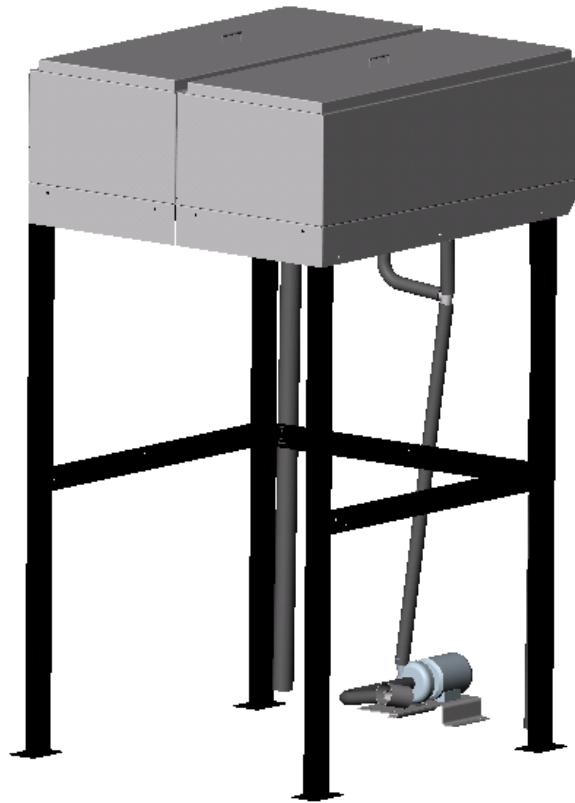


Water Conservation System

Owners Manual



ENGINEERED TO PERFORM. BUILT TO LAST.

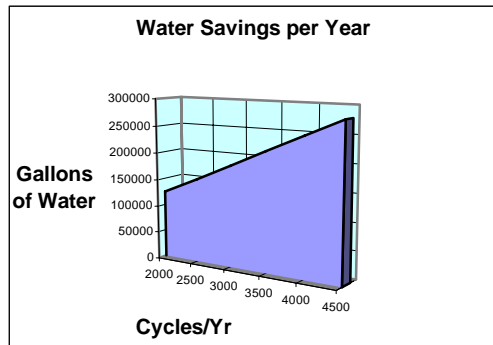
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System Overview & Specifications

The Water Conservation System can be programmed to save up to four high level baths to be used in subsequent cycles. This can reduce water usage and sewer output by up to 35%. The balanced design makes it impossible to accidentally overflow the tanks*. The tanks are made of 304 stainless steel for maximum corrosion resistance and durability. The system consists of a steel frame, two stainless steel tanks, one pump, two water valves, hoses and a control box. This system is extremely robust yet simple to install and operate with the benefit of easy installation on existing machines.

*Based on performance testing conducted with unrestricted open-trough drain system.



NOTE: Water savings based on the capture and reuse of two high level baths on an IPH100.

	WCS60	WCS80	WCS100	WCS140	Units
CAPACITY PER TANK	54	71.3	71.3	96	Gallons
NO. OF TANKS	2	2	2	2	
MATERIAL	304 SST	304 SST	304 SST	304 SST	
NET WEIGHT	625	733	733	820	Pounds
HEIGHT	86	94	94	102	Inches
WIDTH	43 1/4	51 1/4	51 1/4	59	Inches
DEPTH (includes machine)	59	67	67	71	Inches
OVERFLOW DIA.	2 3/8	2 3/8	2 3/8	2 3/8	Inches
NO. OF OVERFLOWS	2	2	2	2	
FILL DIA.	1.5	1.5	1.5	1.5	Inches
NO. OF FILL LINES	1	1	1	1	
PUMP CAPACITY	82	82	82	82	Gallons/Min.
PUMP PRESSURE	13.5	13.5	13.5	13.5	Lb/sq. in.
HIGH LEVEL FILL TIME	74	92	110	148	Sec.
HIGH LEVEL DRAIN TIME	23	28	34	47	Sec.
MED. LEVEL FILL TIME	55	68	80	105	Sec.
MED. LEVEL DRAIN TIME	20	25	30	39	Sec.
LOW LEVEL FILL TIME	40	47	54	71	Sec.
LOW LEVEL DRAIN TIME	17	20	23	30	Sec.
NO. OF PUMPS	1	1	1	1	
NO. OF VALVES	2	2	2	2	
VOLTAGE	110/60/1	110/60/1	110/60/1	110/60/1	Volts/Hz/Phase

Due to our policy of continuous quality improvements, specifications are subject to change without notification.

