

Magic Wand CAR WASH SYSTEMS

1100 PAGE STREET • BRISTOL, VIRGINIA 24201

Phone: 276-466-3921
Fax: 276-466-4256
1-800-336-8795

OUTDOOR ENGINEERING
KINGSPORT, TENNESSEE 37660

PHONE NUMBERS

DISTRIBUTOR NUMBER -- _____
CONTACT PERSON-- _____
PAGER NUMBER-- _____

MAGIC WAND CAR WASH SYSTEMS
1-800-336-8795
MONDAY-FRIDAY 8:00A.M.-5:00P.M. EST
CONTACT PERSON: 1 -SELF SERVICE MANAGER

WATER HEATER: LOCHINVAR - 615-889-8900

CHANGERS: ROWE- 1-800-669-7693
 HAMILTON-1-800-837-5561

R.O. SYSTEMS: 1-800-828-2447

FRAGRAMATICS: 1-800-643-1574

IMPORTANT NUMBERS: _____

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MAGIC WAND CAR WASH SYSTEMS, INC. WARRANTY POLICY

MAGIC WAND CAR WASH SYSTEMS, INC. ("MAGIC WAND") provides this limited warranty to the original purchaser of MAGIC WAND equipment manufactured solely by MAGIC WAND. MAGIC WAND'S obligation under this warranty shall be limited to the repair or exchange of any part or parts manufactured by MAGIC WAND which may prove defective under normal use and service within 90 days from the beginning of the warranty period for the original purchaser. The warranty period shall begin at the completion of installation, or forty-five (45) days following shipment of substantially all of the unit to the original purchaser. Replacement of routine maintenance parts is not included in this warranty. It is purchaser's sole obligation to operate the equipment according to instructions or printed directions and to conduct regular and appropriate maintenance on the equipment.

The system furnished by MAGIC WAND may contain certain parts, which are not manufactured by MAGIC WAND and which may be warranted under a separate warranty from or by the respective manufacturers. MAGIC WAND provides no warranty for equipment manufactured by a party other than MAGIC WAND and supplied to the original purchaser by MAGIC WAND, but will provide reasonable assistance to the original purchaser to obtain warranty repairs from such manufacturer.

MAGIC WAND neither assumes nor authorizes any other person, including an independent contractor or distributor marketing MAGIC WAND EQUIPMENT, to assume for MAGIC WAND any other liability in connection with MAGIC WAND equipment, or to make any warranties beyond those warranties provided for herein. MAGIC WAND makes no warranty whatsoever in respect to accessories or parts not supplied by MAGIC WAND. The term "original purchaser" as used in this warranty shall be deemed to mean that person for whom the MAGIC WAND equipment was originally installed.

THIS IS A LIMITED WARRANTY. THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION OF THE WARRANTY CONTAINED HEREIN. MAGIC WAND SPECIFICALLY DISCLAIMS AND EXCLUDES ALL EXPRESS AND/OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY AND ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. PURCHASER ACKNOWLEDGES THAT IT HAS HAD THE OPPORTUNITY TO INSPECT THE MAGIC WAND EQUIPMENT AND SUBJECT TO THE LIMITED WARRANTY SET FORTH HEREIN, ACCEPTS THE EQUIPMENT IN "AS IS" CONDITION. MAGIC WAND SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL DAMAGES, LOST PROFITS, LOST OPPORTUNITY, OR ANY OTHER MONETARY OR EQUITABLE REMEDY OR CLAIM FOR DAMAGES AGAINST MAGIC WAND OTHER THAN A CLAIM BASED UPON THE SPECIFIC LIMITED REMEDY PROVIDED FOR HEREIN.

MAGIC WAND assumes no liability during or beyond the warranty period for any equipment which has been subjected to accident, negligence, alteration, misuse, or abuse, or purchaser's failure to properly maintain the equipment. By accepting delivery of the MAGIC WAND equipment, purchaser agrees to hold MAGIC WAND harmless and indemnify MAGIC WAND from and against any and all liability, judgement, damage, loss, cost or expense, including attorneys fees, which may accrue to or be sustained by MAGIC WAND, its shareholders, directors, officers, agents, or employees as a result of any claim, demand, suit or action of any nature or any type made or brought, including claims for damage to person or property, against MAGIC WAND, it's shareholders, directors, officers, agents, or employees arising from purchaser's use of the MAGIC WAND equipment, and/or as a result of any equipment which has been subjected to accident, negligence, alteration, misuse, or abuse, or purchaser's failure to properly maintain the equipment.

This Agreement shall be construed and enforced according to the laws of the Commonwealth of Virginia. Any action in regard to or arising out of the terms and conditions of this warranty or any other action relating to the purchase of equipment or supplies from MAGIC WAND shall be instituted and litigated in the courts of the Commonwealth of Virginia and in no other, and the parties hereby submit to the jurisdiction of the courts and the Commonwealth of Virginia. The sole venue for any action so filed shall be in the state court for the City of Bristol, Virginia. In the event that an action is filed in any other jurisdiction or venue, the filing party shall be responsible for any costs and legal fees incurred by non-filing party in having the suit dismissed or transferred to the appropriate court.

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RETURN PARTS FORM

Business Name _____ Phone _____

Qty.	Item #	Desc.	Invoice #	Date Purchased	Reason for Return
					<input type="checkbox"/> Damaged <input type="checkbox"/> Not Needed (New) <input type="checkbox"/> Defective (Please explain defect):
					<input type="checkbox"/> Damaged <input type="checkbox"/> Not Needed (New) <input type="checkbox"/> Defective (Please explain defect):
					<input type="checkbox"/> Damaged <input type="checkbox"/> Not Needed (New) <input type="checkbox"/> Defective (Please explain defect):
					<input type="checkbox"/> Damaged <input type="checkbox"/> Not Needed (New) <input type="checkbox"/> Defective (Please explain defect):

To receive credit, this form must be completed and enclosed with parts when returned.

MAINTENANCE

EVERY DAY, EVERY WAY, EVERY BAY

Think of maintenance as people think of a business venture. First, it takes some one with an idea. The next thing needed is capital. The third thing needed is someone to operate the business. Now answer this: Which of the three is the most important? The correct answer is, all three are equally important. Take any of the three away and the business will fail.

It is very important that a self- service car wash works every day, every way, every bay! Maintenance is one very important part of what makes a car wash profitable. Maintenance not only includes equipment servicing; it also has to do with cleanliness, lighting, and building appearance. There are car washes around the country that keep their equipment running properly but need to spend more time on clean up and building repair. Because outside appearance is the first thing you see when you drive up to a car wash let's put it first. A busy car wash will often appear messy with trash that people have just put out while washing their car. This should be picked up every chance you have. What looks bad is what we call "old dirt". Old dirt is the dirt that is in the corners of the building, around vacuum islands, on the edges of the lot around curbs, etc. Your wash should be cleaned at least twice a day. Develop a routine to be followed daily.

When you drive up to your wash give it an overall inspection, looking for signs of a bay down. Clues to look for are: one bay dry when the rest are wet; a bay that some one has crossed up the wand and brush hose; the wand thrown down instead of being in the wand holder. Look for vacuum hose on the ground instead of hanging in its proper place. After that inspect your equipment room. Walk through looking for any major problems. Be sure chemicals are in containers and hydrominders are pulling chemicals into tanks. Put your hand on the hot water tank as you walk by to make sure it is working.

After making sure everything is operational, start your cleaning. Wash down each bay just as a customer would wash his car. Put coins in the meter to start the wash. Run every cycle to make sure each function is working and adjusted properly. Try to get use to the amount of pressure you feel at the wand. Wash every bay, every day, every way, even if you don't think it needs it.

Now check the vacuums the same way. Put money in to start and check suction. If you have a clog or stoppage, take a short piece of pipe 1"x 12" and run the pipe through the hose. This will knock out any foreign objects that could cause a clog.

Remember the five "P's"....

PROPER PLANNING PREVENTS POOR PERFORMANCE

LIST OF ITEMS TO PUT INTO YOUR ROUTINE:

1. Learn to understand your equipment, and the theory of how it works. If you feel lost in this area call your distributor or manufacturer and ask them to explain. Once you understand the theory of how your equipment works it will better enable you to make your repairs.
2. A list of phone numbers has been provided in the front of the manual. The manufacturer can send you any additional information and parts break down of equipment you feel uncomfortable with.
3. When you spot a potential problem, fix it. Do not wait until it breaks down. Order parts immediately.
4. Make a place for spare parts and tools needed for repairing your car wash.
5. Keep a good stock of spare parts. Especially parts you know are going to break or be stolen. Here is a list of spare parts: 1 bay hose, complete wand, 1. Brush hose, brush handle, brush head, coin switch, timer for bay and a timer for vacuum, vacuum hose, solenoid valves one ¼" one ½", Spare fuses, 1 vacuum motor.
6. Your equipment room should be clean and dry. If you see water on the floor, find the source and fix it. Repair leaks even if it has nothing to do with your equipment operating properly.
7. Your asphalt should be sealed 120 days after it is first put down and every four years after that.
8. Landscaping and painting should be kept clean and done on a regular basis.
9. Check mud traps and clean as necessary. This will vary from site to site depending on usage and off road vehicle in your area.
10. A nightly inspection of your wash should be done a least twice a month to check for lights that may be out. Also be sure your lights are coming on and going off at the right time. This means you also need to do an early morning inspection as well as evening.

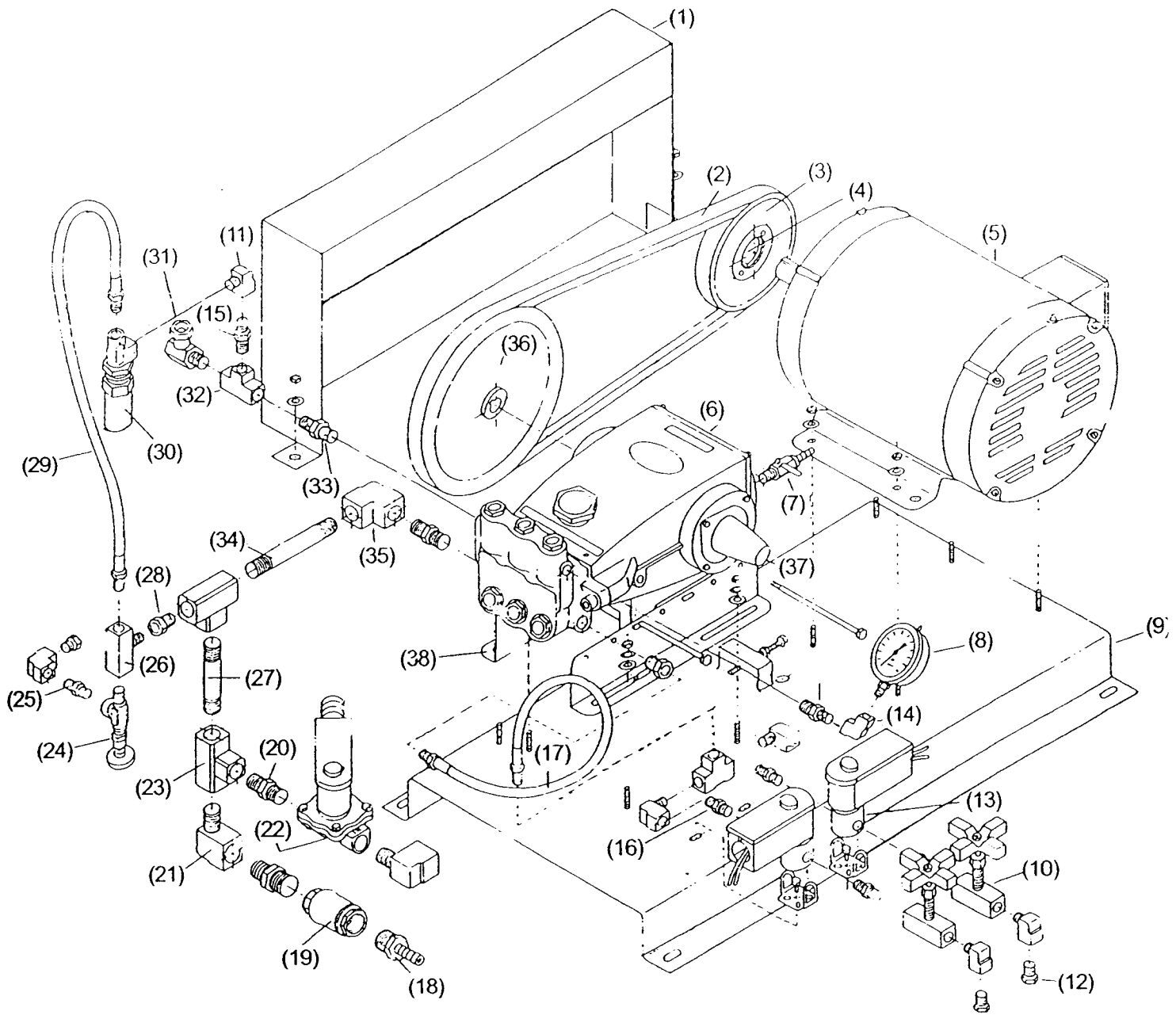
11. Daily, weekly, monthly, or manufacturer's specification maintenance of your equipment should be done. Example: Oil should be changed every 100 running hours or every three months. Clean and lubricate meter coin switches as needed. Never use WD 40 as cleaner on coin switches. A dry lube should be used. Don't forget 3 drops of CAT oil once a month for wick lubrication.
12. Automatically change vacuum motor brushes at least once a year and more if necessary. Inspect for dust around the motor. If you see dust around the motor this means a bag has developed a hole and needs to be repaired or replaced as soon as possible. If it is not repaired the motor will fail much quicker because dust is a vacuum motors worst enemy.
13. Check the temperature of your water a least once a month and have your water heater inspected once a year, as well as your floor heater. A heater burning out of adjustment can be very costly.
14. Winterize your wash before it gets cold weather. Check all freeze prevention lines for good flow. Make sure your thermostat and freeze valve are opening and closing correctly. Insulate plumbing lines and make sure you have heat in your equipment room.
15. Change nozzle tips every 100 running hours or every three months. A worn nozzle will affect cleaning ability and pump pressure.
16. Drain and clean tanks once a year.
17. Clean all tank strainers and in line filters monthly.
18. Be sure every pump has a pressure gauge and pressure is checked DAILY!
19. To better help you stay in contact with your customers and your customers in contact with you, a phone number should be placed in plain view to let you know when there is a problem. Magic Wand has a decal that can be purchased to display this information for you. It is very important that your customers be able to contact you instead of Magic Wand, to better protect **business owner / customer relationship**.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

WARNING: WHEN USING THIS PRODUCT, BASIC PRECAUTIONS SHOULD BE TAKEN AS FOLLOWS:

1. READ ALL THE INSTRUCTIONS BEFORE USING THIS PRODUCT.
2. STAY ALERT AND WATCH WHAT YOU ARE DOING.
3. RISK OF INJECTION OR INJURY TO PERSONS. DO NOT DIRECT DISCHARGE STREAM AT PERSONS.
4. DISCHARGE FLUID MAY BE HOT. DO NOT TOUCH OR DIRECT DISCHARGE STREAM AT PERSONS.
5. WAND AND HANDLE KICKS BACK, HOLD FIRMLY.
6. RISK OF ELECTRICAL SHOCK. DISCONNECT ALL POWER BEFORE SERVICING EQUIPMENT.
7. MOVING PARTS. DISCONNECT ALL POWER BEFORE SERVICING EQUIPMENT.
8. MAKE SURE OPERATING INSTRUCTIONS AND SAFETY INSTRUCTIONS ARE POSTED IN USER AREA.
9. TO REDUCE THE RISK OF INJURY, CLOSE SUPERVISION IS NECESSARY WHEN A PRODUCT IS USED NEAR CHILDREN.
10. KNOW HOW TO STOP THE PRODUCT AND BLEED PRESSURES QUICKLY. BE THOROUGHLY FAMILIAR WITH THE CONTROLS.
11. DO NOT OPERATE THE PRODUCT WHEN FATIGUED OR UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.
12. KEEP OPERATING AREA CLEAR OF ALL PERSONS.
13. DO NOT OVERREACH OR STAND ON UNSTABLE SUPPORT. KEEP GOOD FOOTING AND BALANCE AT ALL TIMES.
14. FOLLOW THE MAINTENANCE INSTRUCTIONS SPECIFIED IN THE MANUAL.



