



*HI TEMP WAREWASHERS*

# INSTRUCTION, MAINTENANCE & SERVICE MANUAL

**727**  
**737**  
**747**  
**F-16**  
**F-18**  
**F-20**  
**F-22**  
**PIPER**

JET-TECH © 1999



**Welcome to JET TECH "creating  
endless possibilities!"**

*This manual was created specifically for service technicians. We have included information to help troubleshoot problems and facilitate resolving those problems, electrical schematics, exploded views and detailed parts lists. General information pertaining to our hi-temp ware washers will be covered in this section. Specific information on our current models will be covered in separate sections, model by model.*

*While in the field, you may come across earlier generations of JET TECH machines. General operation of these machines is similar if not identical to our current models. However, certain parts may be unique to these machines. This information is readily available from our office. We have endeavoured to make this manual as accurate as possible. If you find a discrepancy or can't find certain information, please contact us. We will be glad to help you. Updates and modifications will be issued as the information becomes available.*

**JET-TECH SYSTEMS**

7014 Cote de Liesse

**Montreal, Quebec H4T 1E7**

Tel.: 888-275-4534 (888-ASK-4-JET); 514-737-9701

Fax: 514-342-3854

e-mail: [service@jet-tech.com](mailto:service@jet-tech.com)

## WARRANTY

### MANUFACTURERS LIMITED WARRANTY

Jet Tech Systems Corporation (Jet Tech) hereby warrants all new warewashers bearing the name "JET TECH" and installed within the continental United States of America or Canada to be free from defects in material or workmanship, under normal and regular usage and operation, for a period of one (1) year following the date of original installation, **(unless specified otherwise)** but in no event can exceed eighteen (18) months from the date of shipment from the factory.

If a defect in material(s) or workmanship is detected; or found to exist within the stated period above, Jet Tech, at its sole discretion, shall either repair or replace any original equipment manufacturers part which has proven to fail within the machine; providing that the equipment has not been altered or tampered with in any manner, has been installed correctly as per the owners manual, and maintained and operated in complete accordance with this manual.

The labor cost to repair or replace any part proven to be defective, as per above clause(s), shall be covered by Jet Tech Systems, within the continental United States of America or Canada; provided that: prior authorization for this labor was approved by Jet-Tech Systems, the service work was performed by an authorized Jet Tech service agency; and that this agency installed an original and genuine Jet Tech part in the machine. Any repair work performed by a non-authorized service depot remains the sole responsibility of the user, and Jet Tech Systems will not be held responsible. **The installation of any generic part will not be valid; and therefore voids this warranty.** All authorized labor coverage shall be limited to regular hourly rates only. Any supplemental hourly rates or charges, such as weekends or emergency premiums remain the responsibility of the user.

Jet Tech Systems Corp. (Jet Tech) hereby states that: warranty travel time shall be limited to, and without exception, a round-trip total of two (2) hours OR mileage up to a maximum of one hundred (100) miles round-trip. Any charges exceeding those stated herein must have prior authorization by the factory.

**Exceptions to above warranty are:** (A) Damages resulting from shipping, handling or abuse. (B) Incorrect installation and/or connections. (C) Adjustments or calibration of any thermostats or timers. (D) Faults due to lack of regular maintenance or cleaning of any internal part(s). (E) Replacement of any wearable items such as: glasswasher curtains, or peristaltic squeeze tubing or gaskets. (F) Excessive lime, mineral, alkali or hard water conditions and (G) Poor results due to: use of an incorrect type of detergent (for non-commercial type applications), and excessive or inadequate water temperature(s) or pressure conditions.

JET TECH SYSTEMS CORPORATION STATES THAT THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, THAT ARE NOT SET FORTH HEREIN, JET TECH SYSTEMS CORPORATION SHALL ASSUME NO OTHER RESPONSIBILITY, EITHER DIRECT OR NON-DIRECT, OR BE LIABLE FOR ANY OTHER OR ADDITIONAL LOSS OR DAMAGE WHETHER BEING DIRECT OR CONSEQUENTIAL, AS A RESULT OF ITS EQUIPMENT.

### **JET TECH SYSTEMS CORP.**

**7014 Cote de Liesse Montreal Quebec  
CANADA, H4T 1E7 Tel: (514) 737-9701  
Toll Free: (888) ASK-4-JET Fax: (514)  
342-3854 E-Mail:service @jet-tech.com  
Web: www.jet-tech.com**



#### **Warranty:**

*One year parts & labor (Continental USA and Canada).*

**Exceptions:** *Model "Piper" - 90 days labor  
& One year parts.*

## SERVICE CALL REGULATIONS

JET TECH ware washers are warranted as specified in the MANUFACTURERS LIMITED WARRANTY.

### We will pay for:

1. Labor to replace a defective part, as per the attached Allocated Times Schedule.
2. Travel time, as specified in the MANUFACTURERS LIMITED WARRANTY. (See page 4)
3. JET TECH original replacement parts supplied from service company inventory

### We will not pay for:

- More than one man on a service call.
- Waiting time. Call for an appointment, if required.
- Unauthorized labor charges.
- Travel time exceeding the MANUFACTURERS LIMITED WARRANTY.(See page 4)
- More than one service call for the same problem.
- Adjustment or calibrations, as specified in the MANUFACTURERS LIMITED WARRANTY.(See page 4)
- Replacement of small items (pilot light, screens, jets).
- Cleaning or regular maintenance.
- Overtime or weekends charges (time and a half, or more)
- Problems due to improper installation.
- Problems due to improper water supply temperature or inadequate/excessive water pressure.
- Problems due to inadequate/excessive electric supply.
- Disconnecting of hard plumbing or removal of counter tops, etc.

WE ARE HERE TO HELP YOU WITH DIAGNOSTIC OR SERVICE PROBLEMS.

Call us toll free at 1-888-275-4538 for assistance.

**Our standard procedure is to invoice all parts shipped for WARRANTY REPAIRS. The invoice will be credited upon return of defective parts used for WARRANTY REPAIRS.**

YOUR INVOICE MUST INCLUDE THE FOLLOWING INFORMATION:

1. Warranty Repair Authorization Number.
2. Model and serial numbers.
3. Problem reported.
4. Detailed description all charges including dates, hours worked and work done.
5. Reason for part failure.
6. Indicate the general state of the equipment, cleanliness and if abuse is apparent.

We expect that your work is warranted by your company for **at least 90 days.**

## ALLOCATED TIMES

These are the allocated times for servicing Jet Tech products under warranty. If an item is missing, please call our office for the information.

PARTS	#	CODE	TIME (Hours)
Diagnostic of problem			.5
Vacuum cylinder AM except 747, F22	10528		1.25
Vacuum cylinder 747, F22	10528		.50
Vacuum cylinder hose AM except 747, F22	10529, 15519		1
Vacuum cylinder hose 747, F22	11580		.50
Wash arm manifold-upper	12007		1
Wash arm manifold-lower	12008		1.75
Wash arm axle	12017		.5
Rinse Elbow -upper	12021		.75
Rinse Elbow -lower	12021		1
Door catch	12049		.5
Door catch mechanism, parts	12049,12050, 12052,12054, 10470,10489, 60258,10435, 60012,10415		.5
Stainless panels	12062,12003, 12063,12002, 15507, 15504, 15505,15506		.75
Booster tank	12064,15515, 10129,15548		2
Solenoid Valve AM except 747, F20, F22	20568,20569	ELB	1.5
Solenoid valve 747, F20, F22	20569	ELB	.75
Electronic Noise Filter	20018	F	.5
Door Switch	20035,20536, 20548	MP	.75
Pilot Light	20042	LL	.5
Power Switch	20044,20500	TL	.5
Relay	20067	BR	.75
Booster Element	20080,20069, 20084	RB	.75
Tank Element	20080, 20069, 20084	RV	.75
Timer	20088, 20075, 20504	MT	.75
Relay Tank Element	20105	RV	.75
Relay Booster Element	20105	BCB	.75
Relay Wash Pump	20105	CCMPL	.75
Thermostat-Tank Element	20110	TV	.5
Thermostat-Booster Element	20119	TB	.5
Peristaltic Detergent Pump	20023, 20545	MPD	.75
Digital Temperature Display	20108,20514	TC	.5
Air Pressure Switch	20053, 20058, 20059,20192, 20525	PS	.5
Rinse Aid Pump	20199		.75
Cycle Start button	20519	TC	.5
Drain Pump	40229, 20429	MPS	.75
Wash pump on 727 & 737	40028, 40226	MPL	1.5

## ALLOCATED TIMES

<b>PARTS</b>	<b>#</b>	<b>CODE</b>	<b>TIME (Hours)</b>
Wash pump on PIPER, F16, F18	40248, 40242, 20240	MPL	1.5
Wash pump on 747, F20, F22	40230,40236, 40255,40258	MPL	.75
Tube for chemical injector	60564		.75
Rinse feed tubing	60565		1.25
Door hinges			.5

## WARRANTY CLAIM PROCEDURES

When a service call is placed by *JET TECH*, a dealer, distributor, end user or other, it does not necessarily mean that the service call will be covered by warranty. If we request a service call, we will fax all the details available to us at the time including customer information as well as the reported problem. We will also advise you if the equipment is still within the warranty period.

If the equipment is within the warranty period, we will also FAX a WARRANTY AUTHORIZATION NUMBER, often listing the parts that may be required to complete the repair as well as the allocated times to diagnose the problem and install the recommended parts. If the problem is other than what was reported, please contact our service department.

If a customer places a service call outside of our regular business hours Monday-Friday (Eastern Time) we ask that you use your best discretion and notify us on the next business day.

**All claims must be received at our office within 30 days of completing the work.** We reserve the right to withhold payment when:

- The defective part is not returned for inspection.
- The defective part failed because of negligence, improper installation, unauthorized servicing or improper use of the equipment.
- Missing documents/Information.