Installation Instructions

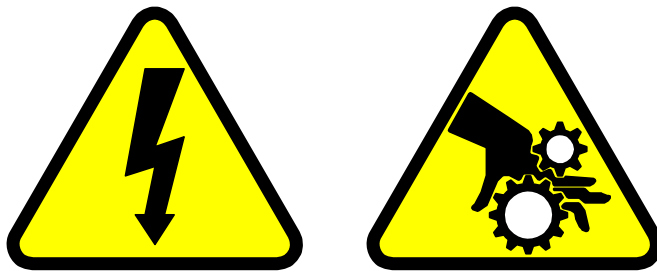
A. Tools Required

Tape measure
Razor knife or box cutter
Flat head screwdriver
Drill with concrete bit
5/16" nut driver or socket
9/16" wrench or socket
7/16" wrench or socket
Ratchet
#4 Phillips screwdriver (if tank removal is required)

B. Supplies Required

Concrete anchors
Material to plumb overflows into drain system

C. Prepare Washing Machine



Remove power from the washing machine.

Be sure to follow all lock-out/tag-out procedures for safety purposes. The machine must be in a zero energy state prior to installing the Water Conservation System.

Access to the PS40 control enclosure and rear of the machine is required for installation of the Water Conservation System. This can be accomplished by removing the top cover (side cover on 140 & 175 lb. machines) and the lower rear panel from the machine.

Machines ordered with a Water Conservation System from the factory will have the control wiring and drain hose T installed. Therefore, it will not be necessary to remove the top (side) cover. Access to the rear of the machine is still required. Skip to step f: “position machine and bolt down.”

D. Install Control Wiring

A 7/8” hole is required in the upper rear panel of the machine for installation. If there is not a factory hole in the machine, the recommended location for this hole is near the top middle of the upper rear panel. Avoid the area above the vacuum breaker the very top of the panel where the top cover sits. Keep in mind that the control box cable is approximately 2’ long.

Thread the wires through the upper rear panel into the machine and secure with the locknut. The connector in figure 1 should be visible when standing behind the machine.

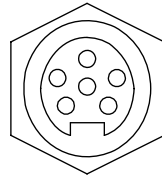


Figure 1.

Figure 2 shows the location of the drain harness plug (E) when looking down on the control box. Access inside this enclosure is not required.