SYM	REQ. ID.	PART NAME	PART NO.
1	1	STAINLESS BELT GUARD	SSV7004 1013 S.S.
2	1	BELT FOR SINGLE PHASE	BEL1001 5L390
	1	BELT FOR THREE PHASE	BEL1006 5L400
3	1	PULLEY FOR SINGLE PHASE	MOT2005 BG47
	1	PULLEY FOR THREE PHASE	MOT2010 BG50
4	1	1 1/8" BUSHING	MOT2505 PTSMD112
5	1	MOTOR 3 HP SINGLE PHASE	MOT0035
		5 HP SINGLE PHASE	NPN
		3 HP THREE PHASE	MOT0040
		5 HP THREE PHASE	MOT0050
6	1	CAT PUMP	PMP1006
7	1	OIL DRAIN (2 PIECE)	VLV6080/BRS1720
8	1	0-2000# GAUGE	FIL1020
9	1	STAINLESS PUMP CHANNEL	SSV7005
10	2	1/4" STEEL NEEDLE VALVE	VLV6026
11	5	1/4" 90° ST. ELL	BRS2360
12	3	1/4" PUSH LOCK CONNECTOR	PLM5245/PLM5250
13	2	1/4" 24V ASCO VALVE NORMALLY CLOSED	VLV1005
14	2	1/4" ELL	BRS2310
15	2	3/8" X 1/4" NIPPLE	BRS1120
16	4	1/4" HEX NIPPLE	BRS1115
17	1	1/4" X 17" SOAP/WAX HOSE	HOS2002
18	1	3/4" MPT X 5/8" HOSE BARB	BRS1780
19	1	3/4" FOOT VALVE	VLV5315
20	3	1/2" HEX NIPPLE	BRS1140
21	2	1/2" ST ELL	BRS2370
22	1	1/2" 24V NORMALLY CLOSED ASCO VALVE	VLV1050
23	2	1/2" TEE	BRS2470
24	1	1/4" 90° BRASS NEEDLE VALVE	VLV6015
25	1	1/4" PARAPLATE HEX CHECK	VLV5005
26	1	1/4" TEE WITH MALE BRANCH	BRS2510
27	1	1/2" X 3" NIPPLE	BRS1315
28	2	1/4" X 1/2" BUSHING	BRS1525
29	1	1/4" X 17" BYPASS HOSE	HOS2003
30	1	SUTTNER REGULATOR ST-230	REG4010
31	1	3/8" 90° M X F DEAD SWIVEL	BRS6034
32	1	3/8" TEE	BRS2465
33	1	3/8" HEX NIPPLE	BRS1130
34	1	1/2" X 4" NIPPLE	BRS1320
35	1	1/2" ELL	BRS2315
36	1	PUMP PULLEY	PMP2015
37	1	SHAFT PROTECTOR	PMP1547
38	1 SET	MOUNTING RAIL	PMP2181

#280E INSTALLATION INSTRUCTIONS

MAGIC WAND STOCKS ALL MATERIAL NEEDED FOR INSTALLATION NOT FURNISHED WITH STANDARD EQUIPMENT PACKAGE.
SET ALL UNITS IN PROPER ORDER. LEVEL AS NEEDED. EQUIPMENT IS SET UP WITH MORE BAYS ON LEFT SIDE OF TANK. **EXAMPLE:** 6 BAY SPACE SAVER HAS 4 BAYS ON LEFT AND 2 BAYS ON RIGHT. (SEE DIAGRAM OF 6 BAY SET UP.) CONNECT 5/8" HOSE FROM THE MANIFOLD ON THE BOTTOM OF THE HOT WATER TANK TO THE HOSE BARB ON EACH PUMP. NEXT, CONNECT THE COLD WATER SUPPLY HOSE ON EACH UNIT TO THE 3/4" COLD WATER BIBB ON THE WALL.

PLUMBING:

1. THE TANK FOR YOUR NEW EQUIPMENT WILL HAVE THREE TO SIX SECTIONS DEPENDING ON YOUR APPLICATION. LOOKING AT THE TANK FROM DECAL SIDE, THE LEFT SIDE WILL BE FOR FRESH WATER. THE CENTER FRONT WILL BE FOR SOAP. THE RIGHT WILL BE FOR WAX. NEXT CONNECT CLEAR 1/4" PLASTIC HOSE TO MANIFOLD UNDER TANK AND RUN TO PUSH LOCK ONE FOR SOAP ONE FOR WAX ON EACH UNIT. THIS WILL SUPPLY WAX AND SOAP TO EACH UNIT.
2. CONNECT 1" LINE FROM WATER TO 1" COUPLING ON BACK OF STAINLESS STEEL TANK. ADJUST WATER LEVEL WITH FLOAT IN TANK TO ABOUT 2/3 TO 3/4 FULL.
3. PLACE SP368 HYDROMINDERS ON TANK WITH 1/4"X1/2" BOLTS AND NUTS AND CONNECT TO HOT WATER AS PER INSTRUCTIONS WITH EACH SP368 UNIT. (USE GREEN ORIFICE ON BOTH SOAP AND WAX SET UP.) THESE ARE PRE MOUNTED FOR REGULAR AND SPACE SAVER UNITS.

ELECTRICAL:

1. THERE WILL BE ONE 24 VOLT CORD ON THE #1 UNIT WHICH WILL PROVIDE POWER TO THE THERMOSTAT FOR ALL FREEZE SOLENOIDS. (SEE DIAGRAM FOR ELECTRICAL HOOK UP.)
2. THERE WILL NEED TO BE A 110-VOLT LINE RUN TO THE TRANSFORMER IN EACH CONTROL BOX. ONE FOR REGULAR UNIT,

ONE FOR EACH 2 BAYS OF SPACE SAVER, AND ONE FOR UP TO 4 BAYS ON STACK.

3. THERE WILL NEED TO BE A 220-VOLT LINE RECEPTICAL TO PLUG CORD FROM PUMPING UNIT TO MOTOR STARTER IN EACH CONTROL BOX. ONE 220 VOLT LINE PER BAY.

IMPORTANT: THIS PRODUCT MUST BE CONNECTED TO A GROUNDED, METAL, PERMANENT WIRING SYSTEM, OR AN EQUIPMENT GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE GROUNDING TERMINAL OR LEAD ON THE PRODUCT.

4. PULL 18/12 CABLE FROM EQUIPMENT ROOM TO BAY AND USING SPADE OR FORK TERMINALS CONNECT CABLE TO TERMINAL STRIP IN BACK OF METER. IN EQUIPMENT ROOM CUT CABLE TO BE WIRED TO JUNCTION BOX ON WALL. WIRE NUT ALL WIRES COLOR FOR COLOR.
5. WIRE LOW PRESSURE VALVES TO JUNCTION BOX FOR EACH BAY WITH CABLE FROM PUMPING UNIT. ONE WIRE TO NEUTRAL ONE WIRE FOR SIGNAL. **EXAMPLE:** USE 18/12 CABLE, RUN WHITE WIRE TO NEUTRAL BLACK TO ORANGE BLACK FOR FOAM BRUSH, GREEN BLACK TO TIRE CLEANER, BLUE BLACK TO PRESOAK WHITE BLACK TO R.O. IF THERE IS FOAMING PRODUCT, WIRE AIR VALVE TO CHEMICAL VALVE SO BOTH TURN ON AT THE SAME TIME.
6. CONNECT 18/12 FROM BAY WITH 6' LEAD FROM PANEL ON PUMPING UNIT

AIR COMPRESSOR:

1. SET AIR COMPRESSOR IN PLACE, WIRE CORD TO COMPRESSOR AND INSTALL MANIFOLD ON TANK AND TURN OFF BALL VALVE.
2. FLIP PRESSURE SWITCH TO AUTO, TURN ON POWER COMPRESSOR SHOULD BUILD UP OT 100 TO 120 PSI AND TURN OFF.
3. RUN LINES FROM MANIFOLD TO LOW PRESSURE ARO PUMPS UNDER TANK AND FOAM BRUSH MANIFOLD PLATE ON WALL. TIRE CLEANER, PRESOAK IF THEY ARE FOAMING PRODUCTS.

LOW PRESSURE HOSES:

1. RED FOR BRUSH, YELLOW TIRE CLEANER, BLUE FOR PRESOAK. ALL AIRLINES ARE 3/8" CLEAR BRAID FOR R.O.
2. PULL HOSE FROM EQUIPMENT TO BAY TO TOP OF BRUSH BOOM - ONE 1/4" RED, ONE 1/4" CLEAR BRAID. THESE HOSES CONNECT TO MANIFOLD ON TOP OF BRUSH BOOM TO MANIFOLD BOARD ON WALL.
3. PULL 1/4" YELLOW AND 1/4" CLEAR IF TIRE CLEANER IS FOAMING TO 360° BOOM IN CENTER OF BAY. CONNECT TO HIGH PRESSURE CHECK VALVE ASSEMBLY AT 360° BOOM AND MANIFOLD ON WALL.
4. REPEAT STEP 3 FOR PRESOAK 1/4" BLUE AND R.O. 3/8" CLEAR BRAID.
5. CONNECT 1/2" POLY AIR HOSE FROM LOW PRESSURE ARO PUMPS TO MANIFOLD BOARD ON WALL. 1/2" RED FOR BRUSH, 1/2" YELLOW FOR TIRE CLEANER, 1/2" BLUE FOR PRESOAK.

NOTE: BE SURE ALL HOSES ARE PUSHED INTO PUSH LOCK FITTINGS ON BOARD AND ALL HOSE CLAMPS ARE TIGHT BEFORE PUTTING PRESSURE ON PUMP.

6. ONCE THIS IS COMPLETE AND TANKS HAVE BEEN FILLED, OPEN BALL VALVE ON COMPRESSOR AND SET PRESSURE ON ARO PUMPS. TO SET PRESSURE SEE INSTRUCTIONS LOCATED BOTTOM RIGHT CORNER OF TANK.

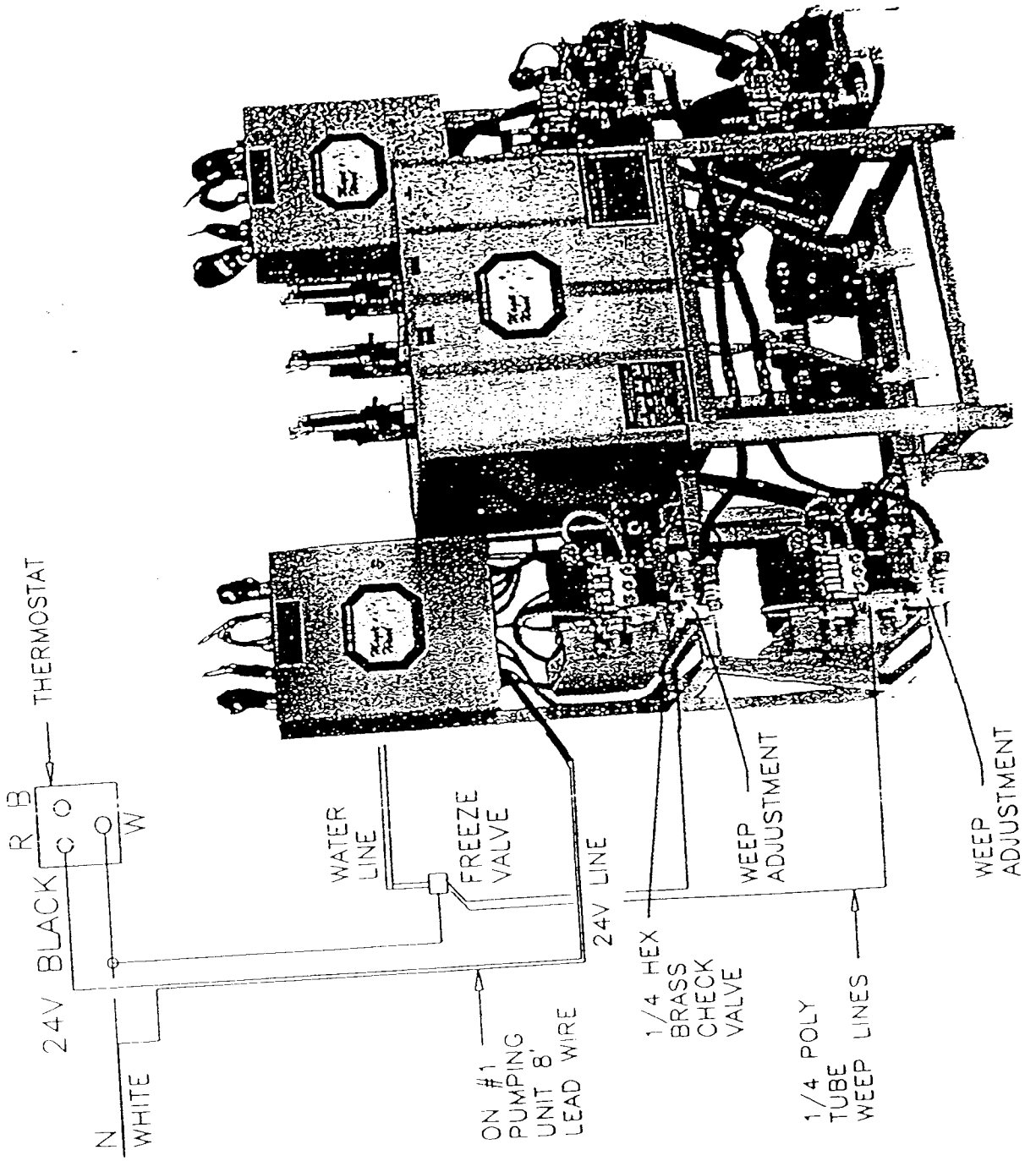
HIGH PRESSURE HOSE:

1. HOSE NOT FURNISHED WITH EQUIPMENT BUT IS AVAILABLE THROUGH MAGIC WAND. WHEN INSTALLING REUSABLE ENDS USE ANTI-SIEZE ON THREADS.
2. WE RECOMMEND 3/8" WIRE BRAID HOSE FROM THE PUMPING UNIT TO THE BAY.
3. INSTALL EITHER A REUSABLE END OR A CRIMPED ON END TO ONE END OF THE HOSE AND PULL TO THE CENTER OF THE BAY THE HOSE CONNECTS AT THE TOP OF THE 360° BOOM. HOSE CAN BE RUN TO THE TOP OR THE SIDE OF THE BOOM. IF ATTIC OR A FRAME STYLE ROOF IS USED. TOP MOUNT IS BETTER.

4. PULL HOSE OVER TO PROPER BAY NUMBER AND CUT WITH A GRINDER. LEAVE ABOUT 20" OF HOSE TO THE BACK OF EACH UNIT ON STACK UNITS, AS IT MAY BE NECESSARY TO PULL OUT THE CHANNEL AT SOME TIME. ALL OTHER UNITS CAN BE CUT TO FIT.
5. NOW INSTALL THE REUSABLE END ON THE PUMPING UNIT END OF HOSE. THESE ENDS ARE EASILY INSTALLED WITH AN ELECTRIC OR AIR OPERATED IMPACT WRENCH.
6. IF TIRE CLEANER OR PRESOAK IS USED, THE HIGH PRESSURE HOSE CONNECTS TO HIGH PRESSURE CHECK VALVE ASSEMBLY, BEFORE IT IS MOUNTED TO BOOM.
7. USING 3/8" DEAD SWIVELS WILL MAKE THIS JOB MORE CONVENIENT IN THE FUTURE SHOULD A CHECK VALVE EVER NEED REPLACING

FREEZE SYSTEM:

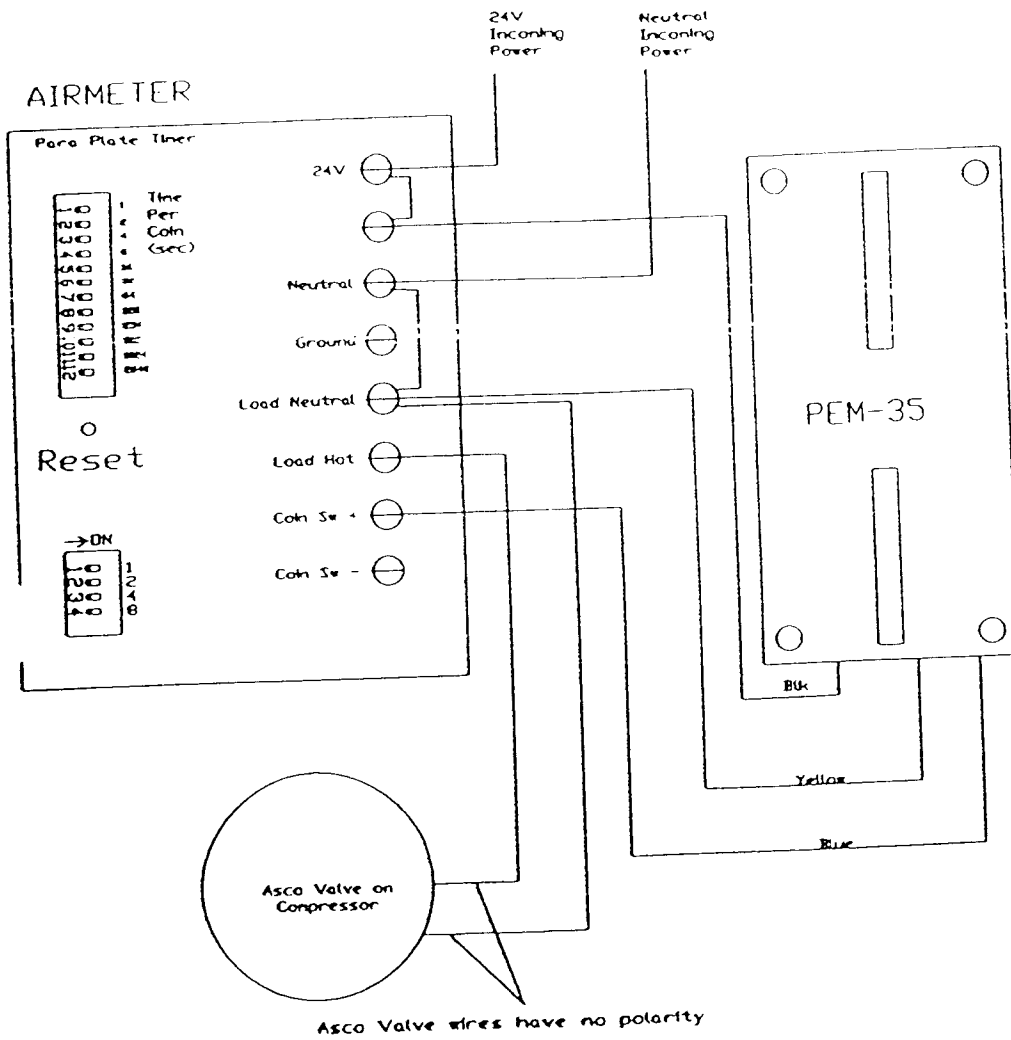
1. FOR UNITS OF 6 BAYS OR LESS ONE, 1/2" MANIFOLD WILL BE PROVIDED; FOR SIX BAYS OR MORE ONE, 1/2" VALVE.
2. CONNECT MANIFOLD TO COLD WATER SUPPLY LINE.
3. CUT 1/4" POLY TUBING TO FIT FROM MANIFOLD TO PUMPING UNIT FREEZE CONTROL. BE SURE LINES ARE PUSHED INTO PUSH LOCKS FIRMLY OR LEAK WILL OCCUR. TUBING MUST ALSO BE CUT SMOOTH OR A LEAK COULD OCCUR.
4. ALSO SEE FREEZE SYSTEM DIAGRAM FOR BETTER UNDERSTANDING OF SYSTEM.
5. THE NUMBER ONE PUMPING UNIT HAS AN 8' LEAD. THIS IS THE 24 VOLT POWER TO THERMOSTAT. THE BLACK WIRE GOES ON THE "R" OF THE THERMO. THE WHITE GOES TO THE NEUTRAL. NEXT RUN A PIECE OF 18/2 CABLE FROM THE THERMOSTAT TO THE WEEP VALVE. THE BLACK WIRE GOES ON "W" OF THE THERMOSTAT. TIE THE TWO WHITE WIRES TOGETHER.
6. TURN THERMOSTAT TO HIGHER THAN OUTSIDE TEMPERATURE, TURN WATER ON TO WEEP VALVE AND ADJUST OUTGOING WATER WITH WEEP CONTROL ON LEFT SIDE OF PUMPING UNIT. SET THERMOSTAT TO 35 DEGREES. WEEP SYSTEM SHOULD NOW TURN ON AND OFF WITH OUTSIDE TEMP. NUMBER ONE PANEL BOX MUST HAVE POWER BEFORE SYSTEM WILL WORK.



