop and start automatically upon loss/restoration of incoming water supply. However, if the pump system does not start normal operation automatically, turn off disconnect switch, wait until the VF drive display goes blank and turn the power ON by turning on Disconnect switch.

Loss of power supply:

- If pump system does not turn on automatically, press the RESET then AUTO button. If the pump still does not turn on, and there is demand for water, turn off the system using disconnect switch, wait until the VF drive display goes blank. Turn the system back ON using the disconnect switch.

Short cycling:

Issue:

- Pump turns ON / OFF every few minutes / seconds

Solution:

- Check for leaks in the line going from the pump to the equipment.
- As mentioned in the assembly section, it is essential to install a ball valve on the suction and discharge of the pump. Close the ball valve on the discharge side of the pump and check to see if the pump turns OFF. If it does, there may be a leak in the water line or equipment. If the pump continues to run after the discharge shut off valve is OFF, the water may be leaking back through the check valve. Shut ball valve on pump suction side, if pump stops running then check valve may be fouled and has something in it. Debris in check valve must be flushed out by running a lot of water through system or removed and cleaned.

Pump continually runs:

Issue:

- Pump operates constantly without any demand for water. Air may be trapped within the line causing the pump to not reach the pressure set point.

Solution:

- Open downstream valve to purge out air.