**MODIFICATIONS AND UPDATES**

<b>PART#</b>	<b>MODELS</b>	<b>SERIAL #s</b>	<b>CHANGE</b>
15507 15506	727	9569886-	NEW TOP PANEL #15683 NEW BACK PANEL #15684
20500 20500 20500 20149	F18/DP 737DP 727DP F16/DP	9901607- 9800871- 9800706- 9800065-	THE WHITE DRAIN PUMP BUTTON MUST BE HELD TO ACTIVATE THE DRAIN PUMP AND WILL NO LONGER LOCK IN THE ON POSITION (Part# Remains the same)



## TECHNICAL CHARACTERISTICS

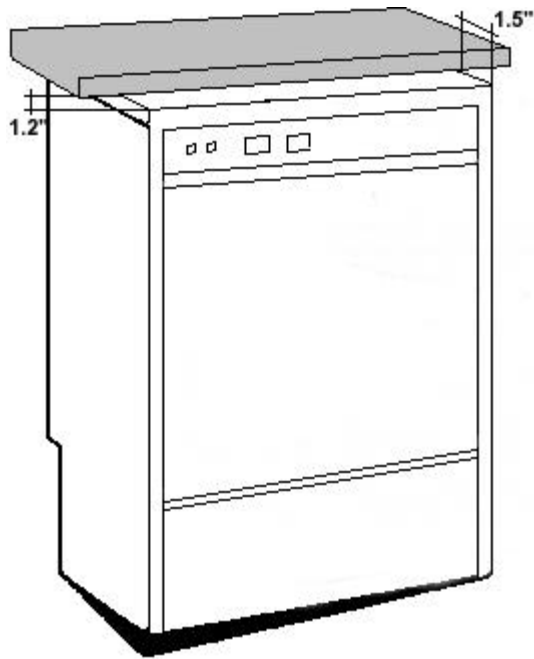
MODEL	GENERAL DIMENSIONS						
	SIZE-ACTUAL			WEIGHT	Tank Cap.	Booster	Cap.
	Height (mm/inch)	Width (mm/inch)	Depth (mm/inch)	Kg Lbs	(Liters) (US gal)	(Liters) (US gal)	
727	820.00 32.25"	500.00 19.75"	500.00 19.75"	52.73 116	8.0 2.11	4.8	1.27
737	850.00 33.50"	600.00 23.75"	600.00 23.75"	72.73 160	12.0 3.17	6.5	1.72
747	1485.00 58.50"	698.00 27.50"	720.00 28.40"	155.45 342	18.0 4.75	10.2	2.7
F-16	749.00 29.50"	508.00 20.00"	508.00 20.00"	47.73 105	11.0 3.0	3.2	0.87
F-18	850.00 33.50"	600.00 23.75"	600.00 23.75"	72.73 160	28.0 7.35	8.0	2.11
F-20	1320 52.00"	625.00 24.50"	610.00 24.00"	86.36 190	26.0 7.25	8.0	2.20
F-22	1524.00 60.00"	710.00 27.95"	721.00 28.40"	155.45 342	18.0 4.75	10.2	2.7
PIPER	518.00 20.40"	503.00 19.80"	470.00 18.50"	29.09 64	8.0 2.11	2.5	0.65

OPERATION PARAMETERS							
MODEL	Flow Pressure	Hot Water Qty / Cycle	Water Temp (Ideal)	Electrical Requirem.	Power Requir.		Cycle
	Kg/cm2 psi	Liters US gal	c F	VOLTS	Phase	AMPS	Seconds
727	2.1 30	2.5 0.66	60 140	208-220	1 Phase	14.4	120
737	2.1 30	3.0 0.79	60 140	208-220	1 Phase	22	120
747	2.1 30	3.8 1.0	60 140	208-220	1 Phase 3 Phase	46 24	70
F-16	2.1 30	1.9 0.5	60 140	208-220	1 Phase	15	180
F-18	2.1 30	3.0 0.79	60 140	208-220	1 Phase	22	180
F-20	2.1 30	3.0 0.79	60 140	208-220	1 Phase	34	120
F-22	2.1 30	3.8 1.0	60 140	208-220	1 Phase 3 Phase	46 24	70
PIPER	2.1 30	1.9 0.5	60 140	110 208-220		13.6 12.5	180

Above parameters are subject to change without notice. Please check with the factory for most current specification data.



## UNDER COUNTER INSTALLATION

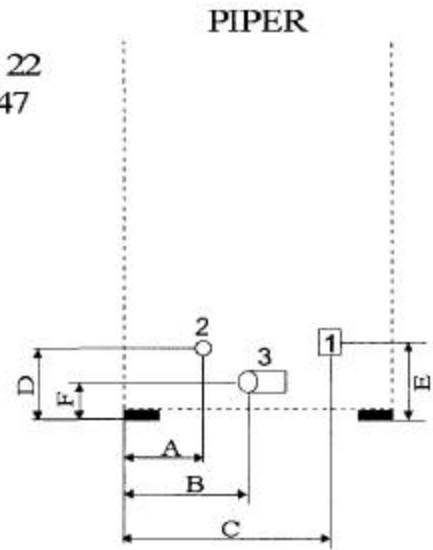
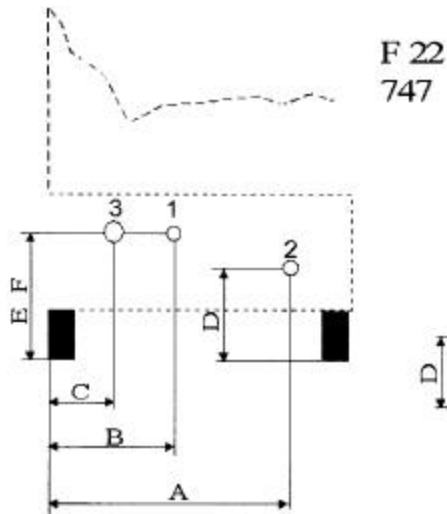
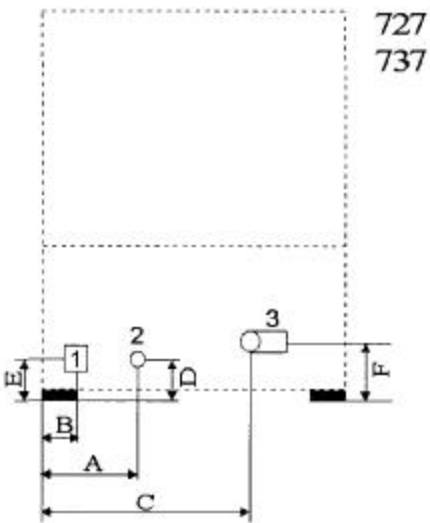
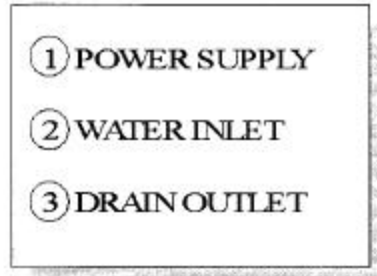
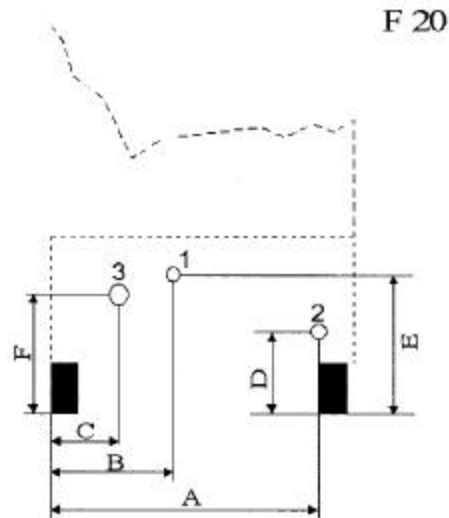
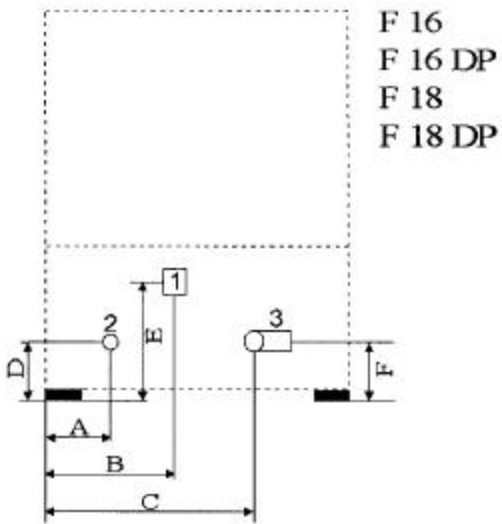


- Install legs on machine
- Make sure the machine is leveled.
- If a counter is put on top of the dishwasher, it is preferable if the counter can be removed easily for servicing. If the counter is fixed, leave half an inch (minimum) between the counter and the top of the unit.