AIR METER

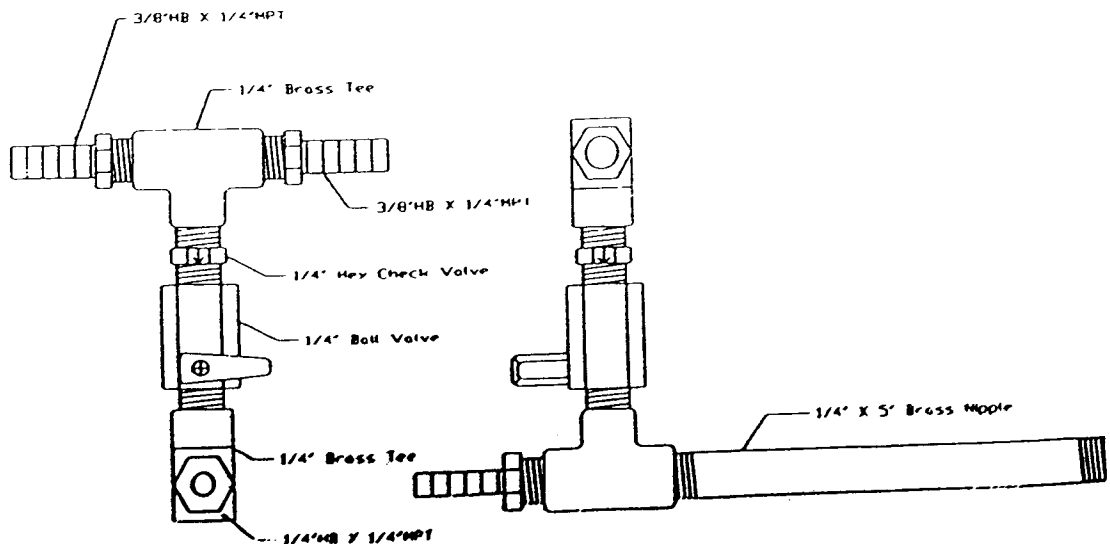
THE AIR METER CAN BE MOUNTED DIRECTLY TO A WALL OR MOUNTED TO A PEDESTAL MADE ESPECIALLY FOR THE AIR METER. IF MOUNTING THE METER SOMEWHERE OTHER THAN THE EQUIPMENT ROOM WALL, A PIECE OF 3/4" TO 1" CONDUIT MUST BE RAN TO PULL HOSE AND WIRE THREW. OUR AIR METER OPERATES ON 24 VOLTS AC THE SAME AS OUR IN BAY METERS. THE COIN SWITCH CAN BE UPGRADED TO ACCEPT TOKENS AND IS CONTROLLED BY PARA PLATE TIMER.

1. IF MOUNTING TO A WALL, HOLD METER IN PLACE AND MARK MOUNTING HOLES AND HOLE IN CENTER FOR AIRLINE AND ELETRICAL.
2. DRILL 4 HOLES TO MATCH YOUR ANCHOR SIZE.
3. DRILL CENTER HOLE.
4. MOUNT AIR METER TO WALL.
5. PULL CABLE AND AIRLINE THROUGH CENTER HOLE IN BACK OF METER.
6. CONNECT AIRLINE TO 1/4" HOSE BARB IN BACK LEFT CORNER OF METER.
7. CONNECT WIRES TO 24 VOLT, NEUTRAL, AND LOAD HOT.
8. INSTALL OUTSIDE AIR LINE TO BOTTOM OF AIR METER. {1/4" MPT}
9. MOUNT ASCO VALVE TO AIR COMPRESSOR. 1 IS IN, 2 IS OUTGOING TO METER.
10. SCREW 1/4" BOSE BARB INTO #2 SIDE OF VALVE AND CONNECT AIRLINE.
11. WIRE VALVE TO LOAD HOT AND NEUTRAL ON TIMER.
12. SET TIMER TO THE CORRECT NUMBER OF COINS TO START. THEN SET SECONDS PER COIN AND METER SHOULD BE READY FOR USE.



BRUSH WATER WEEP ADD ON

1. REMOVE $\frac{1}{4}$ " HOSE BARB AND REPLACE WITH $5'' \times \frac{1}{4}$ " NIPPLE
2. SCREW $\frac{1}{4}$ " TEE ON TO NIPPLE WITH $\frac{1}{4}$ " HOSE BARB GOING OUT THE TOP OF THE TEE
3. NEXT SCREW BALL VALVE INTO TEE
4. SCREW $\frac{1}{4}$ " BRASS HEX CHECK VALVE INTO BALL VALVE
5. MAKE SURE $>$ ON CHECK VALVE IS GOING INTO BALL VALVE
6. SCREW TEE ONTO CHECK VALVE AND $\frac{1}{4}$ " \times $\frac{3}{8}$ " HOSE BARBS INTO TEE AND CONNECT HOSE BETWEEN VALVES
7. THE LAST VALVE SHOULD HAVE THE $\frac{3}{8}$ " REGULATOR SCREWED INTO IT.
8. RUN A HOSE FROM THE NORMALLY OPEN WEEP VALVE TO THE REGULATOR ON THE BRUSH PLATE.
9. ADJUST WATER PRESSURE ON REGULATOR. USUALLY 10 TO 15 P.S.I. IS ENOUGH.
10. ADJUST EACH BAY WITH THE BALL VALVE FOR THAT BAY. WATER SHOULD NOT HAVE A HEAVY STREAM, BUT A SMALL AMOUNT. JUST ENOUGH TO KEEP FROM FREEZING. SOME LOCATIONS MAY NEED MORE WATER THAN OTHERS DEPENDING ON CLIMATE.



BRUSH ANTI-FREEZE

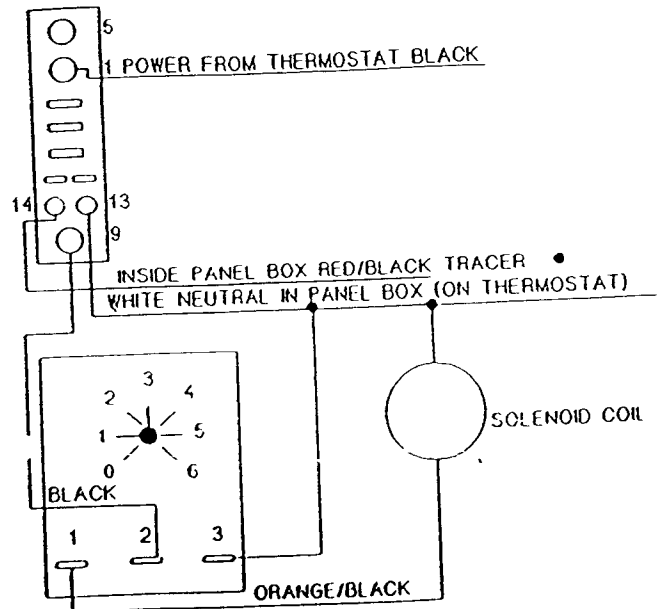
HOW THE SYSTEM WORKS: WIRED CORRECTLY, IF THE TEMPERATURE DROPS TO DESIRED SETTING ON THE THERMOSTAT (AROUND 33 DEGREES) THE THERMOSTAT POWERS ALL THE ANTI-FREEZE VALVES AT THE SAME TIME. THE BRUSH LINES ARE THEN PURGED WITH ANTI-FREEZE SOAP. EACH BAY HAS A TIMER INSIDE THE PANEL BOX THAT HAS A SETTING OF 0-6. EACH BAY MAY HAVE A DIFFERENT TIME SETTING TO ALLOW THE LINE TO BE FULLY FLUSHED. THE FARTHER AWAY THE BAY THE LONGER IT MAY TAKE TO FLUSH THAT BAY. REMEMBER THAT THE SYSTEM WILL ONLY FLUSH ALL THE LINES AT THE SAME TIME, ONCE. AFTER THAT, THE SYSTEM USES THE RELAY IN EACH PANEL BOX TO DETERMINE WHEN TO PURGE THE LINE.

TO HELP KEEP OPERATING EXPENSES DOWN, EACH TIME THE BAY HAS BEEN TURNED ON REGULAR BRUSH SOAP IS USED. WHEN THE BAY GOES OFF, THE BRUSH LINE IS RECHARGED WITH ANTI-FREEZE SOAP.

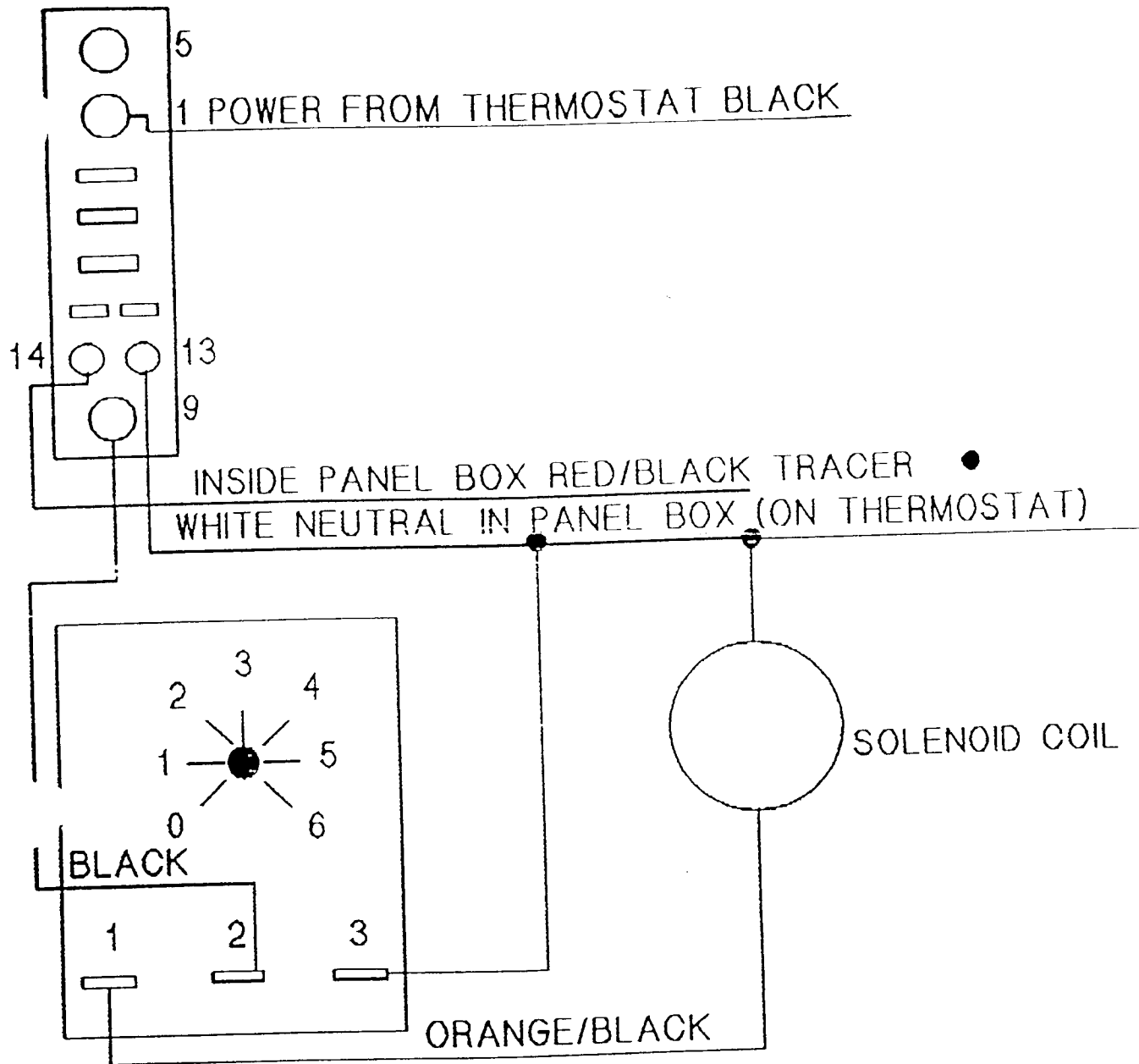
ELECTRICAL: RUN A PIECE OF 18-3 CABLE FROM THE ANTI-FREEZE VALVE AND TIE IT IN WITH THE REGULAR BRUSH VALVE. BLACK TO BLACK, WHITE TO WHITE, GREEN TO ORANGE AND BLACK TRACER FROM BRUSH ANTI-FREEZE TIMER IN PANEL BOX.

NEXT RUN A PIECE OF 18-2 FROM THERMOSTAT TO #1 PANEL BOX. CONNECT BLACK WIRE TO #1 ON RELAY AND WHITE WIRE TO NEUTRAL.

THE NEXT THING TO BE DONE IS TO TIE ALL THE PANEL BOXES TO THE THERMOSTAT WIRE. TO DO THIS SIMPLY RUN A PIECE OF 18 GAUGE WIRE FROM PANEL #1 TO PANEL #2, ETC. THIS WIRE IS CONNECTED TO THE BLACK WIRE COMING OFF THE #1 TERMINAL ON THE RELAY. THE RED WIRE WITH A BLACK TRACER IS TIED TOGETHER WITH THE RED-BLACK WIRE FROM THE METER.

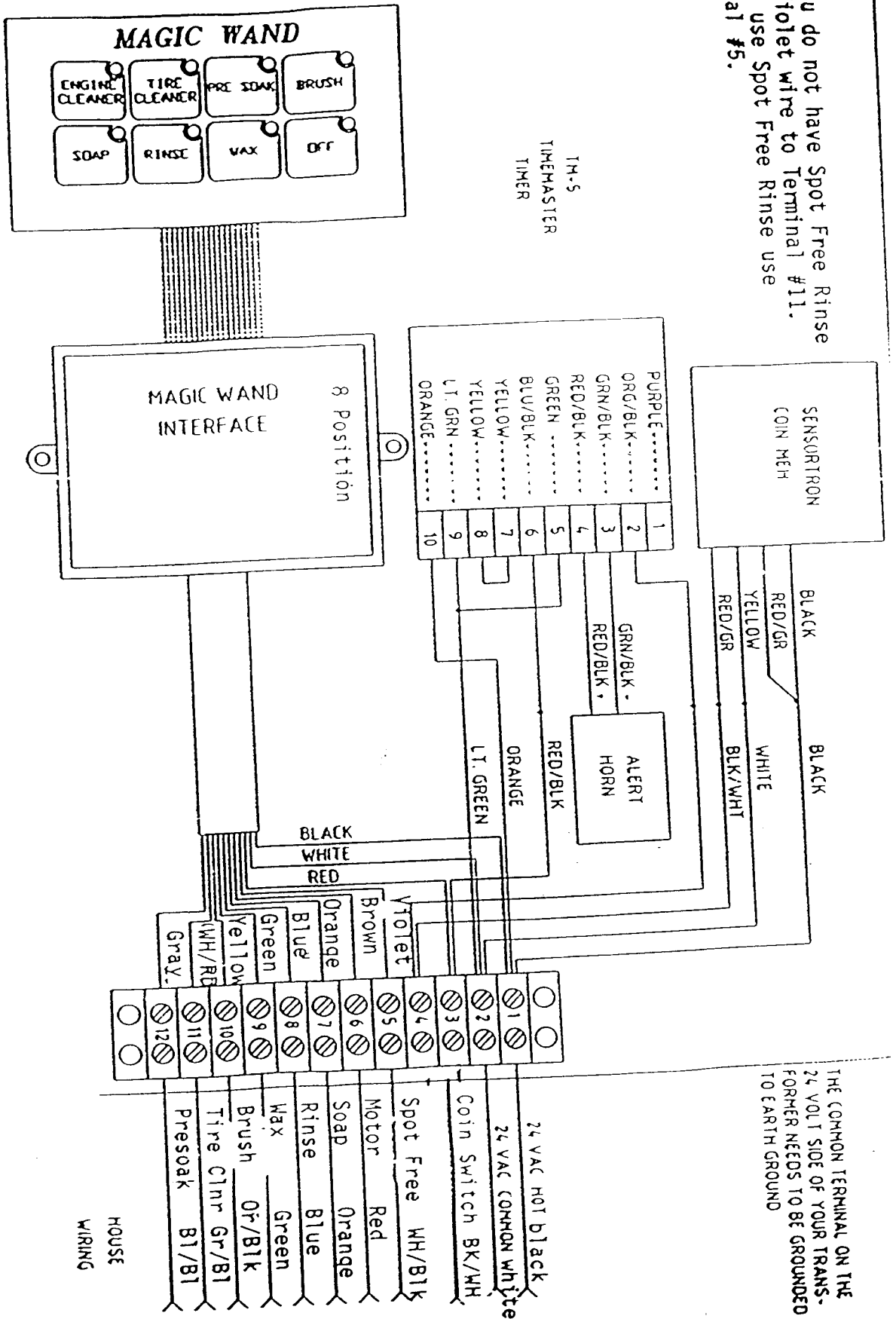


BRUSH ANTIFREEZE SYSTEM. RUN A PIECE OF 18-2 FROM SOLENOID ON BRUSH PLATE TO PANEL BOX WHITE TO NEUTRAL. BLACK TO ORANGE/BLACK