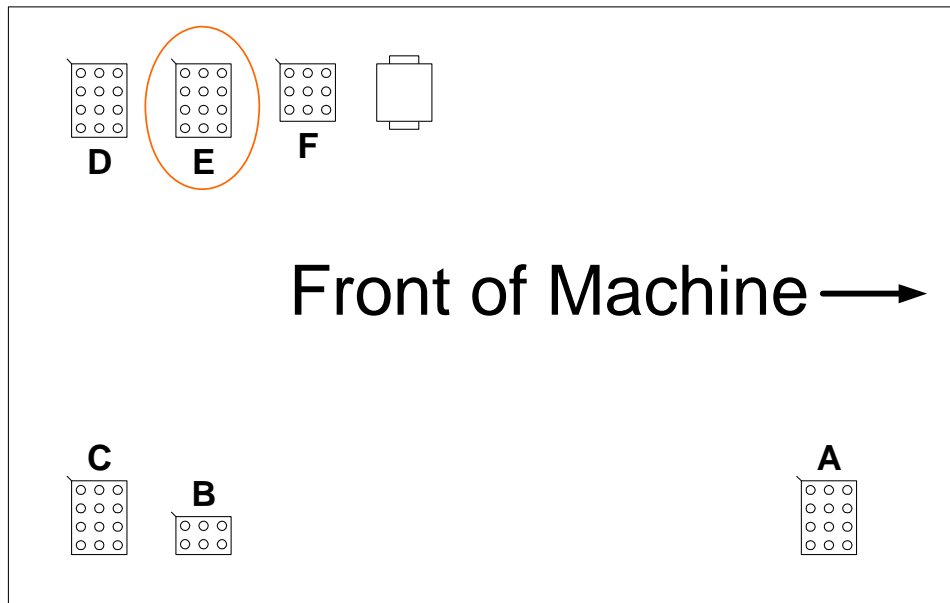


Figure 2.

Remove the drain harness (E plug) connector from the underside of the PS40 control enclosure.

When looking at the wire side of the connector, pin 1 can be located by the tab protruding from the corner of the connector, as in figure 3.

At a minimum, the drain harness connector will have wires in pins 1 and 2 for the drain valve, but may also have wires in pins 3 and 4 for an optional second drain valve and pins 11 and 12 for motor cooling fans.

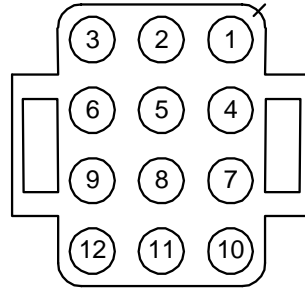


Figure 3.

It is essential that the next step is done correctly otherwise a special pin extraction tool is necessary to remove the pins without damage. Insert the wires in the following locations as shown in figure 4. This is the view as seen when looking at the wire side of the connector. Be sure the pins are securely locked in the connector by lightly pulling on the wire after it is inserted.

- Pin 5 – Black
- Pin 6 – Blue
- Pin 8 – Orange
- Pin 9 – Red
- Pin 10 – White

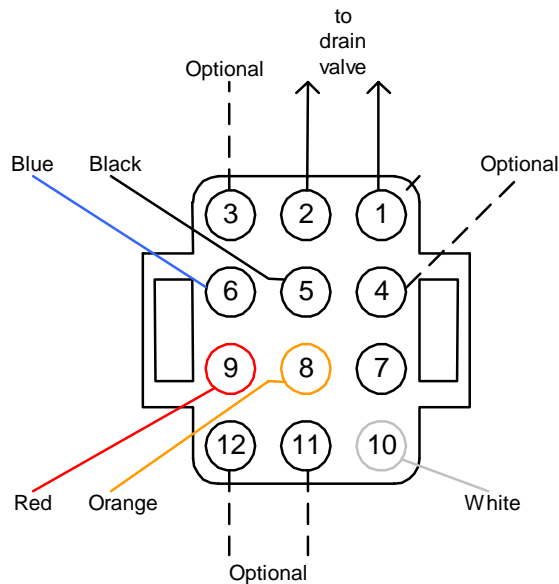


Figure 4.

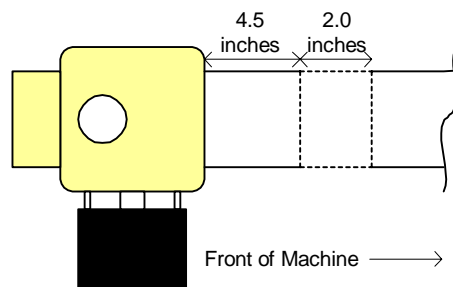
Connect the green/yellow ground wire to any 1/4" bolt on the upper rear panel and fasten with the supplied nut.

Re-attach the drain harness connector to the PS40 control enclosure. The plugs are keyed so it will only attach if the connector is in the proper orientation (1-1, 2-2, etc).

Replace top or side cover with the appropriate fasteners. Access to the rear of the machine is still necessary for plumbing connections.