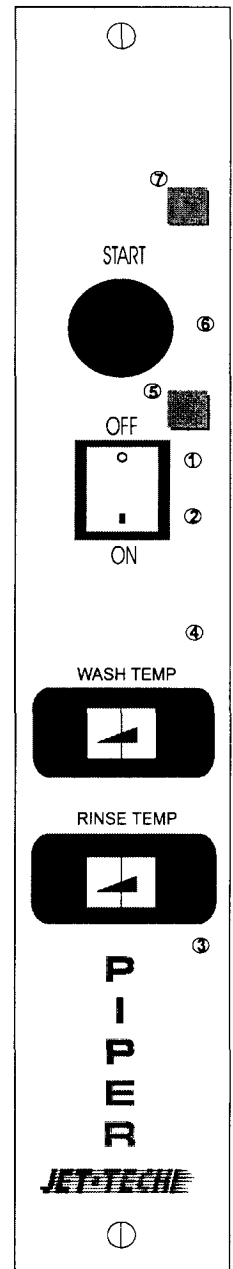
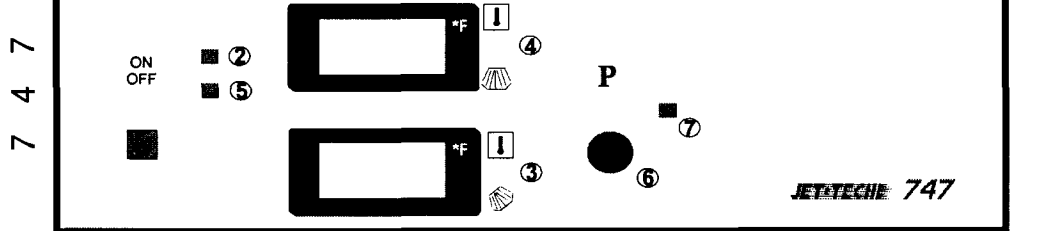
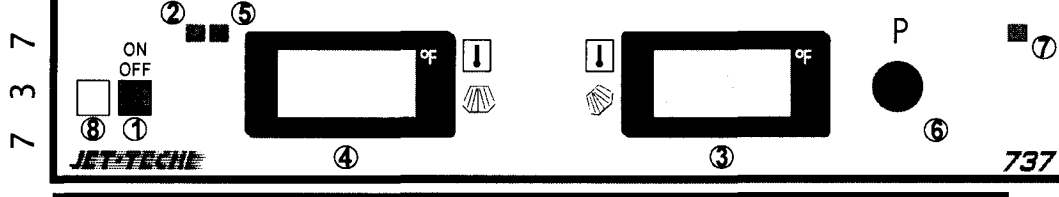
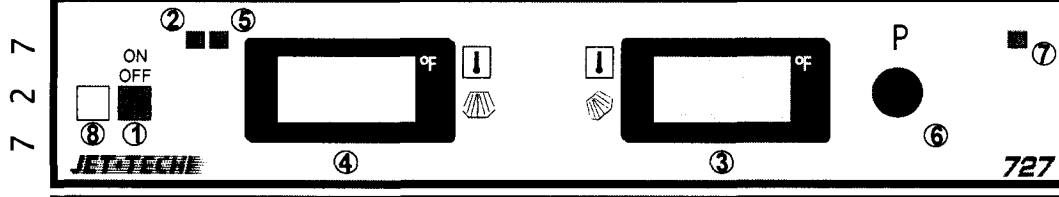
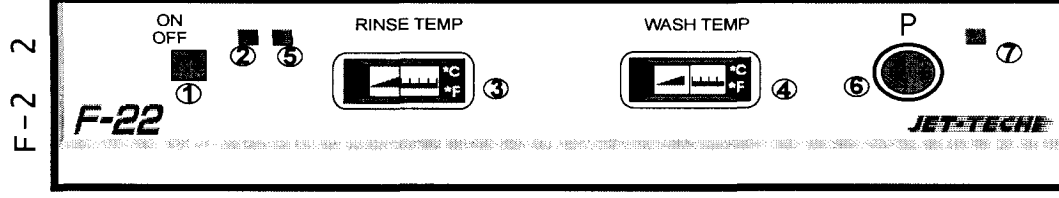
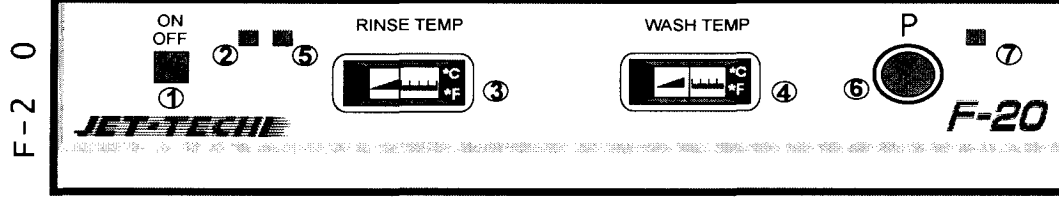
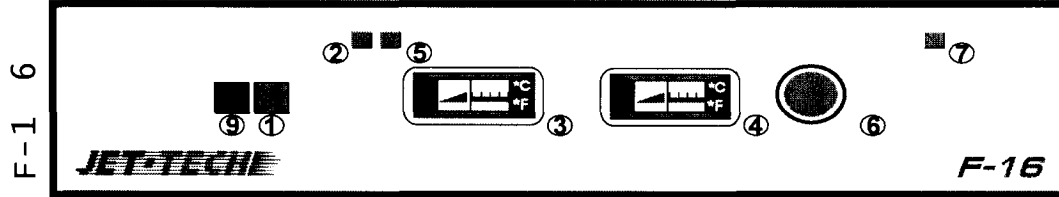
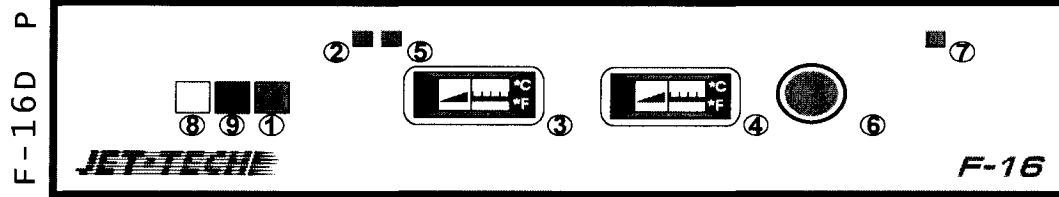
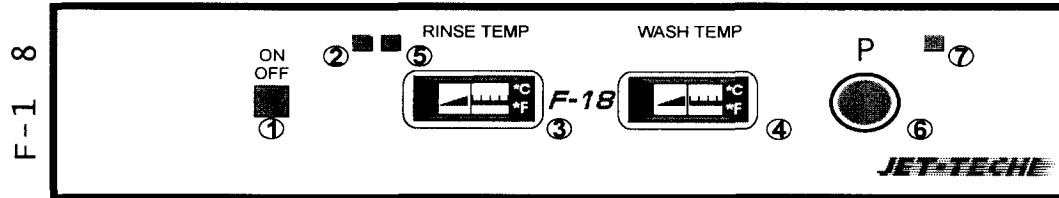
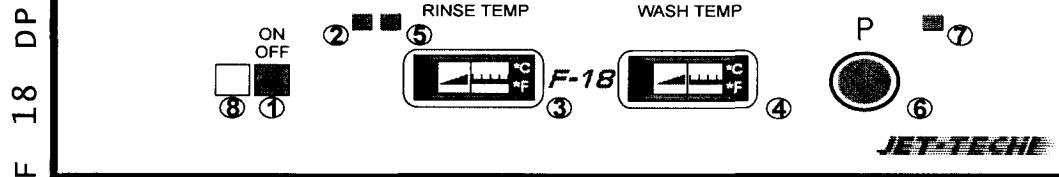
TABLE FOR UTILITY CONNECTIONS DIMENSIONS SEE PAGE 11

MODEL		SIDE A	SIDE B	SIDE C	SIDE D	SIDE E	SIDE F
PIPER	mm	270	375	315	74	95	42
	inch	10.6	14.7	12.4	3	3.7	1.6
F16	mm	190	230	295	38	85	38
	inch	7.5	9.1	11.6	1.5	3.3	1.5
F16DP	mm	190	230	295	38	85	38
	inch	7.5	9.1	11.6	1.5	3.3	1.5
F18	mm	240	305	365	50	85	50
	inch	9.5	12	14.3	2	3.3	2
F18DP	mm	240	305	365	50	85	50
	inch	9.5	12	14.3	2	3.3	2
F20	mm	430	390	245	180	545	510
	inch	17	15.3	9.6	7.1	21.4	20.1
F22	mm	505	380	180	185	380	380
	inch	19.9	15	7.1	7.2	15	15
727	mm	305	80	408	50	50	50
	inch	12	3.15	16	2	2	2
737	mm	380	320	460	50	50	50
	inch	15	12.6	18.1	2	2	2
747	mm	505	380	180	185	380	380
	inch	19.9	15	7.1	7.2	15	15

DIAGRAM FOR UTILITY CONNECTIONS



THE CONTROL PANEL



**LEGEND**

- 1 Green Power Button Switch
- 2 Power ON Indicator Light
- 3 Rinse Temperature Gauge
- 4 Wash Temperature Gauge
- 5 "READY" Indicator Light
- 6 Cycle Start Button
- 7 Cycle Indicator Light
- 8 White Drain Pump Button
- 9 Black Warm Rinse Button

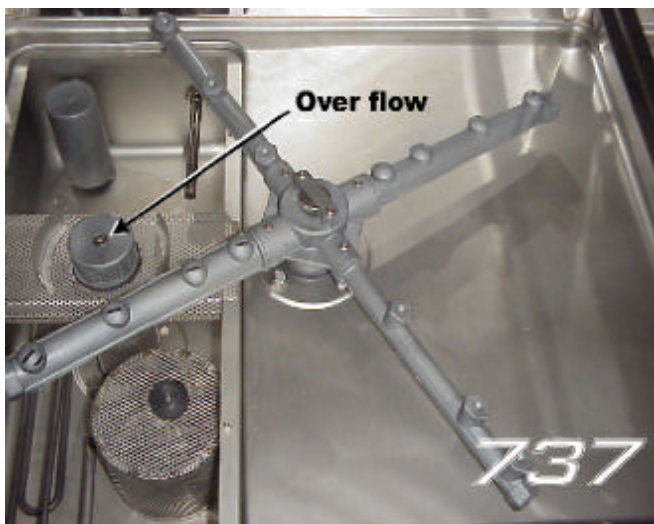
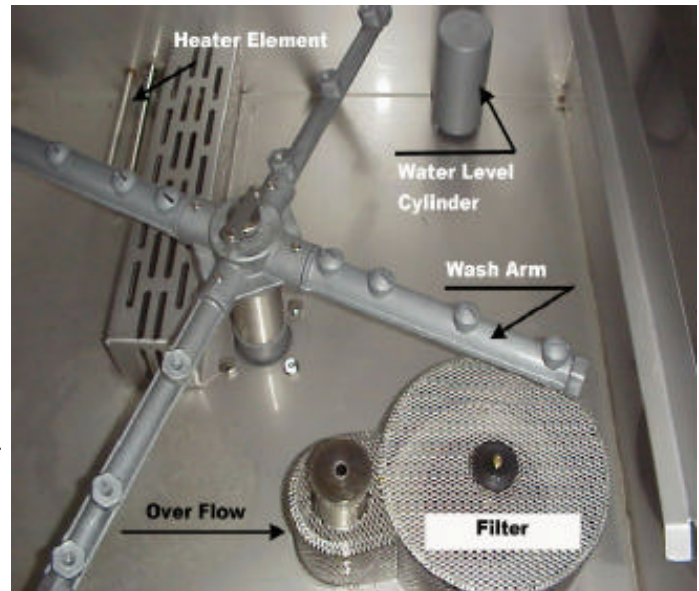
## F-18DP

Before operating the machine, ensure that the electrical power, water supply and drain connections have been made as per the installation instructions. Ensure that the overflow pipe is correctly set in its place (inside the wash tank). The overflow pipe should never be forced into its position.

Familiarize yourself with the gauges, buttons and indicator lights on the control panel. Check that there is sufficient rinse additive and if your machine is equipped with a liquid detergent pump, confirm that there is sufficient detergent as well.

- Press the Square Green Power Button ①. The Power Indicator Light ② will illuminate (as well as the Digital Temperature Gauges ③ ④, if so equipped). If the wash tank is empty, the machine will start to fill. Always keep the door closed during this time. When the machine has filled to its required water level, the elements will then raise the rinse and wash water temperatures automatically. It will take approximately 15-20 minutes in order to obtain the optimum temperatures (185°F in the booster and 140°F in the wash tank). The Ready Indicator Light ⑤ will illuminate to indicate that the machine is ready for its first load.

- Fill the basket with dishware and trays then push the basket into the machine. If you are using a powder detergent, add the required amount (usually about one full tablespoon) in the wash tank and close the door. If you are using liquid detergent with a chemical pump system (optional) detergent will be added automatically. **DO NOT** use domestic dish soap.



**NOTE:** Whenever starting with the initial fresh water after fill-up, it is recommended to place 1 -2 full tablespoons of detergent (if you are using powder detergent) on the filters in addition to the regular amount per batch. Use a **commercial** dish detergent, as recommended by your supplier. Using too much may cause damage to the pump seals.