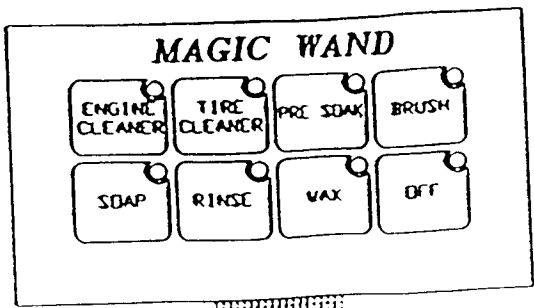


BRUSH ANTIFREEZE SYSTEM. RUN A PIECE OF 18-2 FROM SOLENOID ON BRUSH PLATE TO PANEL BOX WHITE TO NEUTRAL. BLACK TO ORANGE/BLACK

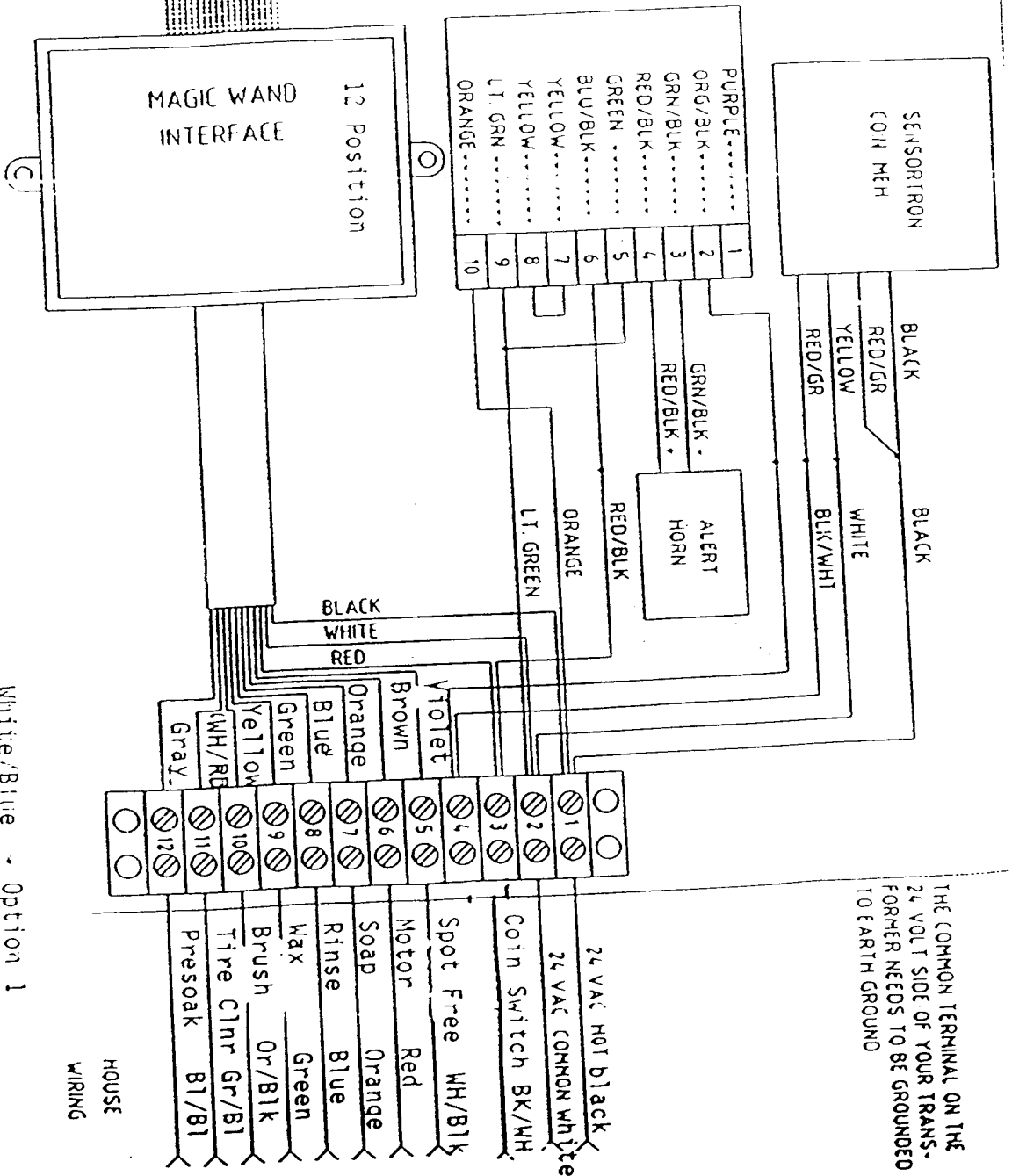
*If you do not have Spot Free Rinse
 move Violet wire to Terminal #11.
 If you use Spot Free Rinse use
 Terminal #5.



THE COMMON TERMINAL ON THE
 24 VOLT SIDE OF YOUR TRANS-
 FORMER NEEDS TO BE GROUNDED
 TO EARTH GROUND



TH-5
TIMEMASTER
TIMER



THE COMMON TERMINAL ON THE
24 VOLT SIDE OF YOUR TRANS-
FORMER NEEDS TO BE GROUNDED
TO EARTH GROUND

TROUBLE SHOOTING

ALWAYS UNPLUG UNIT AND BLOCK OFF BAY BEFORE SERVICING

1. **MOTOR DOES NOT RUN:** (a) check overload on motor starter, if kicked reset relay (b) Check main panel box for kicked breaker, reset if kicked © What is the pressure on reading on the gauge? Too much high pressure can over amp the motor over heat and kicks out overload until motor cools. If no breakers have been thrown and relay is in set position check voltage to top of starter. Voltage out of starter should be the same. If motor makes humming noise, or kicks breaker, remove motor and have tested. Replace if necessary. Single-phase motor could have a bad capacitor.
2. **NO HIGH PRESSURE:** (a) Check motor. (b) Check belt [may need to be adjusted] (c) check water supply.
3. **NO SOAP OR WAX COMING OUT OF WAND:** (a) first determine if it is only one bay or all bays (b) If no bays are getting chemical, check to be sure there is chemical in barrel, clean screen in tank. Check hydrominder. One quick way to see if this is the problem is to add about a cup of chemical to the tank. If product comes out in bay, check mixture. (c) If one bay is the problem, check Asco valve. Valve should have 24 volts with time on meter and rotary switch in soap/wax position. No voltage on valve, check for broken wire or rotary switch problem. Voltage on valve, use volt meter to test coil.
4. **NO POWER ON METER:** (a) check breaker in main panel
(b) check fuse in transformer
(c) check trans. 110 volts incoming power 24 volts out
5. **WON'T ACCEPT MONEY:** (a) check power to meter, should be 24 volt
(b) check to be sure coin is set correctly in switch
(c) Adjust sensitivity on coin switch. (More info. in meter section)
(d) Be sure coin is in set correctly in coin switch.
6. **ACCEPTS MONEY BUT WON'T COME ON:** (a) check, replace timer or coin switch (see diagram for coin switch) IMPORTANT NOTE: #6AND #7 MAY ALSO BE USED TO TROUBLE SHOOT VACUME. REMEMBER VACUUM IS 110 VOLT. USE METER TO CHECK VOLTAGE TO TIMER. POWER ON TIMER, CHECK LOAD HOT TO MOTOR. TIMER MAY NOT BE SENDING POWER OUT. IF TIMER HAS POWER ON LOAD HOT, BAD MOTOR COULD BE THE PROBLEM.
7. **COMES ON BUT WON'T SHUT OFF:** check, replace timer (see diagram for your timer)
8. **LED TIMER GOES DIM OR GOES BACK TO COINS TO START:** (a) check ground
9. **LED BLANK BUT BAY RUNS O.K.:** (a) replace timer
10. **NO WEEP:** (a) Check to be sure water is on, check regulator (not used on all valves)
(b) Check thermostat is it killing power to valve? (see diagram for wiring)
(c) Check needle valve on pumping unit, close and reopen
(d) If only one bay is the problem check 1/4" hex check valve on needle valve
11. **BAY WEEPS ALL THE TIME:** (a) if all bays weep check thermostat, valve is normally open so power must be applied to valve to shut off. If power is on a valve clicks check for trash that could have washed through? Turn off power and water, clean out valve. Check regulator if one was installed on your line. (b) If one bay is the problem check cold water rinse valve for trash or bad diaphragm or water jacket cuts in the valve. If valve is water cut

it must be replaced if not, a kit will fix the problem. (c) Is it hot water? Turn ball valve off under tank. Did water stop? Change 1/4" foot valve on pumping unit.

12. **PUMP HAS BAD VIBRATION:** (a) Vibrates worse on soap or wax. Check for air leak around soap/wax lines. Could be worn valve baskets, worn high pressure /low pressure seals, or low water supply. Check for worn valve baskets or trash in valves. Rebuild pump.

13. **NO LOW PRESSURE CHEMICAL IN ANY OF BAYS:** (a) This same principal is used for brush, tire cleaner, pre/soak. (b) Check air compressor if no Aro Pumps are working. Check breaker in panel box. (c) Go to back of pump, pull out on regulator cap. Relieve all air pressure (gauge should read zero) slowly bring pressure back up on pump. Pump should come back on line.

14. **NO LOW PRESSURE-IN ONE BAY:** (a) Check for lose or broken wire in meter (b) Check valve in equipment room. Valve or needle valve could be stopped up, or line could be clogged in bay. High-pressure check valve could be stopped up. If chemical is a foaming product be sure to check stainless steel wool in foam generator. (NOTE) Powder chemicals tend to clog more than liquid. (c) If temperature is or has been freezing check valve or line could be frozen.

15. **NO FOAM BRUSH IN ONE BAY:** Does bay have chemical at top of boom? If so take hose lose going out of brush boom to handle. If no chemical is present reefer back to #14. If foam comes out drill out inside of fitting on hose, it is probably rusted shut. Flush with plenty of water before reinstalling hose.

16. **TIRE CLEANER OR PRESOAK LEAKING OUT OF POP OF VALVE ON PUMP:** (a) Leaks all the time. Replace pop off valve. (b) Leaks only when bay is used on high pressure. Replace high-pressure check valve in that bay. **EXAMPLE: TIRE CLEANER PUMP POPS OFF WHEN BAY #1 IS ON HIGH PRESSURE.CHANGE HIGH PRESSURE CHECK VALVE ON TIRE CLEANER IN BAY #1. IF PRESOAK PUMP POPS OFF CHANGE CHECK VALVE ON PRESOAK SIDE AT 360 BOOM.**

17. **PUMP LEAKS AROUND FITTING OR FROM AIR EXHAUST:** (a) Retorque bolts (b) Still leaks. Check for rupture in diaphragm. Rebuild pump
REFER TO ARO PUMP OPERATOR'S MANUAL FOR MORE INFORMATION

18. **TANK OVER FILLING:** (a) Check 1" Cleveland/Water master valve in hot water tank. Check for trash in valve and replace if necessary. (b) Tank only overfills while weep is on. Check for trash in 1/4" foot valve on front of pumping unit. (c) Tank overfills in soap or wax compartment. Put bay on rinse pull soap or wax line off pumping unit. If water is coming out of valve check for trash inside Asco valve. If valve has been changed be sure soap comes in on 2 out on 1. The ASCO valve works as a check against the CAT pump.

IMPORTANT NOTE: NEVER PULL COIL OFF VALVE STEAM WITH POWER ON THAT VALVE. DOING SO WILL RESULT IN BURNING UP THE COIL, SHOCK OR BURN.

19. **WAND LEAKS UNDER LOW PRESSURE:** (a) Replace o ring in swivel or replace swivel. Replace handle. (b) Check wand barrel for tightness or crack.

20. **360-DEGREE BOOM LEAKS UNDER LOW PRESSURE:** (a) Replace boom swivel. (b) Check for lose hose or cracked brass.

21. **R.O. PROBLEMS, PLEASE REFER TO MANUAL ON SPOT FREE RINSE SYSTEM**

FUNCTION MONITOR

Below is a list of wire colors and the corresponding function: (please note there are two different connector types)

12-PIN CONNECTOR

PIN 1: ORANGE/WHITE STRIPE: SOAP
PIN 2: WHITE/ORANGE STRIPE: RINSE

PIN 3: GRAY/WHITE STRIPE: WAX
PIN 4: WHITE/GRAY STRIPE: FOAM BRUSH

PIN 5: RED/BLUE STRIPE: TIRE CLEANER
PIN 6: BLUE/RED STRIPE: PRESOAK

PIN 7: GREEN/WHITE STRIPE: SPOT FREE
PIN 8: WHITE/GREEN STRIPE: ENGINE CLEANER

PIN 9: BROWN/WHITE STRIPE: OPT 1
PIN 10: WHITE/BROWN STRIPE: OPT 2

PIN 11: BLUE/WHITE STRIPE: OPT 3
PIN 12: WHITE/BLUE STRIPE: WASH DOWN

3PIN CONNECTOR

PIN 1: BLACK/BLUE STRIPE: 24 VAC
PIN 2: RED/GRAY STRIPE: 24 VAC NET.
PIN 3: GREY/RED STRIPE: COIN SWITCH POSITIVE

TO ACTIVATE MONITOR, SIMPLY PRESS THE NUMBERS 1, 2, 3, 4 AND MODE BUTTON ON YOUR HAND HELD REMOTE.

To scroll through the functions, press the up and down arrows. To display time, press the TEST button. To display percentage of the total accumulated time, press the COIN button. To erase the display time or coin count press and hold TEST CYCLES until the display reads zeros.

If the number is preceded by the letter "T", the displayed number represents time in minutes. If the letter is "P", it represents the percent of total accumulated time. "C", is the total coin count for that bay

The WASH DOWN function display will show the number of wash down cycles for that bay.

TM-5 TIMEMASTER INSTRUCTIONS

1. CONNECT PIGTAIL ACCORDING TO WIRING DIAGRAM AND INSERT IN TIMEMASTER. DISPLAY WILL READ FLASHING 00:00. REMOVE THE TWO RUBBER PLUGS AT THE REAR OF THE TIMER.
2. DEPRESS MODE ONCE FOR "A" MENU. DEPRESS SET ONE TIME FOR EACH QUARTER. A :05-\$1.25 START PRICE.
3. DEPRESS MODE ONCE FOR "B" MENU. DEPRESS SET ONE TIME FOR EACH SECOND OF TIME. B: 30- 30 SECONDS PER CYCLE.
4. DEPRESS MODE ONCE FOR "C" MENU. DEPRESS SET ONE TIME FOR EACH MINUTE OF TIME. C4:30-4 MINUTES AND 30 SECONDS PER CYCLE.
5. DEPRESS MODE ONCE FOR "D" MENU. DEPRESS SET ONE TIME FOR EACH SECOND THE WARNING HORN WILL SOUND. D :05- 5 SECONDS OF WARNING HORN.
6. DEPRESS MODE ONCE FOR "E" MENU TO SET 4-DIGIT ACCESS CODE, SET WILL ADVANCE NUMBER. MODE WILL MOVE TO NEXT DIGIT. CONTINUE UNTIL ALL 4 DIGITS HAVE BEEN SET.
7. DEPRESS MODE ONCE FOR "F" MENU. DEPRESS SET ONE TIME FOR EACH MINUTE OF WASH DOWN TIME. F 3:00-3 MINUTES OF WASH DOWN TIME.
8. DEPRESS MODE ONCE TO PUT IN SERVICE.

HOW TO USE CONTROLLER

THE CONTROLLER CAN BE USED TO ACCESS INFORMATION, CONTROL THE TIMEMASTER, AND REPROGRAM THE TIMER. FOR ALL OPERATIONS THE 4-DIGIT ACCESS CODE MUST BE USED. FOR SECURITY REASONS, MENU "E" AND MENU "F" CANNOT BE CHANGED WITH THE CONTROLLER.

ACCESSING INFORMATION:

1. THE CONTROLLER OPERATES BY INFRARED WHICH REQUIRES LINE OF SIGHT TRANSMISSION. NORMAL RANGE IS 6 FEET. YOU MAY NOTICE THAT THE CONTROLLER WILL HAVE A GREATER RANGE DEPENDING ON SURROUNDING LIGHT. POINT TOP END OF CONTROLLER DIRECTLY AT THE TIMER DISPLAY. THE RECEIVER IS LOCATED BEHIND THE DISPLAY.
2. USING THE NUMBERED BUTTONS KEY IN THE ACCESS CODE PAUSING 1 SECOND BETWEEN NUMBERS. AFTER THE 4th DIGIT HAS BEEN ENTERED, THE HORN WILL BEEP TO ACKNOWLEDGE ACCESS. YOU HAVE 7 SECONDS TO OBTAIN INFORMATION. EACH TIME AN INFORMATION BUTTON IS DEPRESSED, THE ACCESS TIME IS EXTENDED 7 SECONDS. HOWEVER, IF SEVERAL BUTTONS ARE DEPRESSED IN SUCCESSION, THE ACCESS TIME WILL NOT ACCUMULATE. BY DEPRESSING "COIN" YOU WILL SEE THE AMOUNT OF QUARTERS THAT HAVE BEEN RECEIVED. RELEASE THE COIN BUTTON AND THE DISPLAY WILL RETURN TO THE AMOUNT TO START OR THE AMOUNT OF TIME THAT REMAINS IF THE TIMER IS IN OPERATION. IF THE COIN BUTTON IS HELD DOWN MORE THAN 10 SECONDS, THE COUNTER READING WILL BE ZEROED OUT.