E. Install drain hose T

In order to install the T, the drain hose must be modified. As shown in figure 5, 2.0 inches of the hose needs to be cut out 4.5 inches from the drain valve. This can be accomplished with a sharp knife or box cutter.



Figure

5.

Install the clamps and T as shown in figure 6 for IPH60, IPH80, and IPH100's. For IPH140's, the T must face in the opposite direction as in figure 7. Tighten clamps to ensure leak-free operation.

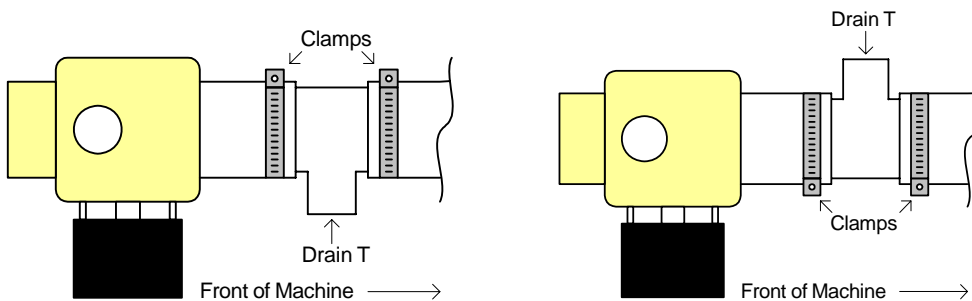


Figure 6.

Figure 7.

F. Position unit and bolt down

Remove the shipping pallet and position the system in front of the washing machine.

Due to the size of the unit, it may be necessary to remove the tanks or even breakdown the frame to get the system through doorways. See Section 6 for exploded drawings.

Remove the hoses (1), the rear crossbar (2), and both crossbar mounting brackets (3). On models WCS80, WCS100, and WCS140, remove the rear corner post insert (4) and insert the installation support (5). This is necessary to get the rear leg past the side soap dispenser on the washing machine. IPH60 washers do not have a side dispenser, so this feature is not included on the WCS60. Figure 8 shows how the machine is shipped while figure 9 shows the machine ready for positioning and installation over the washing machine.

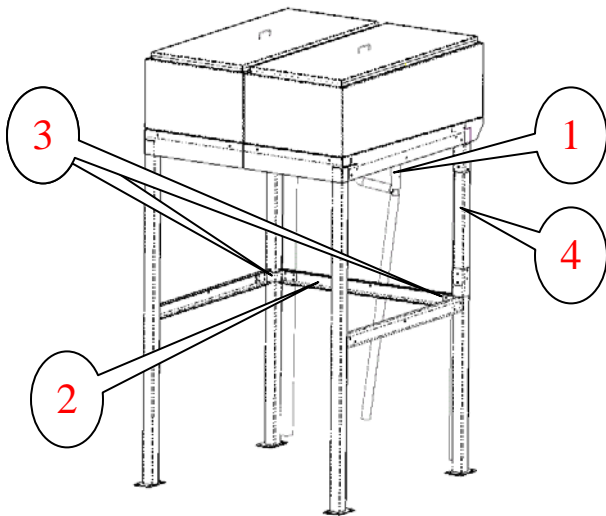


Figure 8.

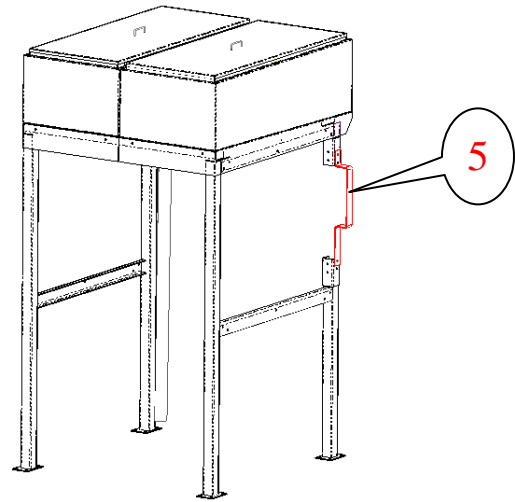


Figure 9.