- It is more economical to wash when the basket is fully loaded. It is also important not to overload the basket. Water should always be able to spray freely around the dishware and trays.

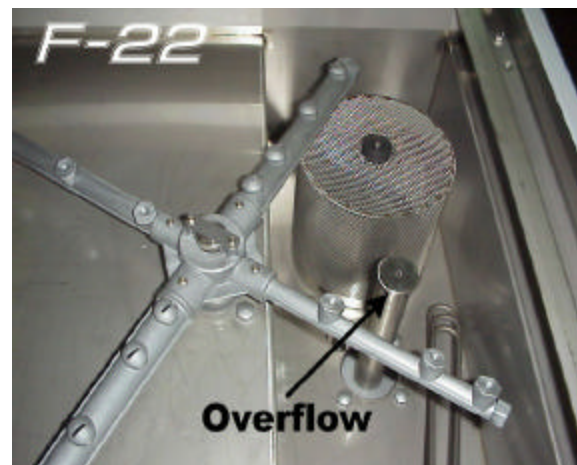
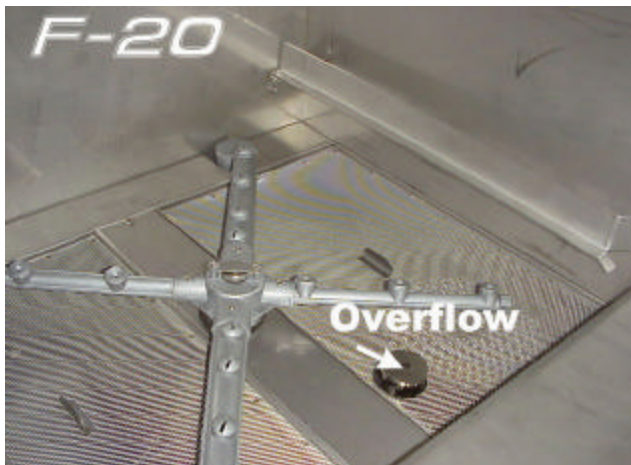
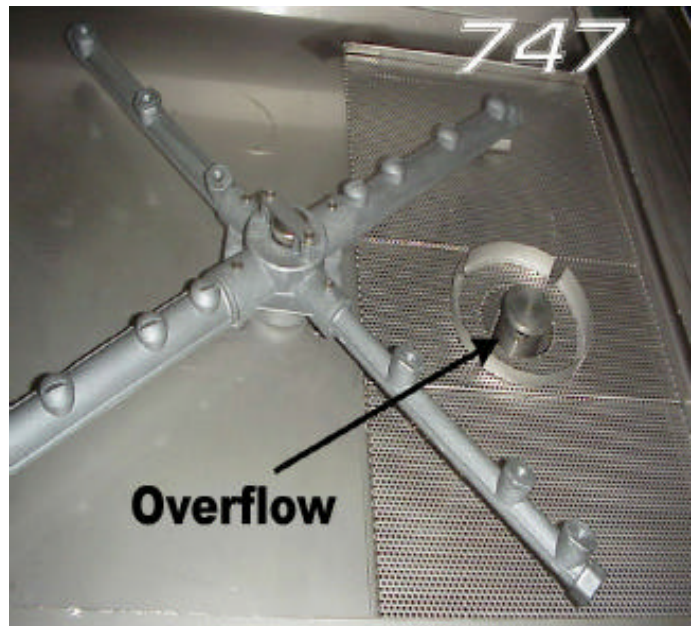
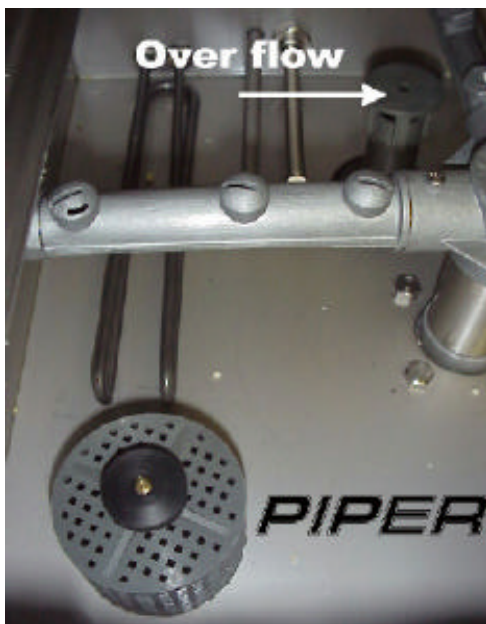
- Press the round black Cycle Start Button ⑥. The Cycle Indicator Light ⑦ will illuminate. The cycle starts and consists of a wash, a brief pause and then a rinse. Another basket can be filled while the first one is being washed. The Cycle Indicator

Light ⑦ will extinguish to signal the end of the cycle. Remove the basket from the machine.

## OPERATION

**NOTE:** It is recommended to change the wash water at least twice per day (after each peak period). Press Square Green Power Button 1 to the off position. Twist & pull up the overflow pipe and allow the machine to drain fully. The White Drain Pump Button ® must be activated on models so equipped.

- Rinse the tank out with clean water and remove any particles of food or debris. Do not flush debris down the drain of the dishwasher. Remove and clean the filter(s). Replace the filter(s) and overflow pipe in their proper positions. Close the door and leave the machine empty at the end of the day or if the machine will not be in use for more than a few hours.



## ELECTRICAL STAGES OF THE MACHINE

All JET TECH high temperature washers operate in the same basic manner. Ensure that the proper electrical, water supply and drain connections have been made, that the overflow tube (stand-pipe) is properly positioned in the washtank and the machine is level.

1. Press the GREEN POWER BUTTON SWITCH (TL) and the POWER ON (LL) indicator light will illuminate as well as the digital temperature gauges (TR) (if so equipped).
2. If the washtank is empty, the water inlet valve (ELB) will open and the washtank will start to fill through the rinse arms. The door switch (MP) is bypassed and the fill cycle will continue even if the washer door is opened. NOTE: On models so equipped, the automatic drain pump (MPS) and/or the liquid detergent pump (MPD), are energized at the same time as the water fill valve (ELB). The water level is controlled by an air trap in the washtank and an air pressure switch (PS). As the water level increases, air pressure from the air trap is directed to the pressure switch (PS). When the preset pressure is attained, the pressure switch transfers power from the fill valve (ELB) to the booster thermostat (TB).
3. If the rinse water temperature is below the preset level, the thermostat energizes the booster element (RB) (through coil (BCB), activating contactor (CCB) on some models). When the proper rinse water temperature is attained, power is transferred to the wash tank thermostat (TV).
4. If the wash water temperature is below the preset level, the wash thermostat (TV) energizes the wash tank element (RV) (through coil (BCV) activating contactor (CCV) on some models). When the proper wash water temperature is attained, power is transferred to the READY (LP) indicator light. IMPORTANT: THE TWO ELEMENTS ARE NEVER ENERGIZED AT THE SAME TIME. THE BOOSTER ELEMENT ALWAYS HAS PRIORITY OVER THE WASH TANK ELEMENT.
5. The READY (LP) light indicates that the temperatures are ideal for a wash cycle. It is normal for this light to cycle on and off as the elements maintain the proper rinse and wash temperatures
6. Press the BLACK CYCLE START BUTTON (TC). This activates a micro relay (BR). This momentary relay energizes two internal micro switches (CR1 & CR2). When CR1 is closed, it bypasses the CYCLE SWITCH (TC), keeping the relay (BR) closed. CR2 energizes the timer motor (MT) and the CYCLE INDICATOR LIGHT (LC) illuminates, starting the wash cycle.
7. As the timer motor (MT) starts to turn, the cam closes the first timer micro switch (M1) and opens the circuit energizing the relay (BR). This new connection bypasses the relay (BR) and keeping the timer motor (MT) and the CYCLE INDICATOR LIGHT (LC) energized. This micro switch stays closed for the length of the wash cycle.
8. One or two seconds after the wash cycle is initiated, the second timer micro switch (M2) is closed. M2 energizes the wash pump(s) (MPL) (through coil (BCMPL) activating contactor (CCMPL) on some models), starting the wash cycle.
9. At the end of the wash cycle, timer micro switch M2 opens, stopping the wash pump (MPL), sending power to timer micro switch (M3). Micro switch (M3) energizes the water inlet valve (ELB), starting the rinse cycle. NOTE: On models so equipped, the automatic drain pump (MPS) and/or the liquid detergent pump (MPD), are energized at the same time as the water fill valve. (ELB). At the end of the rinse cycle, the water inlet valve (ELB) closes and CYCLE INDICATOR LIGHT (LC) extinguishes.

Any of stages 2 through 5 may activate simultaneously during any of the wash cycle stages 6 through 9.

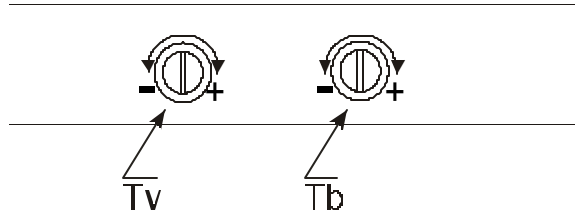
### **IMPORTANT NOTES:**

- Models F-16 and F-16 DP feature an alternative warm water rinse. Activating the Black button on the front control panel bypasses the booster tank for the final rinse and rinses using incoming water from the water inlet valve.
- JET TECH ware washers do not dump and fill after every cycle. The wash water is refreshed during every cycle by the hot rinse water. Excess stale water is expelled from the machine via the overflow pipe.
- Some models are equipped with an automatic drain pump (MPS)(White button on the front control panel) that will evacuate water to a maximum height of 36" (0.9M). Please see the section on: DRAIN PUMP OPERATION.



## THERMOSTAT ADJUSTMENT

- Before adjusting the thermostats, make sure that the temperature display probes and the thermostat probes are properly set in their respective cavities.
- Check the exploded view for the model you are servicing to determine the location of the thermostats.
- When the machine is ON and the wash tank is full, power is sent to the booster thermostat. When the correct rinse water temperature is achieved, power is transferred to the wash tank thermostat. When the correct wash water temperature is achieved, power is transmitted to the READY indicator light on the control panel. The booster always has priority in this sequence.