WARNING: ACCESS TO THE TIMEMASTER CANNOT BE ACCOMPLISHED IF THE TIMEMASTER IS COUNTING DOWN WITH LESS THAN ONE MINUTE REMAINING.

3. THE "TEST CYCLE" BUTTON WILL SHOW HOW MANY WASH DOWN CYCLES HAVE BEEN USED. THIS IS NOT RESETTABLE. ACCESS CODE MUST BE USED.

CONTROLLING THE TIMEMASTER:

1. ENTER YOUR ACCESS CODE. DEPRESS THE "TEST" BUTTON. THE TIMEMASTER WILL PROVIDE THE PRESET AMOUNT OF WASH DOWN TIME. WHEN THE TEST CYCLE IS OPERATING, THE READOUT WILL DISPLAY "OFF". IF AT ANY TIME YOU DESIRE TO CLEAR THE TIME, DEPRESS THE "CANCEL" BUTTON.
2. IF THE TIMEMASTER IS IN THE COUNTDOWN OPERATION AND YOU DESIRE TO CLEAR THE TIME, ENTER YOUR ACCESS CODE AND DEPRESS THE "CANCEL" BUTTON.

REPROGRAMMING THE TIMEMASTER:

1. ENTER YOUR ACCESS CODE. DEPRESS "MODE" BUTTON. FLASHING 00:00 WILL APPEAR. DEPRESS MODE AGAIN AND MENU "A" WILL BE DISPLAYED. SET NUMBER OF QUARTERS BY PUSHING THE UP OR DOWN ARROWS.
2. DEPRESS MODE BUTTON ONCE. MENU "B" WILL APPEAR. AGAIN USE THE ARROW BUTTONS TO SET THE SECONDS.
3. DEPRESS CODE BUTTON ONCE. MENU "C" WILL APPEAR. USE THE ARROW BUTTONS TO SET THE MINUTES.
4. DEPRESS MODE BUTTON ONCE. MENU "D" WILL APPEAR. USE THE ARROW BUTTONS TO SET AMOUNT OF SECONDS FOR WARNING HORN.
5. DEPRESS MODE BUTTON ONCE. TIMEMASTER IS NOW READY FOR OPERATION.

caution

The TIMEMASTER is a high-tech, computer-controlled car wash timer. By reading and understanding the following installation and operation instructions before using the timer you can:

EASILY INSTALL,

QUICKLY learn how to use, and,

AVOID DAMAGE to the timer.

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Introduction

Thank you for purchasing the **TIMEMASTER**. This product has been designed and manufactured to provide years of trouble-free service. The **TIMEMASTER** housing is water-resistant but should not be exposed to direct high-pressure spray. The unit is not sensitive to normal heat range conditions and is protected against electromagnetic interference (EMI). While the **TIMEMASTER** is an extremely rugged device and the display has been designed for adequate protection during normal use, it is recommended that the timer be encased in a sturdy housing to protect it from physical abuse. The mounting plate should be designed to permit the timer to recoil as a unit if struck from the front.

Handle the **TIMEMASTER** as you would an expensive VCR or computer. While the unit has been designed for operation in a rugged environment, rough handling or accidental abuse could cause damage.

Overview

This manual describes the following four operations.

<i>mechanical installation</i>	How to physically install the timer.
<i>electrical installation</i>	How to connect the timer wiring.
<i>Initial setup</i>	How to select: <ol style="list-style-type: none">1. Number of quarters needed to start wash.2. Seconds provided for wash cycle.3. Minutes provided for wash cycle.4. Seconds of Alert Horn activation.5. Secret code (for remote control operation)6. Minutes provided for washdown cycle.
<i>remote control operation</i>	Number key operation Test / Washdown operation Quarter count operation Test count for number of washdowns Cancel / Mode / Arrow button operations

Limited One Year Warranty

Hi-Performance Wash Systems, Inc. warrants the **TIMEMASTER** car wash timer and controller for a period of one year (1 year) from the date of purchase against defects in materials and workmanship. This warranty covers normal commercial use and does not cover damage which occurs in shipment or failure which results from alteration, accident, misuse, abuse, improper installation or maintenance. Hi-Performance Wash Systems will, at their option, repair or replace the product. Service can be obtained during the warranty period by returning your unit to Hi-Performance Wash Systems at the address shown on the label attached to your timer.

If you ship the product, pack it carefully send it prepaid, **NOTE** the problem, include your phone number and return postage.

Features

- Digital display of cost to start the wash
- Digital display of balance due as quarters are added
- Digital display of time purchased
- Remote control of setup and adjustment features
- One minute time-remaining alert horn
- A flashing display during the last minute of time
- Variable alert horn duration (0 to 59 seconds)
- Battery backup of all settings in the event of a power failure
- A count of the number of coins deposited with a reset feature
- Test feature allows washdown of bay (with non-reset counter)
- A cancel feature allows the time remaining to be cleared
- The ability to work with different types of coin sensors

General Operation

The **TIMEMASTER** will time and control the functions associated with the operation of a single car wash bay.

Approaching the timer, a customer first sees the four-digit display which is showing the minimum dollar amount required to begin operation of the car wash.

As each quarter is deposited, the display reduces the amount shown by 25¢ until enough quarters have been added to start the car wash. After the required number of quarters have been inserted, the display begins to show the amount of time purchased. More quarters may be inserted at any time to secure additional wash time.

When more than three seconds elapse without the addition of another quarter, the display begins counting down in minutes and seconds. The displayed time continues to count down until one minute remains.

When the timer shows only one minute remaining, the horn will sound and the display will begin to flash. The display will continue to flash until there is no time remaining. If more quarters are added at any time during the car wash cycle the additional time will immediately appear on the display.

Installation

Installation of the TIMEMASTER involves physically mounting the unit and wiring the connector.

Hardware Installation

As described in the introduction, the preferred mounting arrangement for the TIMEMASTER timer encases the timer in a watertight and shockproof housing that reduces the possibility of physical abuse or damage to the timer.

Inside the coin box, mount the TIMEMASTER unit to a solid, (horizontally flat) mounting bracket welded to the front of the coin box, with a front-to-back slot which will accommodate the mounting stud on the bottom of the unit. Use the supplied wingnut to secure the timer to the bracket as shown in Figure 1. Tighten the wingnut only finger-tight as this will allow the timer to recoil to the rear if it is struck from the front.

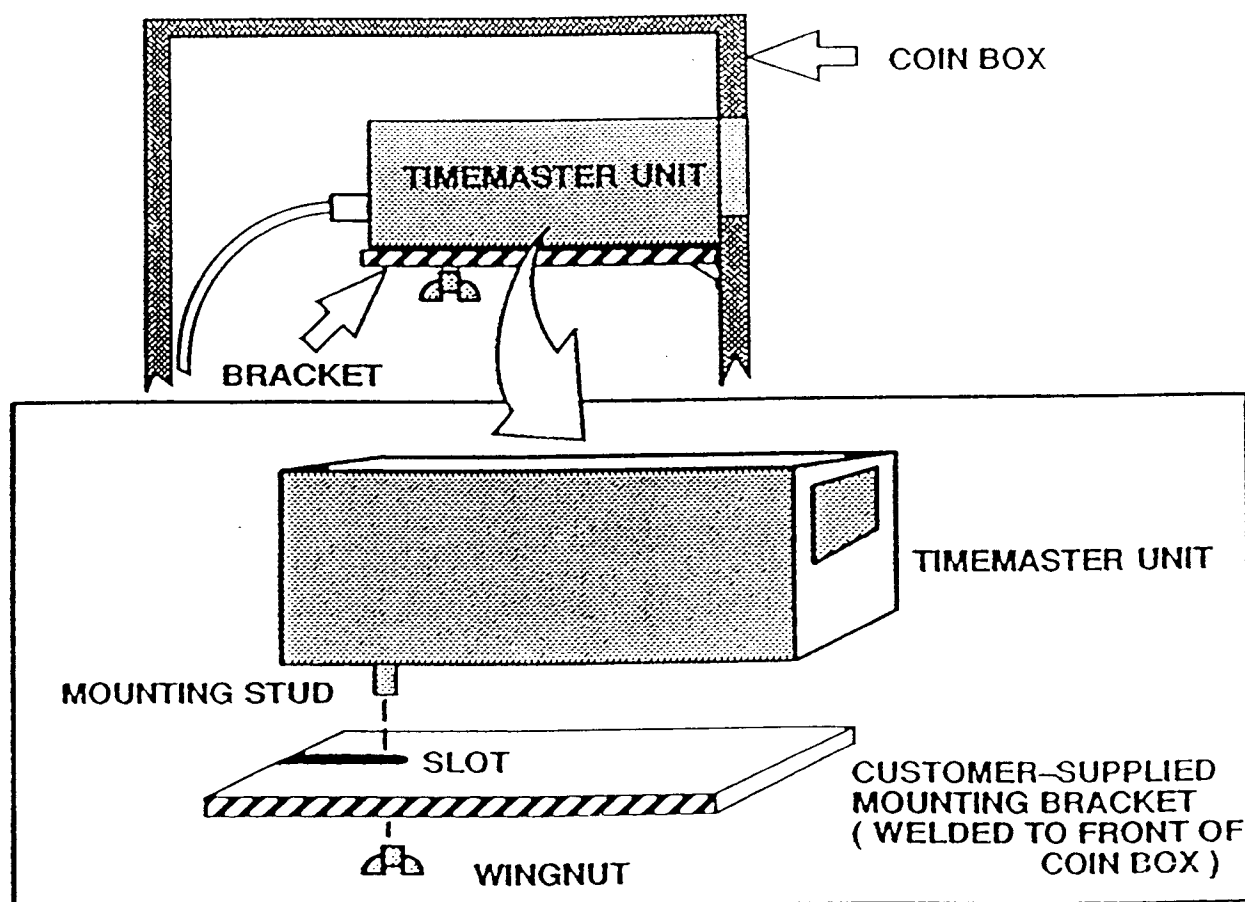


FIGURE 1

Electrical Installation

Provided with the **TIMEMASTER** is a prewired connector. These wires should be attached to the customer wiring as instructed on the following page. Improper connections could damage the timer. Determine the proper polarity of the connector before connecting the attached wiring. Refer to Figure 2 for pin numbering and polarity. As a safety precaution the pin numbers are also shown on a label on the back of the timer.

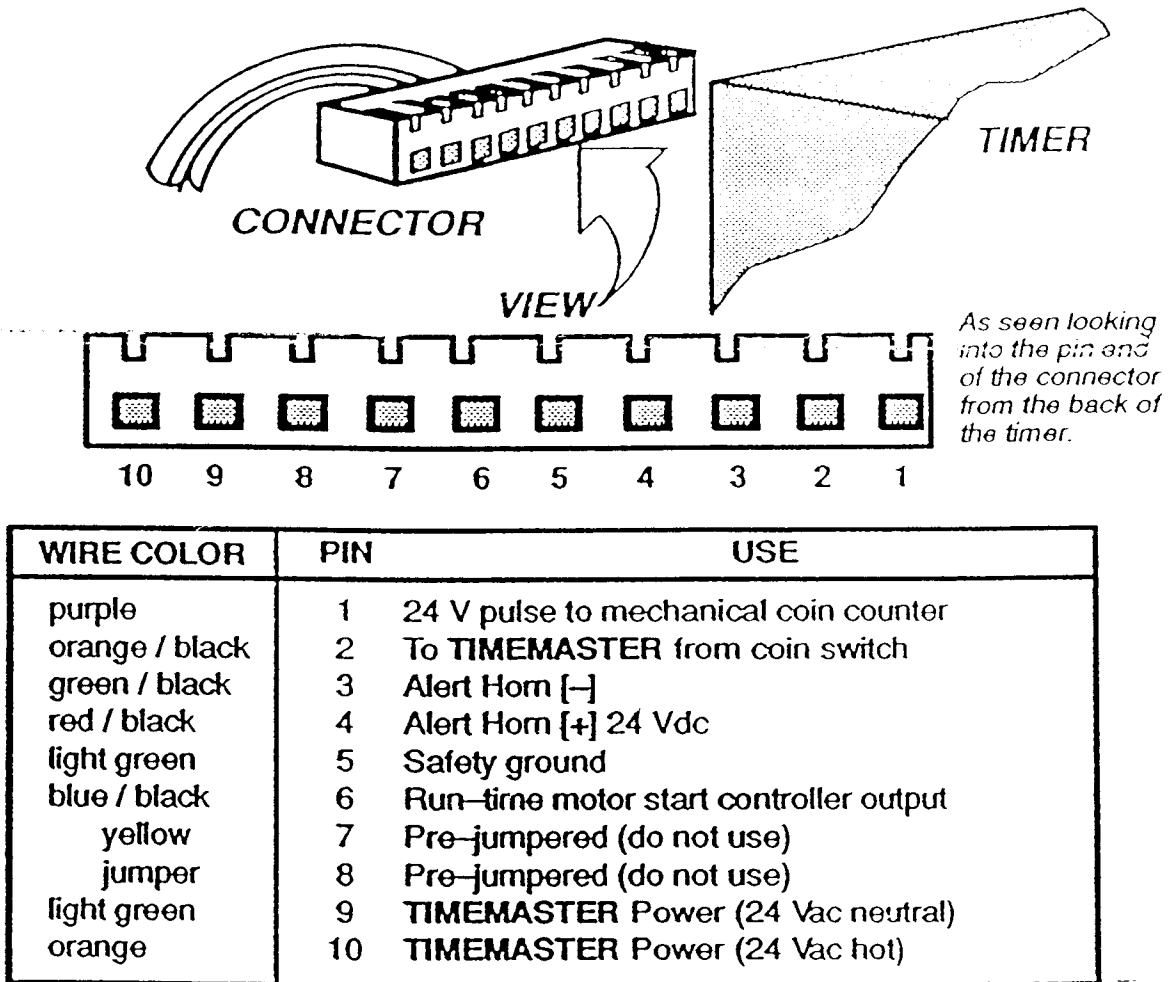


FIGURE 2

Carefully inspect the completed wiring before plugging the connector into the back of the **TIMEMASTER**. Plug connection is very snug. A small amount of lubricant (Vaseline or equivalent) will enable the plug to slip in easier.

Connector Installation

- | PIN | USE | | | | |
|------------|--|------------|---------|------------|--------|
| 1. | COIN COUNTER PULSE (output) See Figure 3.
An ac voltage pulse is output on pin 1, in response to an input ac or dc pulse on pin 2 from the mechanical coin counter, each time a coin is deposited. Normally this pin is connected to an external coin counter in the equipment room to provide an additional count. | | | | |
| 2. | COIN ACCEPTOR PULSE (Input) See Figure 3.
Applying an ac pulse or a positive dc pulse on this pin indicates to the timer that a coin has been deposited. Maximum ratings for this input pulse are: <table border="0" style="margin-left: 40px;"> <tr> <td>ac voltage</td> <td>32 V ac</td> </tr> <tr> <td>dc voltage</td> <td>30 Vdc</td> </tr> </table> | ac voltage | 32 V ac | dc voltage | 30 Vdc |
| ac voltage | 32 V ac | | | | |
| dc voltage | 30 Vdc | | | | |

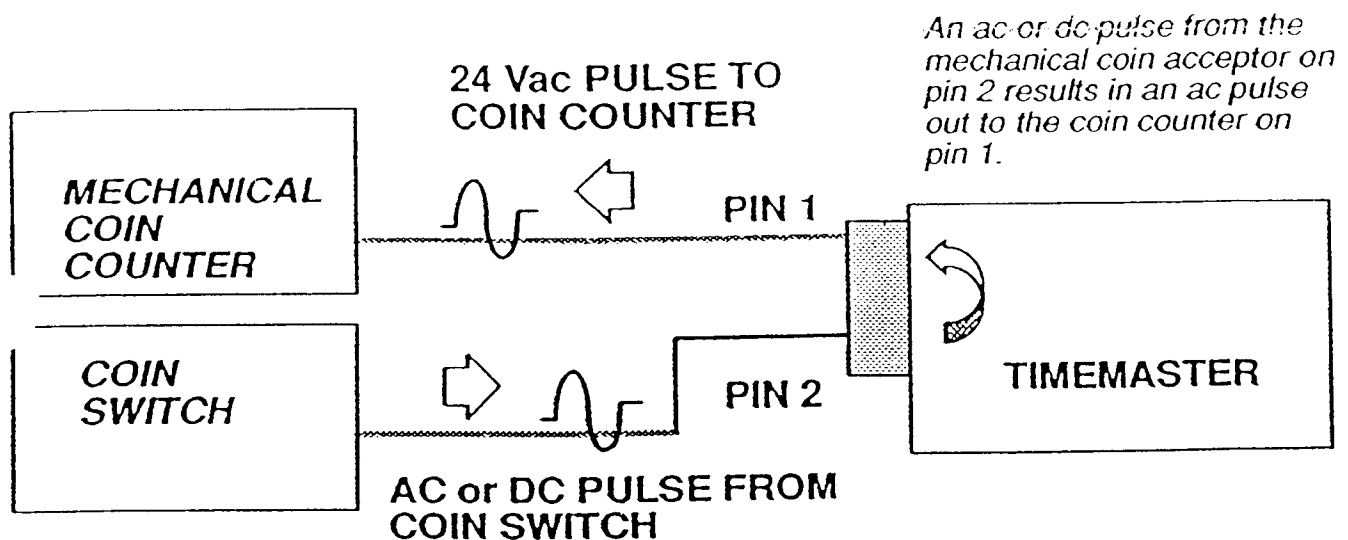


FIGURE 3

- ALERT HORN (-)**
 Pins 3 and 4 control the horn that sounds when only 1 minute of time remains. Maximum ratings for the horn should be:

dc voltage	30 Vdc
dc current	30 mA
- ALERT HORN (+)**
NOTE – Hi-Performance provides a 24 Vdc, 105 dB, waterproof alert horn for use with the TIMEMASTER timer. Use only this horn or an equivalent horn with the same specifications.