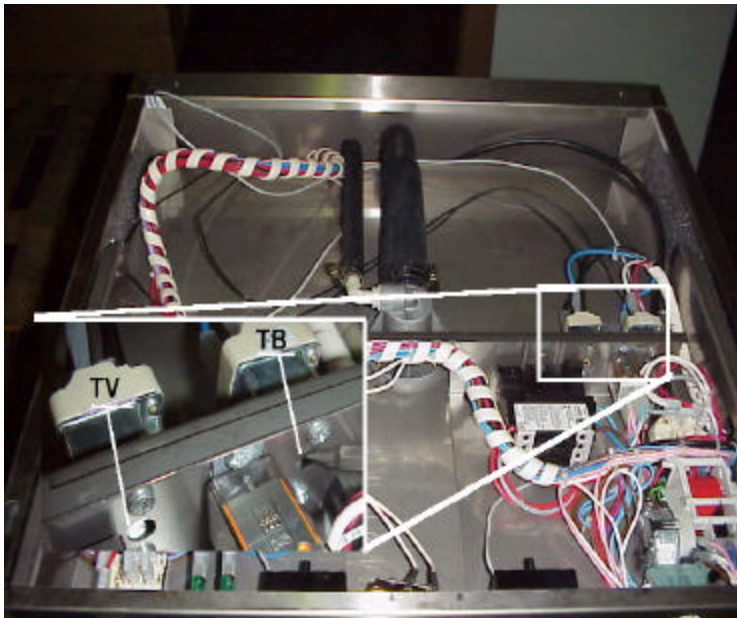
**IMPORTANT NOTE:** When the booster element is heating, there will be no power going to the tank element. The two elements are never on at the same time. If neither element is heating, check the booster contactor. If the booster element is defective, the wash tank element will not heat.

- The thermostat that controls the booster is identified as "TB" and the thermostat that controls the wash tank element is identified as "TV". The adjustment screw is in the middle of the thermostat and is sealed with paint to keep its calibration during shipment. It is possible to break this seal by turning the adjustment screw with a flat bladed screwdriver. Adjustments should be made in 1/8 of a turn increments, clockwise to increase the temperature and counter clockwise to decrease the temperature. You should allow 10-15 minutes between adjustments for the temperature to stabilize. Listen carefully when adjusting the booster thermostat. If you hear the water starting to boil in the booster tank, the thermostat is adjusted too high.

- Thermostat tolerance is  $\pm 3$  degrees:  
140° F (60° C) for the wash.  
185° F (85° C) for the rinse.

**NOTE:** Several models have the thermostats located in the "Slide Out" control panel. Do not pull the drawer out so far as to pull the air pressure hose off the air pressure switch.

### F16 & F16 DP F18 & F18 DP



*(Control Panel Top of machine)*

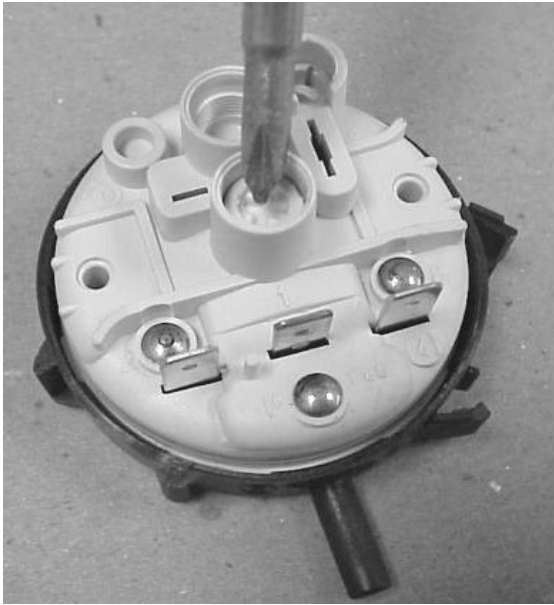
### F20-F22-727-737-747



*(Base of machine)*

## AIR PRESSURE SWITCH ADJUSTMENT

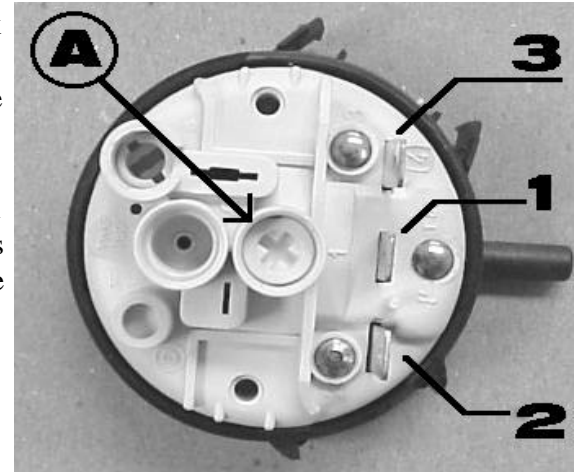
- The air pressure switch works in conjunction with the air trap in the wash tank to regulate the water level in the wash tank.
- Check the exploded view for the model you are servicing to determine the location of the air pressure switch.
- When the machine is first turned on and if the wash tank is empty, the air pressure switch sends power to the water inlet valve. As the water level rises in the wash tank, air pressure is created in the air trap. The air pressure hose sends this air pressure to the air pressure switch. When the predetermined air pressure



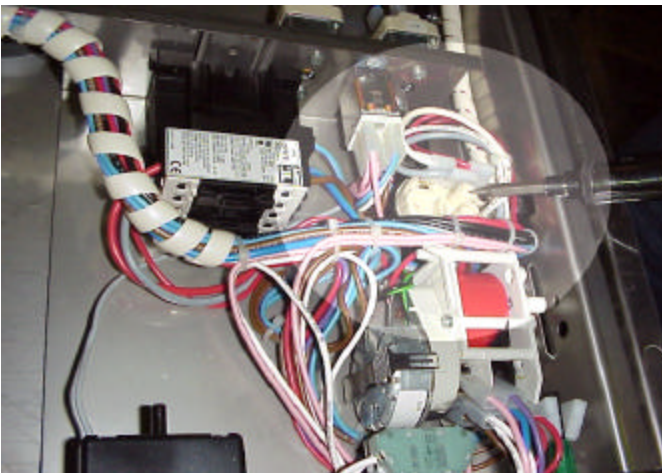
is achieved, the air pressure switch switches the power from the water inlet valve to the booster thermostat.

- Before adjusting the air pressure switch, ensure that there are no obstructions or blockages in the air trap or the hose.

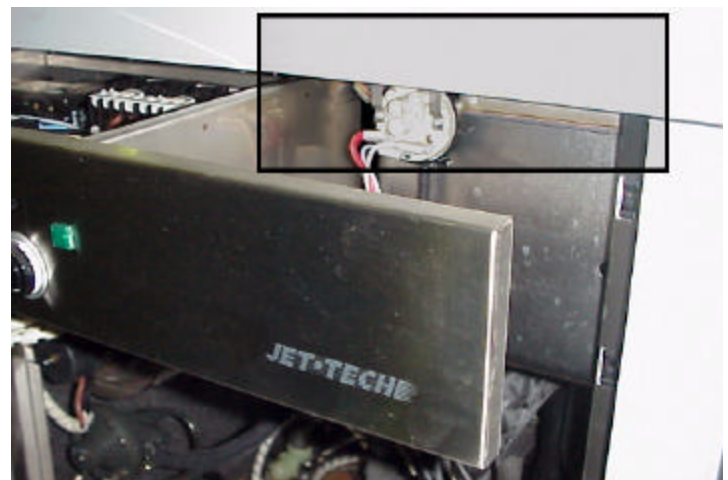
- The adjusting screw (Phillips head) is located in the middle of the air pressure switch. Adjustments should be made in 1/8 of a turn increments, clockwise to lower the water level and counter clockwise to increase the water level. The wash tank must be emptied and refilled with every adjustment to determine if the correct adjustment has been achieved. (1/2" from top of the overflow pipe).



**NOTE:** Several models have the air pressure switch located in the "Slide Out" control panel. Do not pull the drawer out so far as to pull the air pressure hose off the air pressure switch.



**F16 & F16DP  
F18 & F18DP  
727&737**

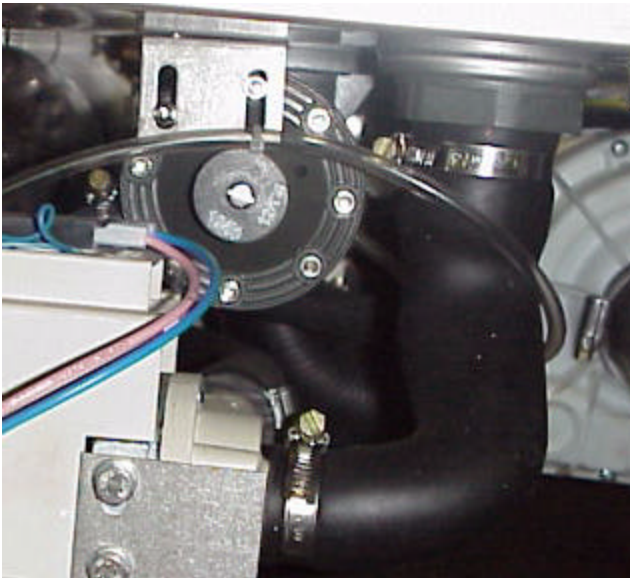
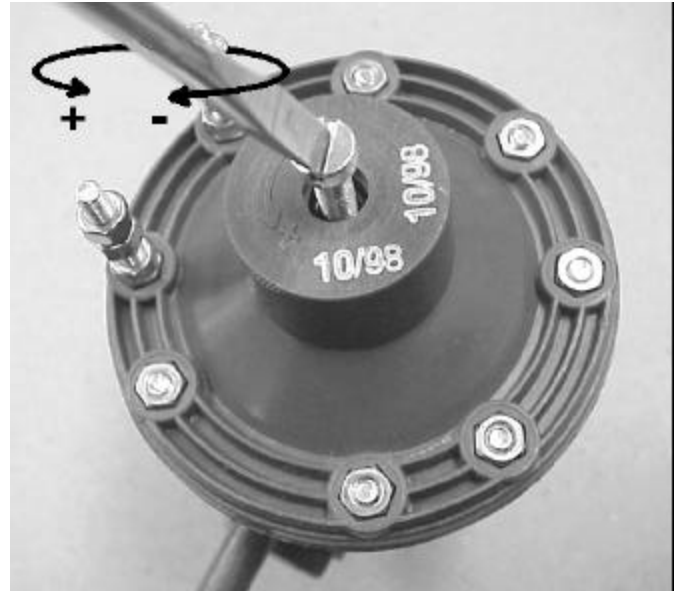