Connector Installation

PIN

USE

5. SAFETY GROUND

This pin must be connected to safety ground. This is the facility ground or earth ground. This is commonly a green wire connected to a water pipe which is directly embedded into the earth. The wire connection must be solid and electrically conductive. Remove any paint or coating that could prevent electrical conductivity. In addition to ensuring safety in the event of an electrical short-circuit, this ground also prevents problems caused by power line noise.

6. TIME CONTROLLED SWITCH OUTPUT

This pin represents an ac switch. This switch is used to control the bay equipment through the use of an ac relay. Pin 6 should be attached to one side of the relay coil. The other side of the relay coil should be connected to ac neutral. The **TIMEMASTER** is capable of driving the motor-start relay directly, however, due to the large variances in current requirements it is highly recommended that pin 6 be wired as shown in Figure 4. This method also protects **TIMEMASTER** against direct shorts.

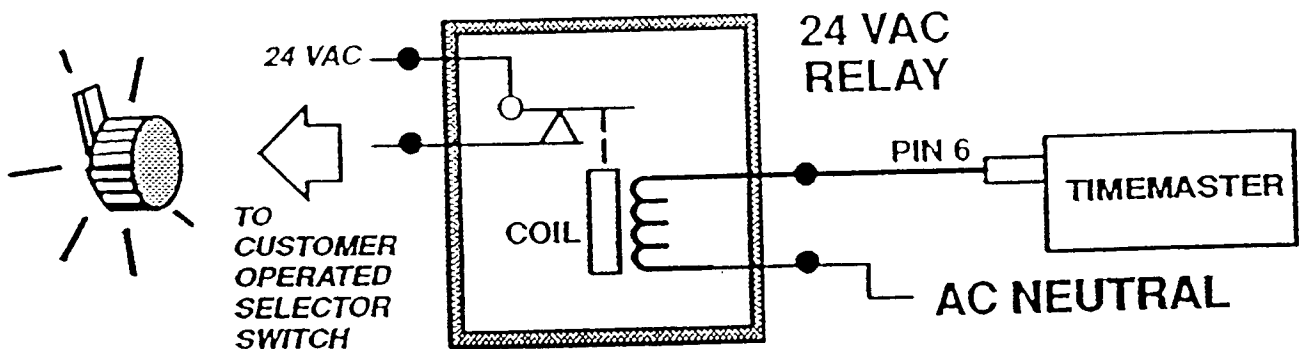


FIGURE 4

7. BATTERY BACKUP (no customer connection)

This pin is connected by a jumper wire to pin 8 to provide battery backup in the event of a power outage. When the connector is installed in the back of the **TIMEMASTER**, a power outage will not disturb the preset "customer selected setup options" (OPERATION section). Removal of the connector from the back of the timer will require the setup options to be re-entered. **NOTE**—if the **TIMEMASTER** is to be stored or transported, remove the connector from the back of the timer. This will prevent the battery from discharging unnecessarily. If the connector is installed again, it is imperative that the **TIMEMASTER** be programmed again. If it is not programmed and power is interrupted, the battery will be drained rapidly.

8. BATTERY BACKUP (no customer connection)

See pin 7.

Connector Installation

- | IN | USE |
|-------------------|---|
| 9. 24 Vac NEUTRAL | AC voltage to power the TIMEMASTER is applied to pins 9 and 10. Pin 9 will be referred to as "ac neutral" and pin 10 will be referred to as "ac hot". Maximum ratings for the voltage applied to these pins is:
ac voltage 30 V |
| 10. 24 Vac HOT | See pin 9. |

WIRING DIAGRAM (Refer to NOTE below)

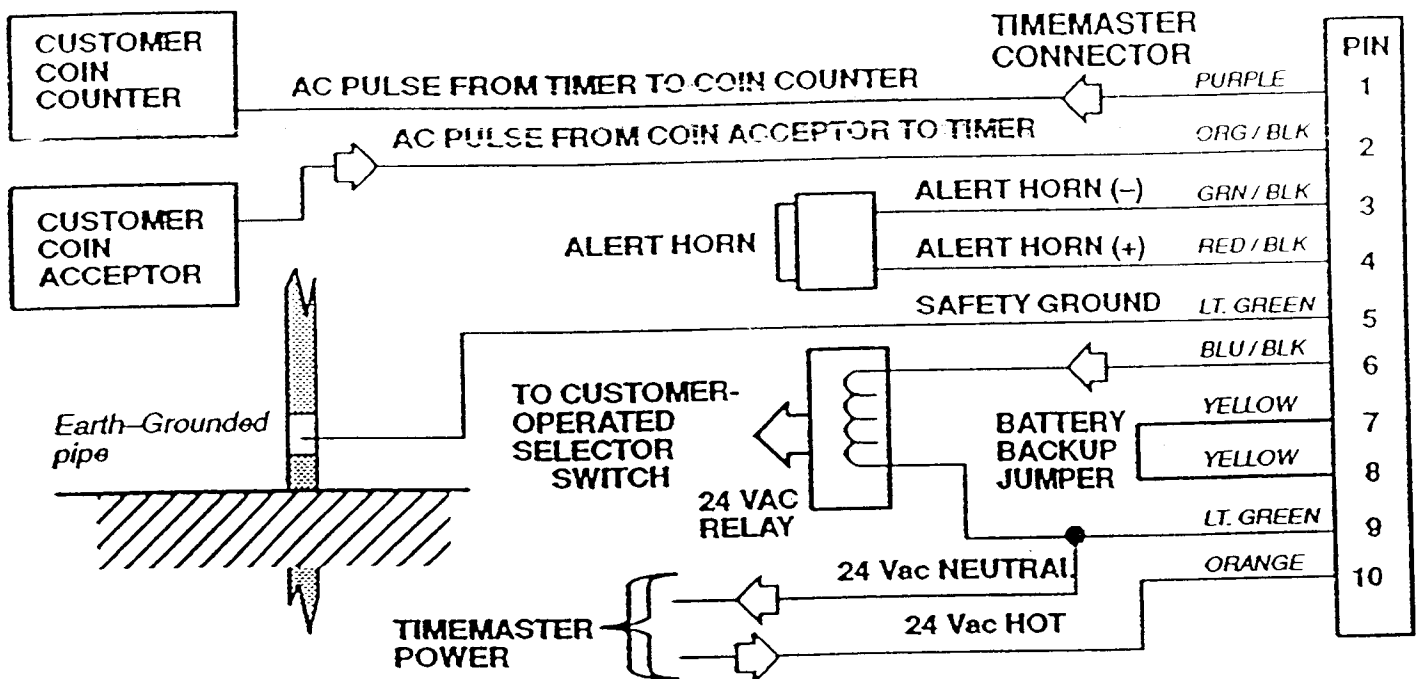


FIGURE 5

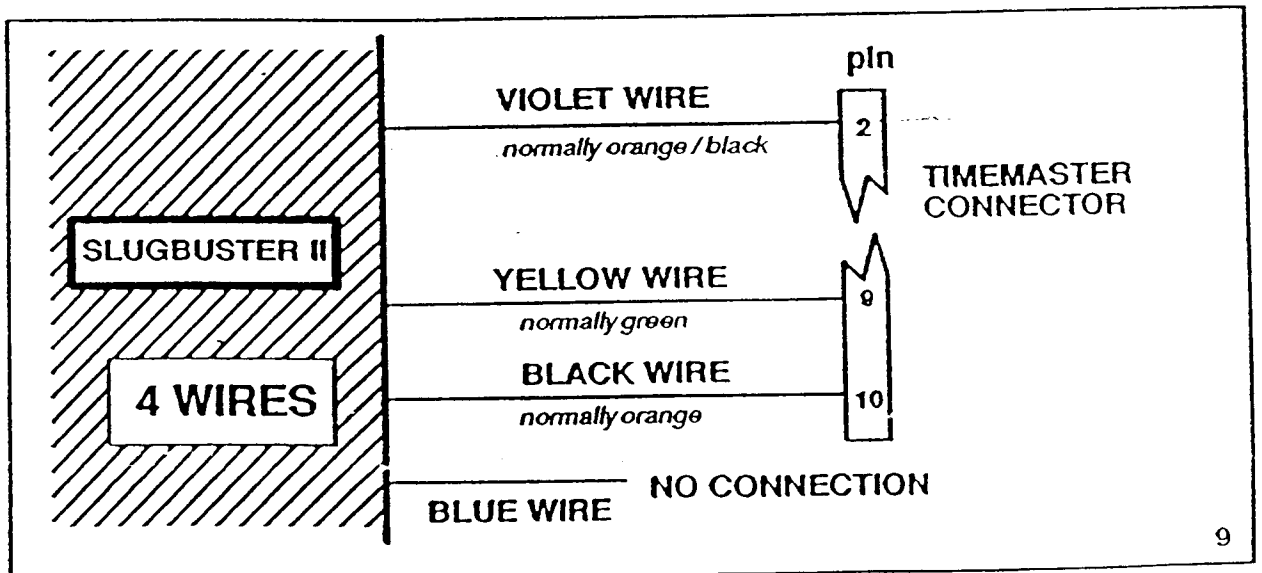
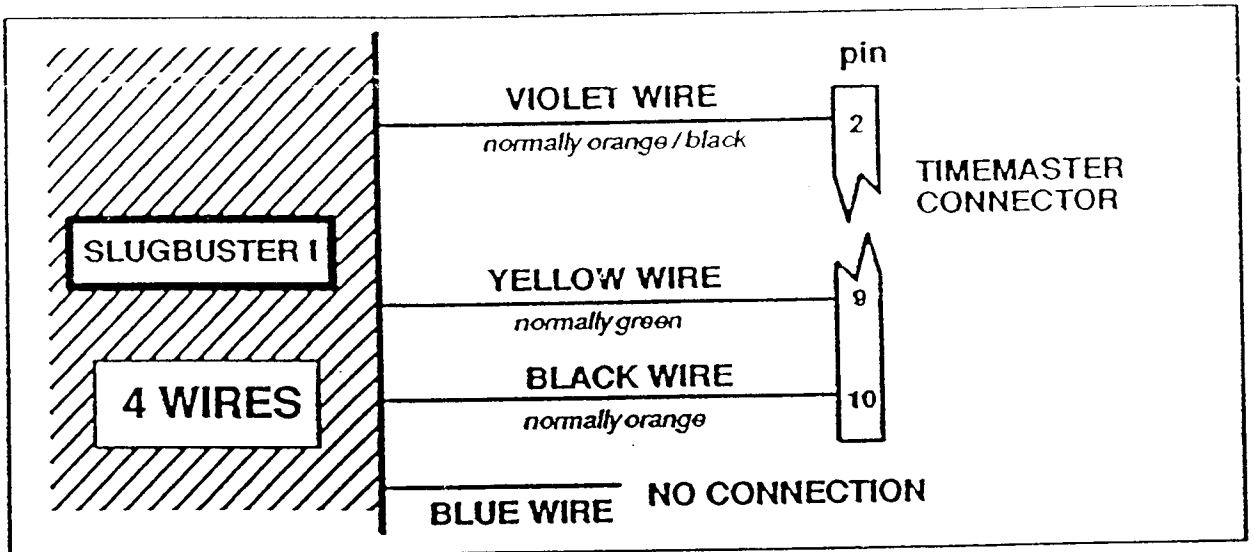
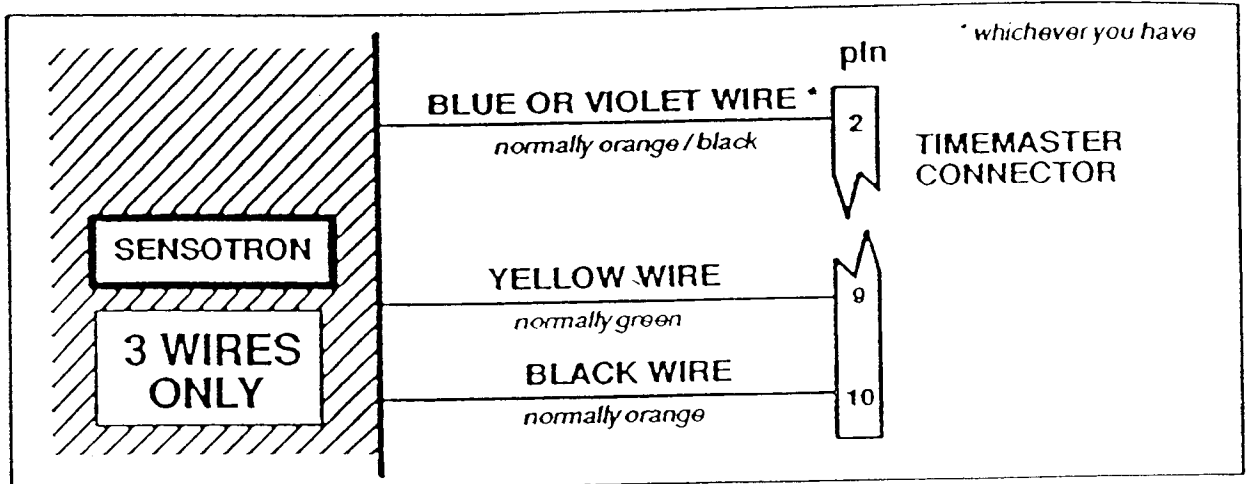
NOTE

If the **TIMEMASTER** is to be connected to one of the following three coin acceptors, use the wiring information shown on the next page to modify the information shown in FIGURE 5.

SENSOTRON

SLUGBUSTER I

SLUGBUSTER II



MODE and SET Switches

Locate the two small, round holes located in the back of the timer (see Figure 6). Located inside the housing, directly below the two holes, are pushbutton switches.

CAUTION

Use a plastic or wood tool to press these switches to prevent any possible short-circuit damage to the unit. An easy pressure will operate the pushbuttons. **DO NOT** depress them more 1/4 of an inch as damage to the timer could result. After setup, replace the plastic switch covers.

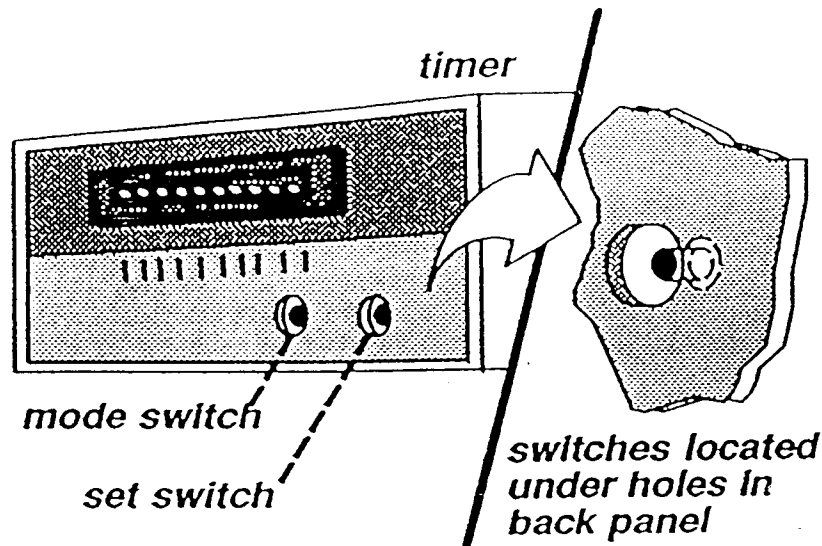


FIGURE 6

Initial Setup – description

These instructions are to be used only when the timer is first installed. After the initial setup, the remote control operating instructions should be used.

The **MODE** switch, located in the back of the timer, cycles the timer through six steps of settings. See Figure 7.

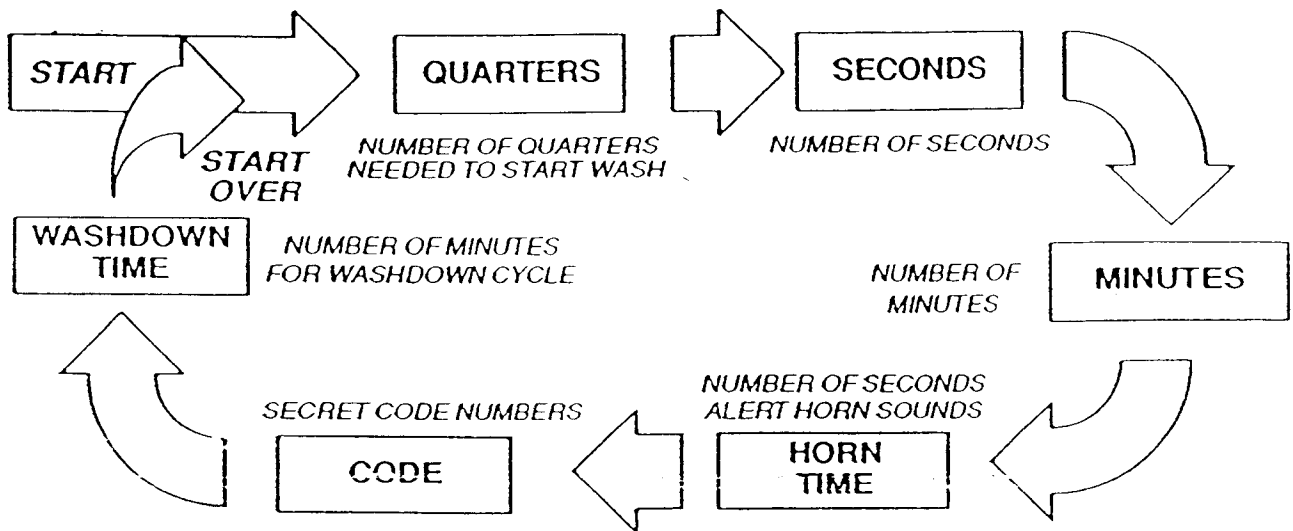


FIGURE 7

After the **MODE** switch moves to the option step, the **SET** switch causes the number shown on the display to increase by one unit value. If the **SET** switch is held depressed for one to two seconds, the count will increase very rapidly. If you go beyond the number you want, continue to hold the **SET** switch depressed until the display counts to the maximum value allowed and starts over again.

Initial Setup – operation

When all the wiring has been connected properly, and the connector is plugged into the back of the timer, then turn on the power and the display will start flashing "00:00". This means that the *Initial setup options* must be entered to begin proper operation.

(**WARNING** : If for any reason power is shut down before the **TIMEMASTER** is programmed, the connector must be disconnected from the timer to prevent draining of the battery.)

NOTE

Whenever the connector in the back of the timer is removed and re-inserted. **ALL** initial setup options will have to be re-programmed.

Initial Setup Table

STEP	ACTION	INITIAL SETUP	FLASHING DISPLAY SHOWS
START			00:00
1	NUMBER OF QUARTERS NEEDED TO START WASH [1 - 20]		
	<i>example</i>	To set wash start price of \$ 1.25	
	<i>DO</i>	Press MODE switch once	A :01
	<i>DO</i>	Press SET switch 4 times	A :05
2	NUMBER OF SECONDS (IF ANY) PER WASH [0 - 59]		
	<i>example</i>	To set 30 seconds	
	<i>DO</i>	Press MODE switch once	b :00
	<i>DO</i>	Press SET switch 30 times (or hold switch down)	b :30
3	NUMBER OF MINUTES PER WASH [0 - 9]		
	<i>example</i>	To set 4 minutes (total will be 4 min, 30 sec)	
	<i>DO</i>	Press MODE switch once	C0:30
	<i>DO</i>	Press SET switch four times	C4:30
4	SECONDS OF ALERT HORN [0 - 59]		
	<i>example</i>	To set 5 seconds of alert tone	
	<i>DO</i>	Press MODE switch once	d :00
	<i>DO</i>	Press SET switch five times	d :05

STEP	ACTION	INITIAL SETUP	FLASHING DISPLAY SHOWS
Initial setup continued			d :05
5	4-DIGIT ACCESS CODE (FOR REMOTE CONTROL)		
	<i>example</i>	To set an access code of 2-4-6-8	
	DO	Press MODE switch once	0E:EE
	DO	Press SET switch 2 times	2E:EE
	DO	Press MODE switch once	20:EE
	DO	Press SET switch 4 times	24:EE
	DO	Press MODE switch once	24:0E
	DO	Press SET switch 6 times	24:6E
	DO	Press MODE switch once	24:60
	DO	Press SET switch 8 times	24:68
6	NUMBER OF MINUTES OF WASHDOWN CYCLE [0 - 9]		
	<i>example</i>	Set a 2 minute time for the bay washdown cycle	
	DO	Press MODE switch once	F0:00
	DO	Press SET switch 2 times	F2:00
INITIAL SETUP IS COMPLETED			
	DO	Press MODE switch once	\$ 1.25

TIMEMASTER IS NOW READY FOR USE

Insert the two plastic plugs (supplied with timer) in the back of the timer. The plugs must be in place to seal the timer. After completing the *Initial setup* the optional controller may be used to control the timer.

NOTE

To **CHANGE** or **RESET** the access code or wash down time, remove the plugs covering the **MODE** and **SET** switches. Depress the **MODE** switch for 6 – 8 seconds until a 'flashing' **00:00** appears. Reprogram with the new information and replace the plugs to seal the timer.

Remote Control Operation

The remote control unit will allow you to control the operation of the **TIMEMASTER** up to a distance of five feet. To control the timer you enter the access code numbers on the number keys of the remote control while pointing the front of the remote control unit at the face of the timer display. See Figures 8 and 9. When the timer accepts the access code you will hear a short "beep" from the alert horn. If a "beep" is not heard, depress cancel (**CNCL**) and then re-enter the code slowly. You **MUST** press a function button within 7 seconds or you will have to re-enter the access code.

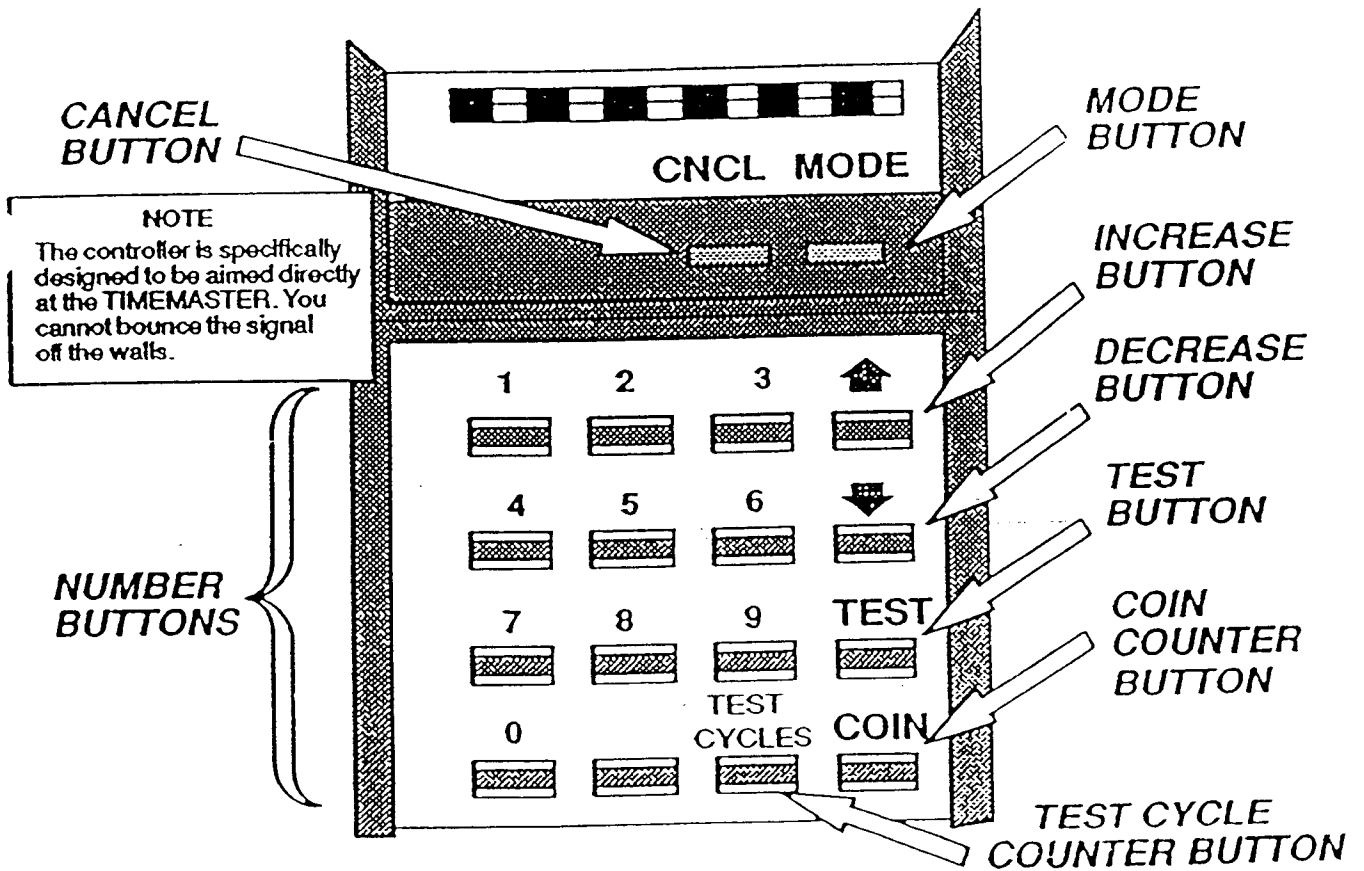


FIGURE 8

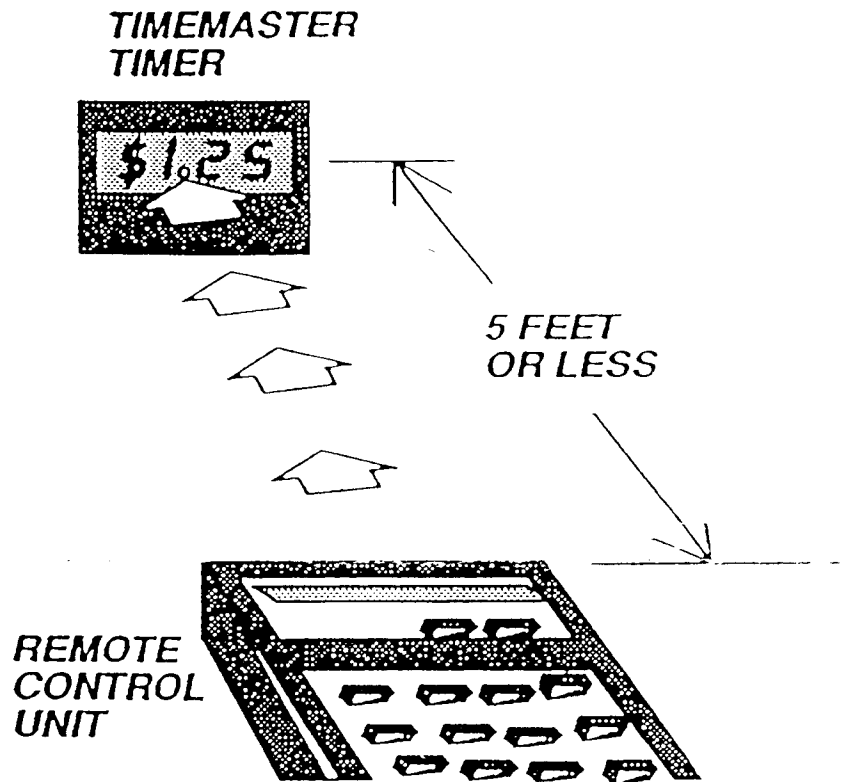


FIGURE 9

Remote Control Functions

TEST – Enter your access code and push the *TEST* button to begin a washdown cycle. The washdown cycle will run for the amount of minutes you programmed in step 6 of the *Initial setup* procedure. (In the example you set the washdown cycle for 2 minutes.) During the washdown cycle you can cancel the remaining time by pushing the *CNCL* (cancel) button. During the washdown cycle the display will show *0:FF*. (Wash down cycles cannot be accumulated.)

COIN COUNT – Enter your access code, depress and hold the *COIN* button. The display will show the number of coins that have been inserted. If you hold this button down for more than 10 seconds you will reset this counter to zero. This counter can be used except during the last minute of time remaining.

TEST COUNT – Enter your access code, depress and hold the *TEST CYCLES* button. The display will show how many washdown cycles have been used. This counter cannot be reset unless you remove the connector from the back of the timer. This counter can be used except during the last minute of time remaining.

Remote Control Functions (continued)

CANCEL BUTTON – You may cancel a washdown cycle by depressing this switch. If you desire cancel the time remaining, enter the access code and press the **CNCL** (cancel) button.

REMOTE CONTROL REPROGRAMMING OF THE TIMER – Enter your access number and push the **MODE** button. The display will flash **00:00**.

NOTES

*When entering function commands or access code numbers on the remote control, press each button firmly and release it completely before pressing the next button. The infra-red communication system is designed to prevent improper use and sending the commands too quickly (by pressing buttons too quickly) can cause the system to reject the signal. If you do not get a "beep" response when you enter your access code, press **CNCL** and re-enter the access code.*

In the following steps, holding the selected button down will cause the number being changed to increase or decrease very rapidly.

Number of Coins Needed to Start the Wash

Press the **MODE** switch once. The display shows **A :01**. You may select any number between 1 and 20 by using the **Increase** button (up arrow), or the **decrease** button (down arrow).

Wash Seconds

Press the **MODE** switch once. The display shows **b :00**. You may select any number of seconds between 0 and 59.

Wash Minutes

Press the **MODE** switch once. The display shows **C0:XX**. (XX is the number of seconds that you set in the previous step). You may select any number of minutes between 0 and 9.

By using the values entered in the last two steps, the timer calculates the proper amount of time to give a customer for each additional quarter he inserts.

Alert Horn

Alert Horn – Press the **MODE** switch once. The display shows **d :00**. You may select any number of seconds between 0 and 59. When one minute of time remains,

the alert horn will sound. This setting determines how long the horn will sound.

NUMBER OF COINS

Depress the **MODE** switch once. The amount to start wash cycle will show in the window. Allow 7 seconds for the **TIMEMASTER** to reset from programming before adding the coins.

TIMEMASTER has now been reprogrammed and is again ready for customer use. Note that you cannot change your access code or the time allowed for a washdown cycle by using the remote control.

Troubleshooting

There are no customer repairable parts inside the timer. If the remote control functions act erratic, first replace the batteries in the remote control unit. If that does not eliminate the problem, shut off the power source, then unplug the connector from the back of the timer for at least 30 seconds, re-insert the connector and restore power to the unit to clear the programming. You must reprogram the initial setup functions after removing and replacing the connector.

PARAPLATE TIMER

INSTALLATION

1. MOUNT TIMER.
2. MAKE ELECTRICAL CONNECTIONS.
 - 110 VOLT-----TERMINAL #1 ONLY
 - 24 VOLT-----TERMINAL #1 & #2
 - NEUTRAL-----TERMINAL #3 (FOR 110 OR 24V)
 - SAFETY GROUND----TERMINAL #4 (FOR 110 V)
 - LOAD LO-NEUTRAL--TERMINAL #5
 - LOAD HI-OUTPUT---TERMINAL #6 (FOR 110 OR 24V)
 - COIN SWITCH-----TERMINAL #7 & #8 (LEADS NEED TO RUN FROM EACH OF THESE TO THE TERMINALS ON THE COIN SWITCH LOCATED ON THE COIN MECHANISM.)

SETTING TIME AND COINS

TIME SETTING IS DONE BY USING THE TOP SET OF SWITCHES. THESE SWITCHES ARE NUMBERED 1 THRU 12, BUT THESE NUMBERS HAVE NOTHING TO DO WITH THE TIME. THE NUMBERS FOR SETTING THE TIME ARE THE WHITE NUMBERS BESIDE THE SWITCH. THESE NUMBERS REPRESENT SECONDS, NOT MINUTES. ALSO THIS IS THE AMOUNT OF TIME PER COIN. FOR EXAMPLE: IF YOU SET THE SWITCH FOR 32 SECONDS AND SET THE #2 COIN SWITCH, YOU WOULD GET A TOTAL TIME OF 64 SECONDS. COIN SETTING IS DONE IN THE SAME MANNER. THE NUMBER OF COINS IS INDICATED BY THE WHITE NUMBERS BESIDE THE BOTTOM SET OF SWITCHES. THERE IS A CANCEL BUTTON LOCATED JUST BELOW THE TOP SET OF SWITCHES. THIS BUTTON CANCELS ALL TIME ACCUMULATED.

ALWAYS PRESS CANCEL BUTTON AFTER ANY CHANGES ARE MADE IN TIME OR COIN SWITCHES.