**F20-F22-747**



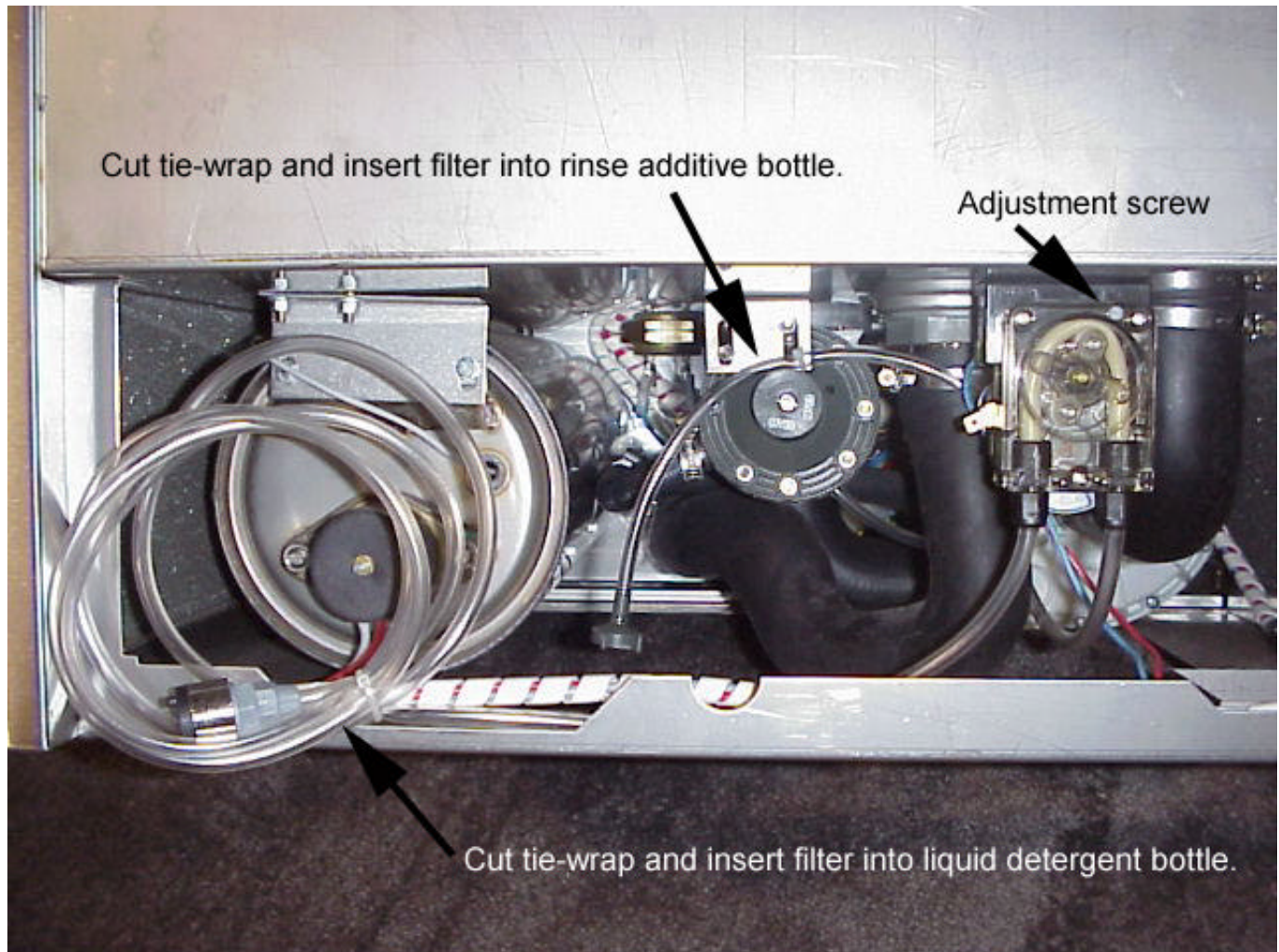
## RINSE PUMP ADJUSTMENT AND PRIMING

- The rinse pump is standard equipment on all **JET-TECH** machines and automatically injects rinse additive into the rinse water for the final rinse.
- The rinse pump is located in the base of the machine. The front, lower panel (below the door) snaps off to access the rinse pump. Cut the cable tie, route the tube out from the base of the machine and drop the clear vinyl hose and filter into your rinse additive container. (F1 8 & F1 8DP models are supplied with a rinse additive bottle that fits inside the base of the machine) Adjustments should be made clockwise to reduce the amount of rinse additive and counter clockwise to increase the amount of rinse additive.
- If air gets in the rinse hose or if the pump stops drawing additive from the container, the pump may need to be primed.
  - 1) Turn OFF the machine and empty the wash tank.
  - 2) Turn the adjusting screw on the rinse pump approximately 10 turns counter clockwise. The screw may fall out but this is not a problem. Just remember how many turns you had made when the screw fell out.
  - 3) Turn the machine ON & OFF, ON & OFF, ON & OFF, ON & OFF, etc., until the liquid is drawn up the tube to the rinse pump.
  - 4) Turn the adjusting screw on the rinse pump 10 turns clockwise or the same amount of turns you had made when the screw fell out.

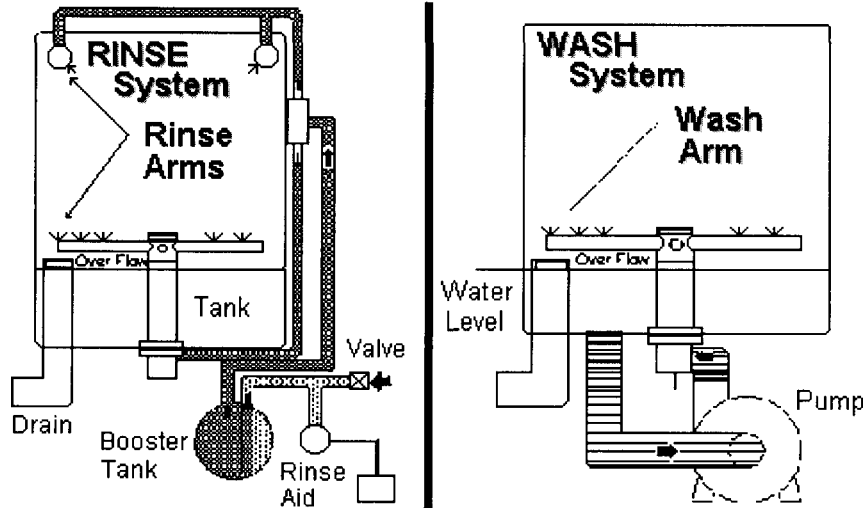


## LIQUID DETERGENT PUMP ADJUSTMENT

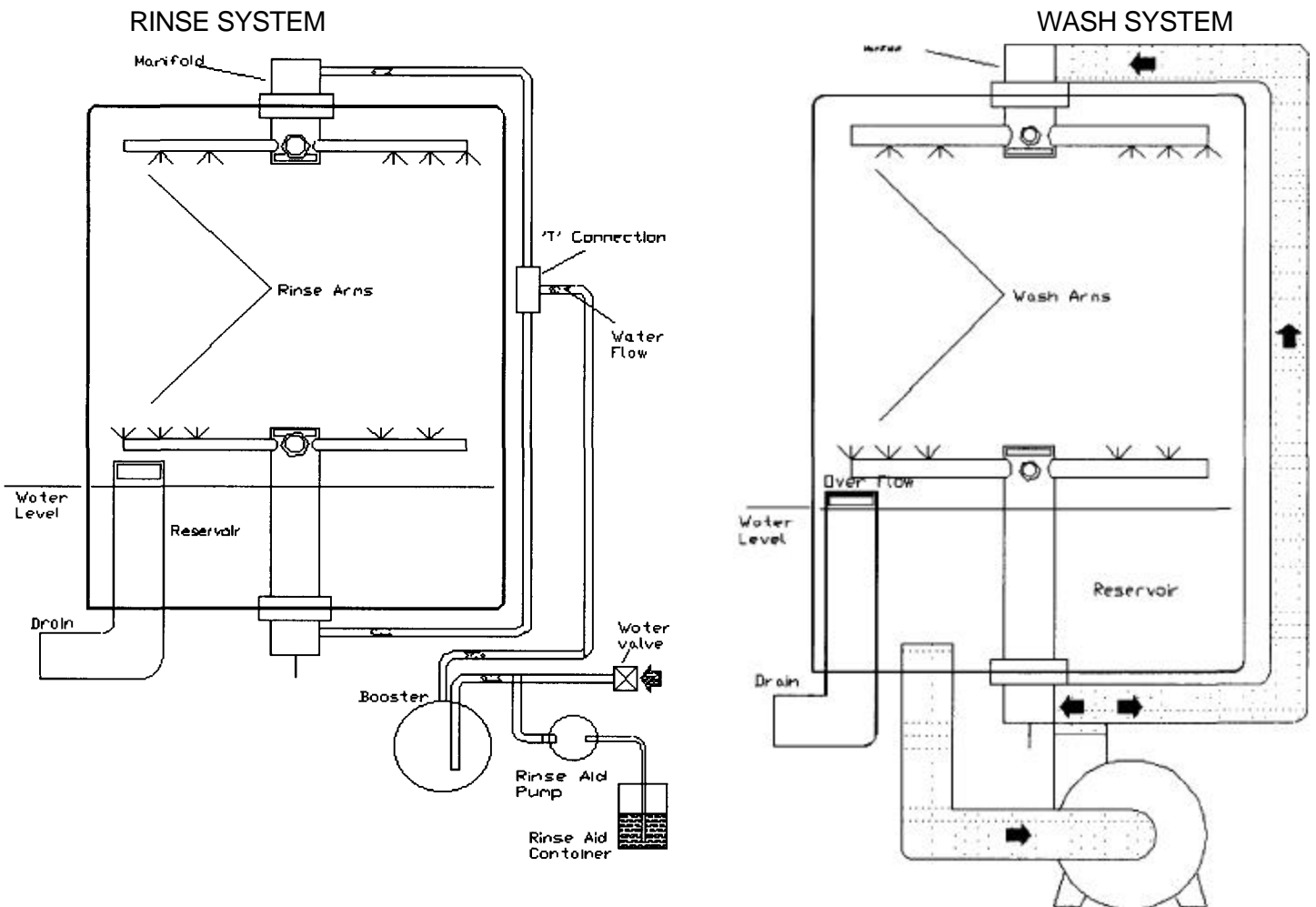
Models 727,737, F-16, F-16DP, F-18, F-18DP & F-20 are supplied with a factory installed liquid detergent pump to automatically dispense detergent into the wash tank chambers.



**WASH AND RINSE  
DIAGRAM FOR:  
F16 & F16DP PIPER**



**WASH AND RINSE  
DIAGRAM FOR:  
F18 & F18DP F20 - F22 727 - 737-747**



## DRAIN PUMP OPERATION

Models **727, 737, F-16DP and F-18DP** are factory built with drain pumps. A square white button on the control panel beside the green power button also evidences this feature. All other models have a gravity drain.

Drain pump equipped models will pump the drain water to a maximum height of 36" (0.9 meter). A 1" ID flexible hose\* is recommended to facilitate maintenance and servicing of the machine. It is important not to reduce the size of this hose. A 1" check valve\* **will be required**. There should be sufficient hose length to permit the machine to be pulled out for service.

The drain pump activates automatically during a washing/rinse cycle and functions when the water fill valve is open: during the fill and rinse cycles.

To manually drain the wash tank, you must:

1. -Turn off the machine (square green button on control panel).
2. -Open the door and remove the overflow pipe.
3. -Press the white button on the control panel, which will activate the drain pump. If the button locks is in the "ON" position, do not forget to turn the pump "OFF" when the wash water is evacuated.

The most common causes of drain pump failure are:

1. -The customer flushed debris down the drain and blocked the impeller in the pump. Removing the impeller cover and clearing the obstruction generally restores normal pump function.
2. -The customer forgot to turn "OFF" the drain pump (older models). The pump ran dry or overheated, seized or burned out. Newer models have a non-locking button which must be held for the drain pump to operate.



(\* ) Not supplied.

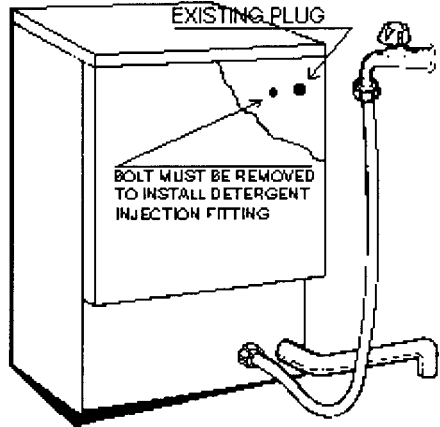
## INSTALLATION OF THE JET TECH LIQUID DETERGENT PUMP

A peristaltic type liquid detergent pump kit is available as a user installed option for all models.

### **Part List:**

- 1 - Peristaltic Pump
- 2 - 4mm. Machine Screws
- 2 - 4mm. Lock Washers
- 2 - 4mm. Hex Nuts
- 2 - 5mm. Hex Nuts
- 1 - Detergent Injector Fitting
- 1 - Filter with Check Valve
- 1 - "L" Shaped Mounting Bracket
- 1 - Length of Vinyl Tubing

### **Installation procedure**

1. Turn off the power going to the dishwasher from the breaker panel
  2. Remove the lower front & rear panels of the dishwashers, as per the "instruction & maintenance manual" provided with the dishwasher.
  3. Current models have a factory pre-drilled hole in the back. Remove the stainless steel nut & bolt and insert the detergent injector fitting. Otherwise, drill a 15/32" (12mm) hole in the back of the dishwasher tank, as per the illustration. Exact location of the hole is not critical. However, you must ensure that the location of the fitting will not interfere with the turning of the upper wash arm and also that the fitting will be above the level of the dishracks in the wash tank.
- 
4. Install the detergent injector fitting in the hole and secure the nut inside the wash tank
  5. Slide one end of the vinyl tubing on to the detergent injector-fitting valve and secure with the hose clamp provided. Route the free end of the tubing into the base of the dishwasher and out the front, ensuring that areas of high heat such as the booster tank and the pump motor are avoided.
  6. Cut the vinyl tubing to the required length at the front of the dishwasher (leaving sufficient slack) and connect the free end to the peristaltic pump outlet fitting. Inlet & outlet are identified on the pump by arrows.
  7. Connect one end of the loose piece of tubing to the inlet fitting of the pump.
  8. Secure the mounting bracket (with pump) to the screw studs under the wash tank with the 5mm Hex Nuts provided. Secure the peristaltic pump to the "L" shaped bracket with the 4mm screws, lock washers & 2 nuts provided.
  9. Connect the two electrical leads from the peristaltic pump to the wiring harness in the dishwasher.
  10. Route the free end of the vinyl tubing out the bottom of the dishwasher, again ensuring that areas of high heat such as the booster tank and the pump motor are avoided. Connect the tubing to the filter with check valve.
  11. Replace the lower front & rear panels of the dishwasher.

### **OPERATION OF THE LIQUID DETERGENT PUMP**

The pump will operate automatically during the washing/rinse cycle. The pump operates whenever the water fill valve is open: during the fill cycle and during the rinse cycle, remember that the detergent is being injected into the wash tank and is not mixing with the fresh water from the booster that rinse the dishes. There is an adjustment screw on the pump to regulate the amount of detergent being injected during each cycle.



## **INSTALLATION OF THE JET TECH LIQUID DETERGENT PUMP**

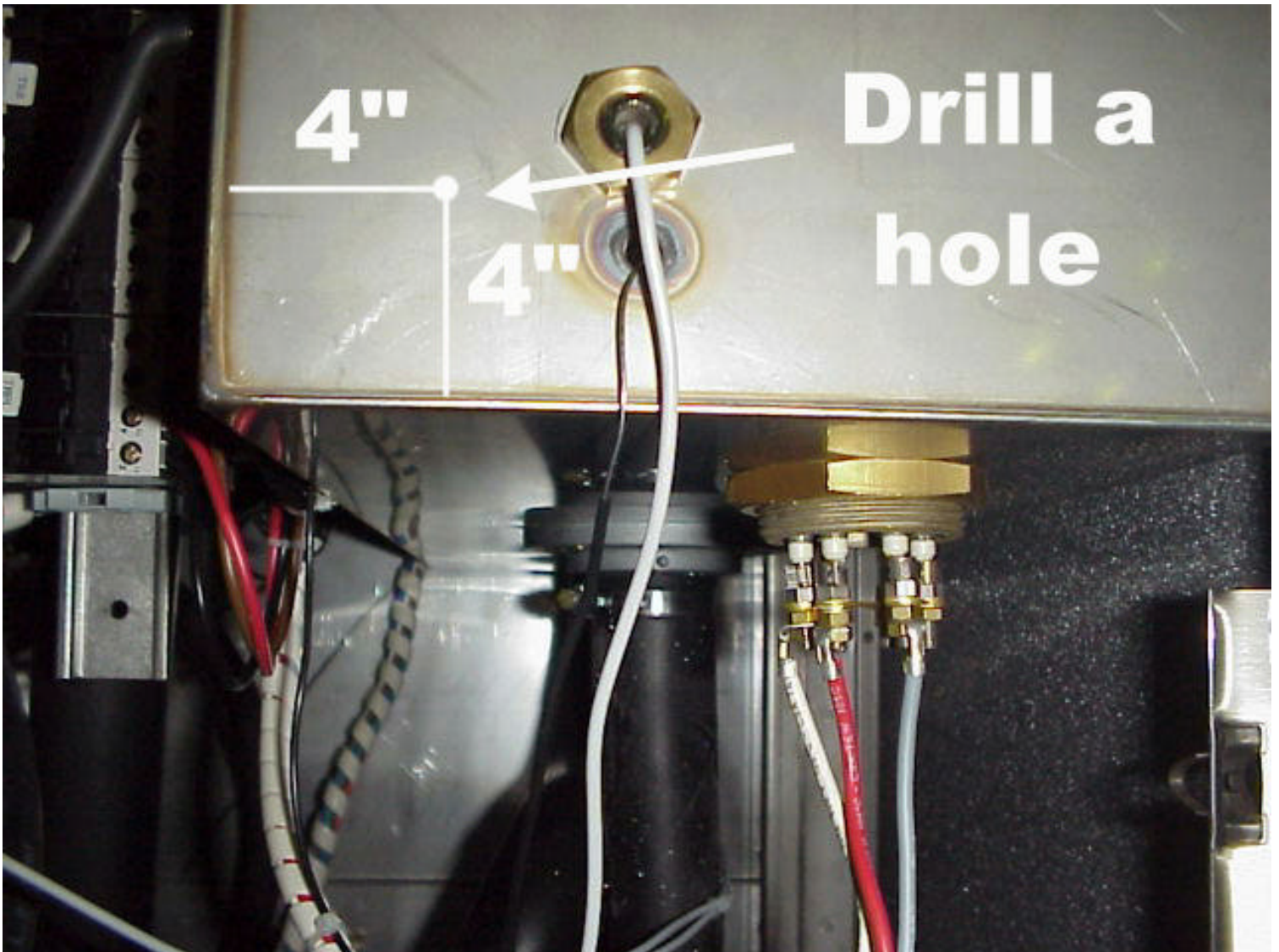
Turning counter-clockwise shortens the injection pulse time as well as increasing the time between pulses. Turning clockwise lengthens the injection pulse time as well as decreasing the time between pulses.

## **INSTALLATION OF "NON JET TECH" DETERGENT PUMP**

There is power going to the detergent pump wiring harness only when the water fill valve is open: during the fill cycle and during the rinse cycle, as explained in the previous section. This may be incompatible with some soap systems. Do not make any connections to the timer as this may cause the machine to malfunction and therefore void the warranty.

## **DETERGENT PUMP PROBE INSTALLATION**

On models F22 and 747, we recommend drilling a hole in the front of the recessed wash tank, 4" from the left side of the recessed wash tank, as illustrated below.



## TIMER AND SOLENOID REPLACEMENT

### WATER INLET VALVE (SOLENOID)

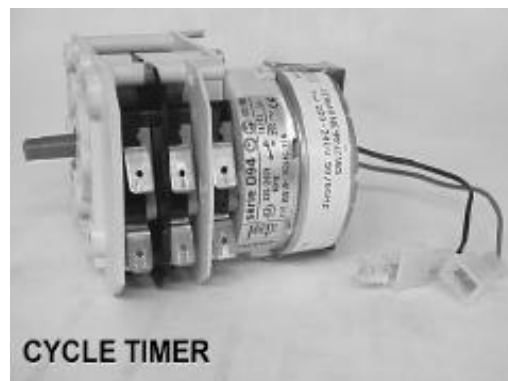
- The water inlet valve is open during the fill and rinse cycles. The machine fills through the rinse arms.
- Check the exploded view for model you are servicing to determinate the location of the water inlet valve.
- This valve cannot be serviced and must be replaced if defective.

**NOTE:** If you are replacing the water inlet valve on a model *F-22 or 747* (door type machines), the filter screen must be removed to provide the required increased water flow.