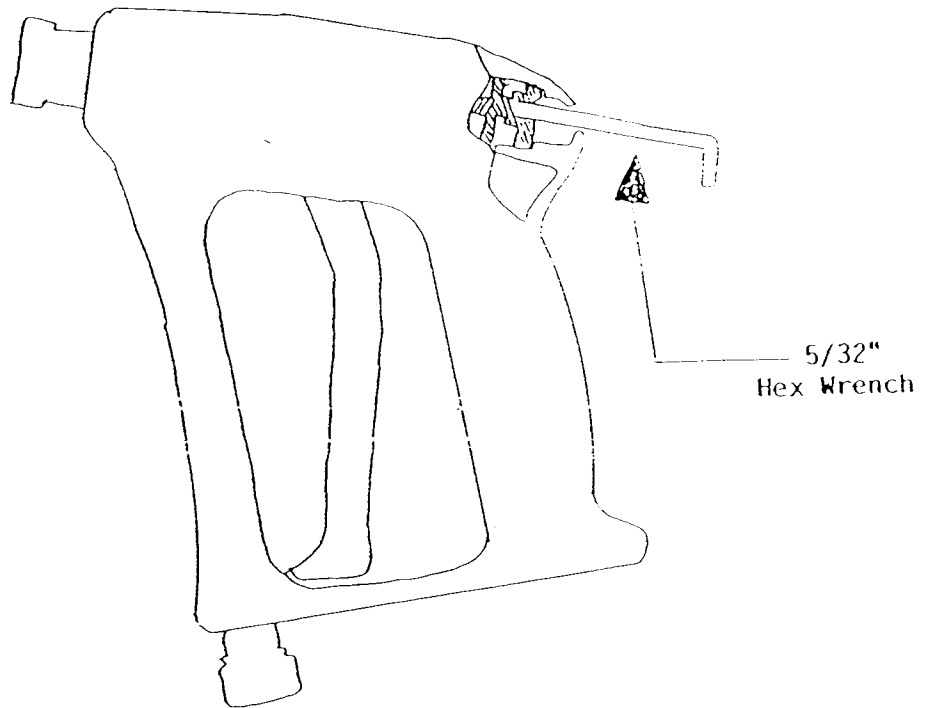
PARAPLATE TIMER

<input type="text"/>	TIME IN SECONDS PER COIN	<table border="1"><tr><td data-bbox="1078 789 1167 842">1</td></tr><tr><td data-bbox="1078 842 1167 894">2</td></tr><tr><td data-bbox="1078 894 1167 947">3</td></tr><tr><td data-bbox="1078 947 1167 999">4</td></tr><tr><td data-bbox="1078 999 1167 1052">5</td></tr><tr><td data-bbox="1078 1052 1167 1104">6</td></tr><tr><td data-bbox="1078 1104 1167 1157">7</td></tr><tr><td data-bbox="1078 1157 1167 1173">8</td></tr></table>	1	2	3	4	5	6	7	8
1										
2										
3										
4										
5										
6										
7										
8										
<input type="text"/>	NUMBER OF COINS									

INSTRUCTIONS FOR BRUSH SYSTEM WITH AIR MANIFOLD

1. UNCRATE UNIT.
2. INSTALL BOOMS.
3. INSTALL BRUSH HANGERS.
4. INSTALL BRUSH SIGNS.
5. RUN CLEAN 1/4" HOSE FROM MANIFOLD ON MAIN UNIT TO BRUSH BOOM.
6. INSTALL TOGGLE SWITCH AND BRUSH WAND DECAL ON METER.
7. WIRE TOP AND BOTTOM SOLENOIDS PARALLEL AND TIE TO METER LEADS.
8. PLACE HYDROMINDER ON MAIN UNIT AND ADJUST FLOAT LEVEL.
9. AFTER HYDROMINDER HAS FILLED MAIN UNIT WITH SOAP SOLUTION, PLUG IN 110V A.C. CORD AND CHECK PRESSURE ON GAUGE UNDER BLUE TANK ON PUMP TO BE SURE CUT-OUT PRESSURE IS AT LEAST 50 PSI.
(CAUTION: IF AFTER 2 MINUTES RUNNING TIME, PUMP HAS NOT CUT OFF, UNPLUG 110V AC. CORD AND REMOVE LARGE BLUE TANK. FILL PUMP WITH SOAP SOLUTION OR WATER. REPLACE BLUE TANK AND PLUG 110V A.C. CORD IN. PUMP SHOULD PRIME IN 2 MINUTES OR LESS.)
10. INSTALL AIR LINE TO MANIFOLD ON MAIN UNIT-TOP REGULATOR.
11. PLACE 18' WIRE BRAID HOSE ON BOOM AND INSTALL BRUSH HANDLE AND AND BRUSH HEAD.
12. TURN ON AT LEAST ONE BAY OF EQUIPMENT AND ADJUST VALVES ON MANIFOLD. OPEN BOTTOM VALVE (CHEMICAL OR SOAP SOLUTION LINE) ABOUT 1½ TO 2 TURNS. ADJUST REGULATORS TO EQUAL AMOUNTS OF PRESSURE APPROXIMATELY 22 TO 24 PSI ON AIR AND CHEMICAL INLET REGULATORS.
13. ADJUST TOP VALVE ON MANIFOLD BARELY OPEN ABOUT 1/16 TO 1/8 TURN.
14. CHECK RESULTS AFTER ONE MINUTE.
15. TO DRY FOAM, ADD MORE AIR. TO MAKE FOAM WET, ADJUST FOR LESS AIR. CHEMICAL ADJUSTMENT WILL REMAIN ABOUT 1½ TO 2 TURNS OPEN AT ALL TIMES. AIR IS YOUR MAIN CONTROL OVER FOAM CONSISTENCY. AIR MAY ONLY NEED AS MUCH AS 1/16 TURN TO MAKE MAJOR CHANGE IN FOAM CONSISTENCY. ALWAYS ALLOW AT LEAST ONE MINUTE BETWEEN NEW ADJUSTMENTS TO BE SURE OF SATISFACTORY CHANGE IN FOAM.

IMPORTANT: TRIGGER TENSION ADJUSTMENT INSTRUCTIONS

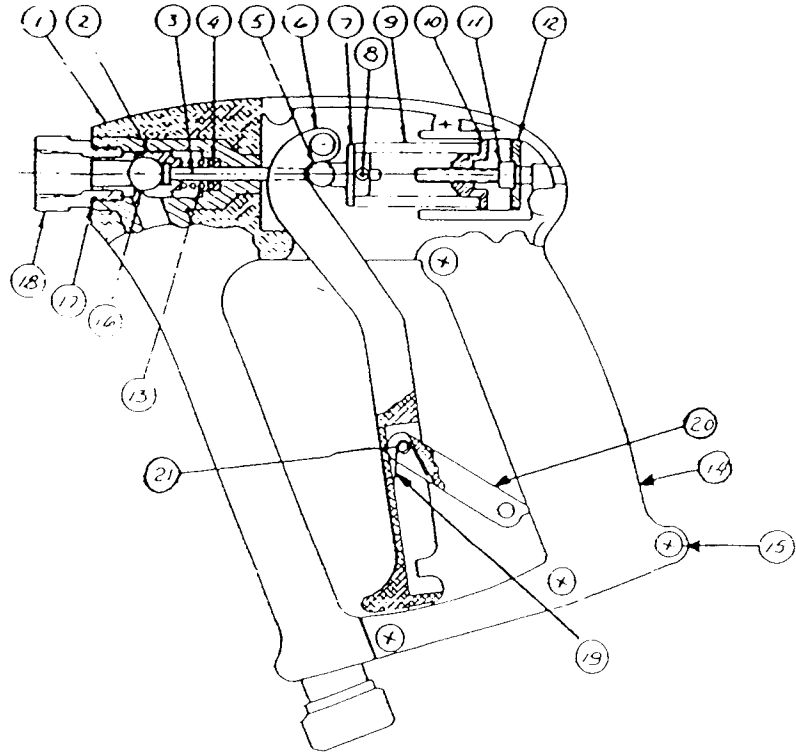


The spring tension adjusted into all spray guns prior to shipment is suitable for systems in the 1000 to 1200 psi range. If you plan to install model UST in a higher pressure system, you must apply added spring tension by inserting the hex wrench and turning COUNTER CLOCKWISE.

Trigger Tension should always be adjusted so that trigger responds instantly and closes when released. If there is the slightest hesitation, add tension.

PRESSURE LOSS: 40 psi at 5 GPM.

FORCE REQUIRED TO HOLD TRIPPER OPEN IS 5 LBS. AT 1000 PSI.



<u>ITEM</u>	<u>NO. PER UNIT</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	1	50209	CASING
2*	1	**	RETAINER BALL
3*	1	40060	ROD
4*	1	35020	SEAL
5	1	50211	PIVOT
6	1	50210	TRIGGER
7	1	50212	RETAINER NUT
8	1	36006	SET SCREW
9	1	31001	SPRING
10	1	50213	NUT
11	1	36007	SOCKET HEAD SCREW
12	1	50214	RETAINER
13*	1	31015	COMPRESSION SPRING
14	1	50159	COVER
15	8	36011	SCREW
16*	1	**	BALL
17*	1	35028	"O" RING
18	1	41003	NUT W/SST INSERT 1/4" (SEE 22,23,24)
19	1	34000	RETRACTOR SPRING
20	1	50160	GUN LATCH
21	1	38023	LATCH PIN
22	1	41004	SAME AS ITEM 18 EXCEPT WITH WEEP
23	1	41005	NUT W/SST INSERT 3/8"
24	1	41006	SAME AS 23 EXCEPT W/1

*Recommend Spare Parts for routine overhaul and maintenance shall consist of item 2,3,4,13,16 & 17. Item 2,3,4,13 & 16 are supplied as an assembly. Order Kit #40
 **Price for item 3, Assembly #40060 includes items 2 & 16, as items 2,3,&16 are permanently attached and can never be supplied individually.

Stage 2[®]

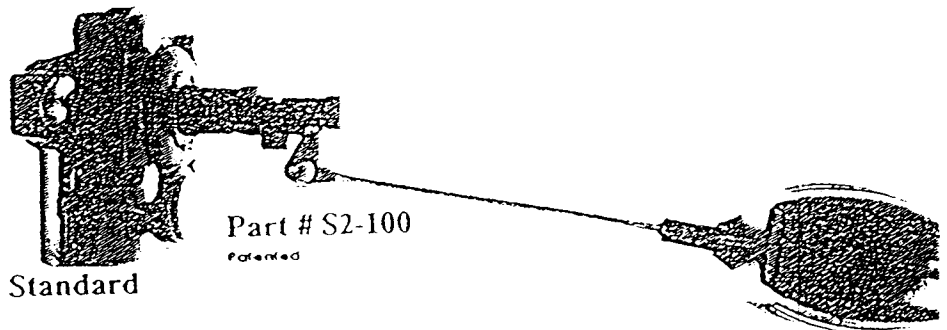
Pilot Operated Float Valve

Features:

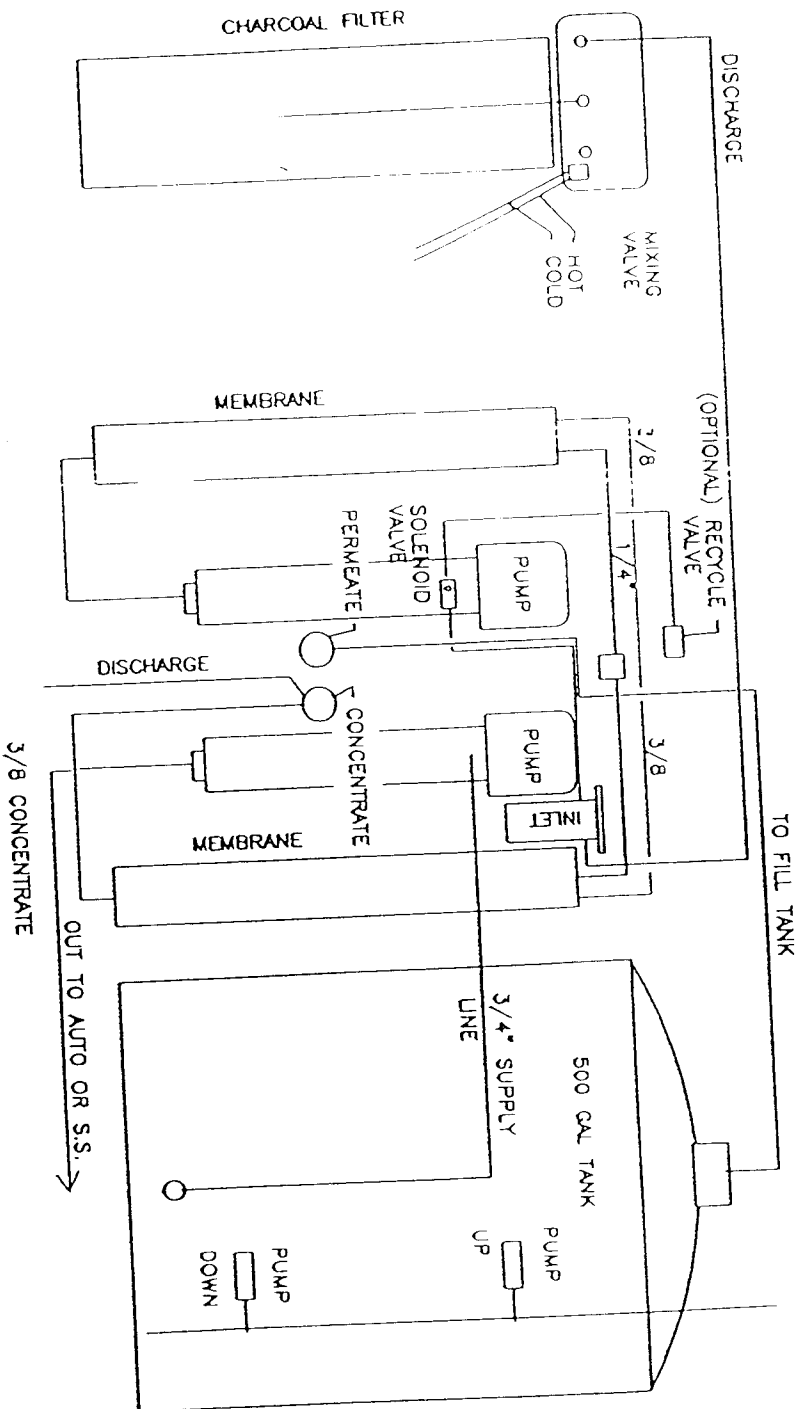
- Stage 2 Float Valves work with water pressure. Operating pressure range from 5 - 110 psi. with flow rates to to 250 GPM.
- Compact Design - a 2 1/2" float is all that is required to shut off our 1" valve. No bulky 8", or 10" or 12" floats, or long leverage arms are required. Will operate in 1/8 of the space as a standard mechanical valve of comparable inlet diameter.
- Positive Shutoff - Unique design prevents chatter, water hammer and blow by.
- Reduced Wear - Pilot valve operates independent of main valve extending functional life.

Materials:

- Fiberglass reinforced nylon body and valve bonnet
- chemical resistant
- high strength
- Stainless Steel nuts and bolts
- no rust
- 1 piece urethane diaphragm
- chemical resistant
- slow to close, no waterhammer.
- Heavy Duty Bronze Pilot Valve Standard

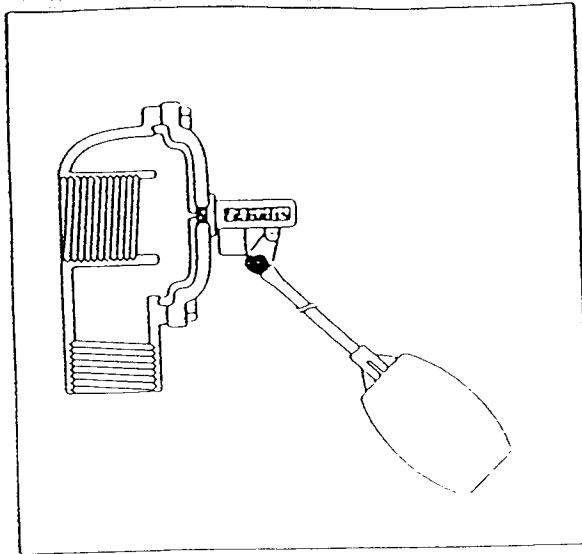


Part #	Flow Rate (G.P.M.) at various inlet pressures										
	10	20	30	40	50	60	70	80	90	100	110
S2-100	32	52	66	73	84	88	94	101	105	107	112



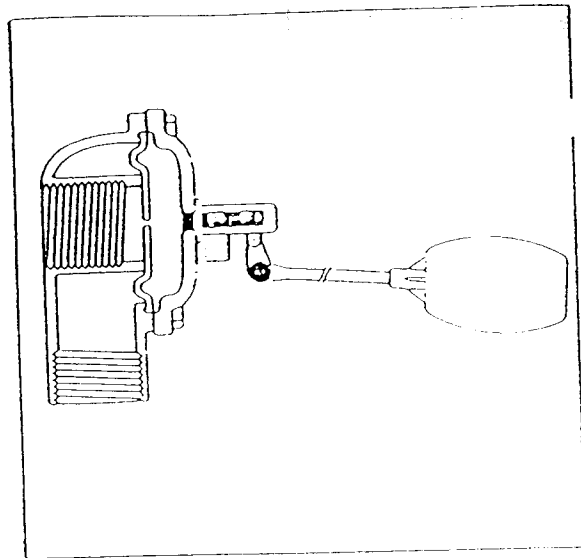
PUMP UP + PUMP DOWN WHITE WIRES TOGETHER
 TIE BLACK WIRE TO 24VOLT ONE BLACK TO PUMP UP

ITEM	PART	DESCRIPTION	QTY
1100 PACE ST. BRISTOL, VA 24301 LARRY WARD R-O PLUMBING			
DRAWN BY		DATE	
RAMBO		12-14-87	
		BY	
		ROPLUMB	



Open Position

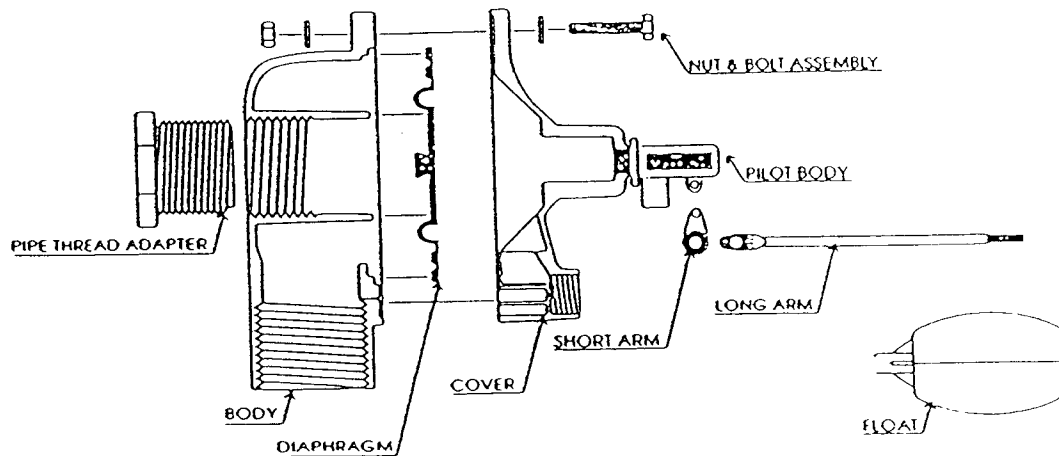
Open - When the pilot valve is in the open position, water enters the inlet under pressure. The diaphragm is forced into a nesting position in the body cavity. Water flows through the small hole in the diaphragm and thru the outlet at the pilot valve to the reservoir. The valve is now open.



Closed Position

Closed - When the pilot valve is in the closed position, water passing through the small hole in the diaphragm is trapped in the body cavity. The diaphragm is slowly forced into the inlet opening stopping the flow of water through the valve.

Replacement Parts and Accessories



Part #	Description	Qty. Per Unit	List Price Each
T00 Series Valves			
71-B	1" Black angle Body	1	511.76
71-CFC	1" Black Cover	1	15.98
71-D	1" Diaphragm	1	9.51
71-CSS	Stainless Steel Bolt	4	1.12
71-NSS	Stainless Steel Nut	4	.92
71-PVBH	Bronze Pilot Valve	1	8.66