### CYCLE TIMER

- **JET-TECH** washers use a mechanical type timer which cannot be serviced and must be replaced if defective



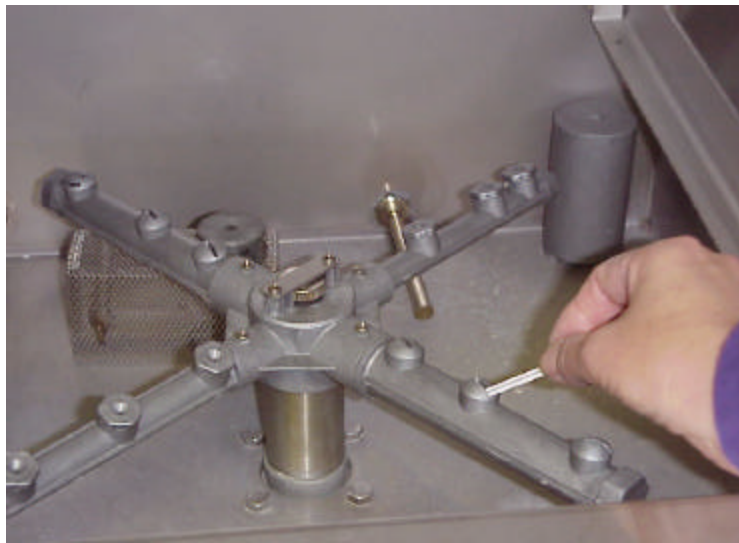
## MAINTENANCE

### DAILY

- Remove the rack
- Drain and clean out the dishwasher.
- Clean all the scrap screens.
- Clean the wash tank. Do not use abrasives to wash the tank.
- Do not flush food particles down the drain on "DP" (Drain Pump Equipped) Models.
- Verify levels of product for detergent and rinse-aid.

### WEEKLY

- Clean wash/rinse-arm jets, and free them of any blockage. Remove the wash/rinse arm assembly by unscrewing the center knob.
- Turn off the power to the machine. Open the front panel with a screwdriver. Visually inspect the peristaltic pump for worn tubes.



### MONTHLY

- Visually inspect inside the machine for any water or detergent leaks.

### SEMI-ANNUALLY

- Replace tubes in peristaltic pumps.
- Verify if "O" Rings are worn on wash/rinse arms.
- Rotate upper and lower arm assembly.

### ANNUALLY

- A complete verification by a qualified JET-TECH technician is now recommended.
- Treatment for mineral deposits.
- Flush and drain booster.
- Run a few cycles with a de-liming product.
- Electrical verification.
- Check all water and drain connections for any leaks.
- Check all components.
- Check hoses for wear and tear.



# IMPORTANT

## SERVICING OUR MACHINES IS EASIER THAN EVER.

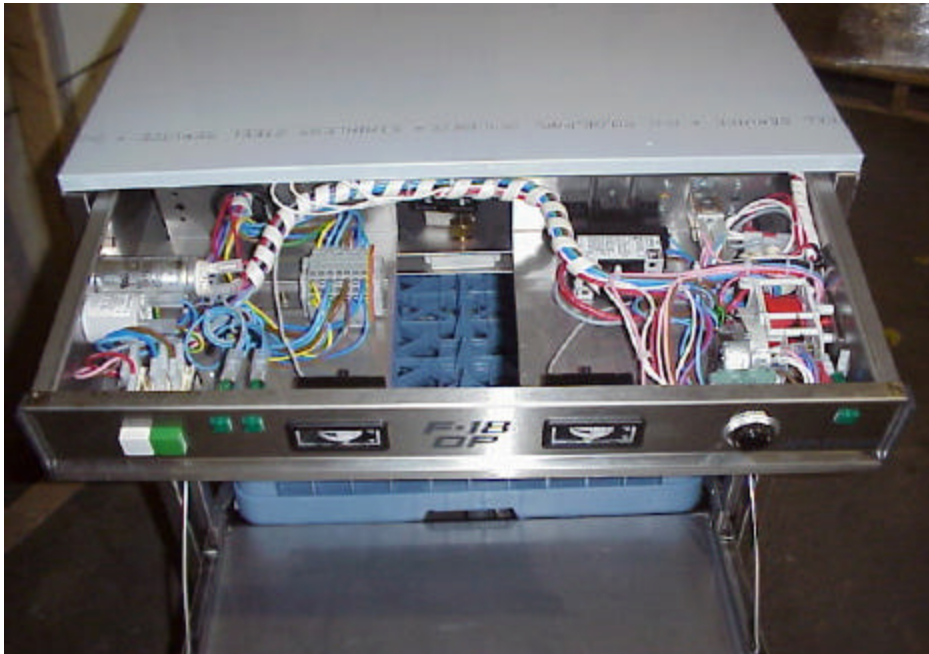
Our models F-16, F-18, F-20, 727 & 737 feature a control panel drawer that slides out for ease of access to internal components. Moving the dishwasher and removing the top panel is generally not necessary. Open the dishwasher door and wedge a flat bladed screwdriver between the lower lip of the control panel (left & right sides) and the doorframe. The control panel will "unsnap" and slide forward.

On our model F-22, the top panel lifts off.

On our model 747, give the control drawer a quick tug forward from underneath and it will slide out.

The lower front panel "unsnaps" at the bottom on all models, giving access to the componenets in the base of the machine.

**F-18DP**



**747**



PROBLEM	#	CHECK	ACTION
Does not wash properly	A001	Is the wash water clean?	Drain the tank, rinse and refill
	A002	Are the wash/rinse arm jets clogged?	Clean the jets/nozzles. Be careful not to lose the o-rings.
	A003	Are the scrap screens clean?	Clean the scrap screens & filters.
	A004	Is the water level in the wash tank correct?	Water level should be just under the opening of the overflow pipe.
	A005	The air trap may have dirt in it.	Clean the air trap
	A006	The air pressure switch may be faulty.	Adjust or replace as required.
	A007	The solenoid valve may have dirt in it or may be defective.	Clean filter or replace as required.
	A008	Incoming water pressure may be either too low or too high will result in poor rinsing.	If the pressure is too low (under 25psi), check that the faucet is fully opened. If it is, the customer may need to install a pressure-booster pump to increase the water pressure. If the water pressure is too high (above 35psi), you must install a pressure-reducing valve & set at 30psi.
	A009	Drain outlet hose may be blocked. Drain pump may be blocked or defective not allowing proper drainage of machine.	Un-clog or reposition hose. Un-clog or replace drain pump, as required.
	A010	The overflow pipe may be clogged.	Clean out any residue.
	A011	Wash pump may be clogged or defective.	Open face plate of wash pump for inspection. Clean wash pump or replace it if necessary.
	A012	Detergent system may be defective.	Peristaltic hose(s) may have to be replaced. The detergent filter in the container may be clogged or worn. Replace. Check the detergent line for deposits. Clean the line if necessary.
	A013	Detergent dispenser may be defective.	Replace
	A014	The detergent used is of poor quality.	Replace with a quality commercial brand.
	A015	Dishes appear dirty after the cycle is completed.	Pre-rinse the dishes properly before they are placed into the dish racks.
	A016	Foreign material may accumulate on the scap screens.	A foreign object such as napkin, may be in the wash system. All tubes and wash arms should be cleaned.
	A017	Small specs remain on glasses after rinsing.	Have water analyzed. May need a filtering system; or other product(s).

**TROUBLE SHOOTING**

<b>Does not operate/start</b>	B001	The power switch may be unplugged or defective	Verify connections and replace as required
	B002	Verify if there is power going to the machine	Verify the breaker Verify electrical connections to the machine
	B003	The door micro switch may be defective	Adjust switch Some of the parts may have to be replaced
	B004	The timer may be defective.	Replace
	B005	The momentary relay may be defective	Replace
	B006	The washing cycle button may be defective	Replace
	B007	One of the electrical components may have a short circuit	Each electrical components must be checked Replace as required
	B008	The wiring may have a short	Verify all connections
	A006	The pressure switch may be faulty	Adjust switch Replace as required
	A007	The solenoid valve may have dirt on it or may be defective	Clean filter or replace as required
<b>Spotting on glassware</b>			
	C001	The rinse agent may be of an inferior quality	Replace with a quality commercial brand
	C002	Rinse aid pump may need to be primed or adjusted	Prime or adjust Replace as required
<b>Dishwasher overflow</b>			
	A007	The solenoid valve may have dirt in it or may be defective	Replace as required
	A008	Incoming water pressure may be incorrect	SEE A008 ABOVE
	A009	Drain outlet hose may be blocked Drain pump may be blocked or defective not allowing proper drainage of machine	Un-clog or reposition hose Un-clog or replace drain pump, as required
	A010	The overflow may be clogged	Clean out any residue
<b>Pilot lamps do not illuminate</b>			
	B001	The power switch may be unplugged or defective	Verify and replace as required
	B002	Verify if power is going to the machine	Verify the breaker Verify electrical connections behind the machine
	B003	The door micro switch may be misaligned	Adjust switch Replace as required
	B004	The timer may be defective	Replace
	B005	The momentary relay may be defective	Replace
	B006	The wash cycle button may be defective	Replace
	D001	Pilot lamps may be faulty	Check connections Replace as required
	D002	Verify thermostats	Both thermostats may be defective

<b>Machine takes too long to empty</b>	A009	Drain outlet hose may be blocked. Drain pump may be blocked or defective not allowing proper drainage of machine	Un-clog or reposition hose. Un-clog or replace drain pump, as required.
	A010	The overflow pipe may be clogged.	Clean out any residue.
<b>Wash cycle is too short</b>	B004	The timer may be defective.	Replace
<b>Filling is too long</b>	A005	The air trap may have dirty in it.	Clean the air trap
	A006	The air pressure switch may be faulty.	Adjust or replace as required.
	A007	The solenoid valve may have dirt in it or may be defective.	Clean filter or replace as required
	A008	Incoming water pressure may be incorrect.	SEE A008 ABOVE
<b>Constantly fills</b>	E001	Is overflow tube properly positioned in wash tank?	Check for cracks or burrs.
	A005	The air trap may have dirt in it.	Clean the air trap
	A006	The air pressure switch may be faulty	
<b>Filling is too short</b>	A005	The air trap may have dirty in it	Clean the air trap
	A006	The air pressure switch may be faulty.	Adjust or replace as required
<b>Dishwasher makes a high pitch noise when washing</b>	F001	The wash tank may too much detergent	Too much soap may cause the pump to make a high pitch noise. Reduce the detergent amount; and ensure it is of the non-foaming type used. The mechanical seals may be worn. Replace as required.
<b>The wash pump does not operate consistently during a wash cycle</b>	A005	The air trap may have dirty in it.	Clean the air trap
	A006	The air pressure switch may be faulty.	Adjust or replace as required.
	H001	Machine is not leveled	Level the dishwasher.
	H002	Water level in wash tank is too low	Adjust pressure switch or replace as required

# HELP !!



If service is required or for any other inquiries, you can contact us:

**(888) ASK-4-JET**

**(514) 737-9701**

**FAX (514) 342-3854**