Slide the water conservation system into place over the washing machine. Watch the overflow hoses; it is a tight fit. Position the front of the tanks flush with the front of the washing machine control panel. Once the system is situated in the desired location, remove the installation support (5) and reinstall the rear corner post insert (4). At this time also reattach the rear crossbar brackets (3), the rear crossbar (2), and the hoses (1). Figure 10 shows a correctly placed system ready to be bolted to the floor.

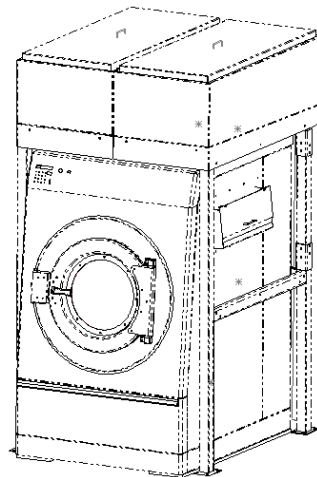


Figure 10.

The system must be bolted to the floor for added safety. Concrete anchors are NOT included with the system and must be supplied by the installer. Follow the anchor manufacturer's instructions for proper installation. Use two anchors on each leg for a total of eight anchors per system.

G. Install pump

If the rear cabinet support (1) has holes to mount the pump bracket (2), attach it with the bolts supplied. If installing the system on a machine that does not have the mounting holes in the cabinet support, wait to attach the pump until proper alignment is assured. In figure 11 below, only the pump bracket and cabinet support are shown for clarity.

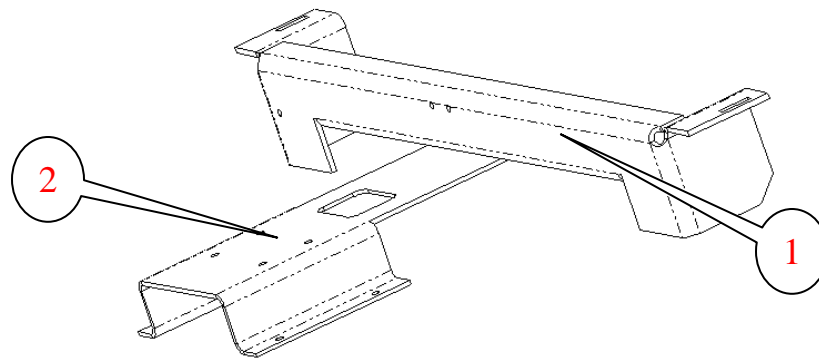


Figure 11.

Attach the short section of 1½” hose to the drain T and pump as shown below in figure 12 for the WCS60, WCS80, and WCS100. Figure 13 illustrates the proper installation on the WCS140. Trim the hose if necessary for proper installation. Attach the hose from the drain valves to the top of the pump and tighten clamps to ensure leak-free operation.

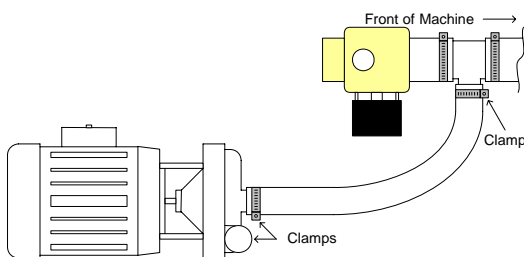


Figure 12.

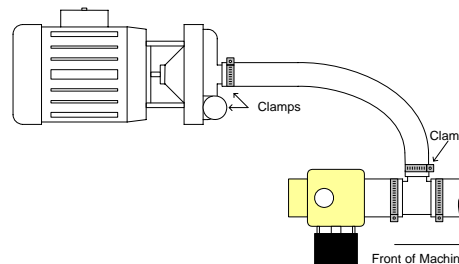


Figure 13.

H. Plumb overflow hoses

Plumb the tank overflow hoses into the drain system. The overflow hoses are shown in figure 14.

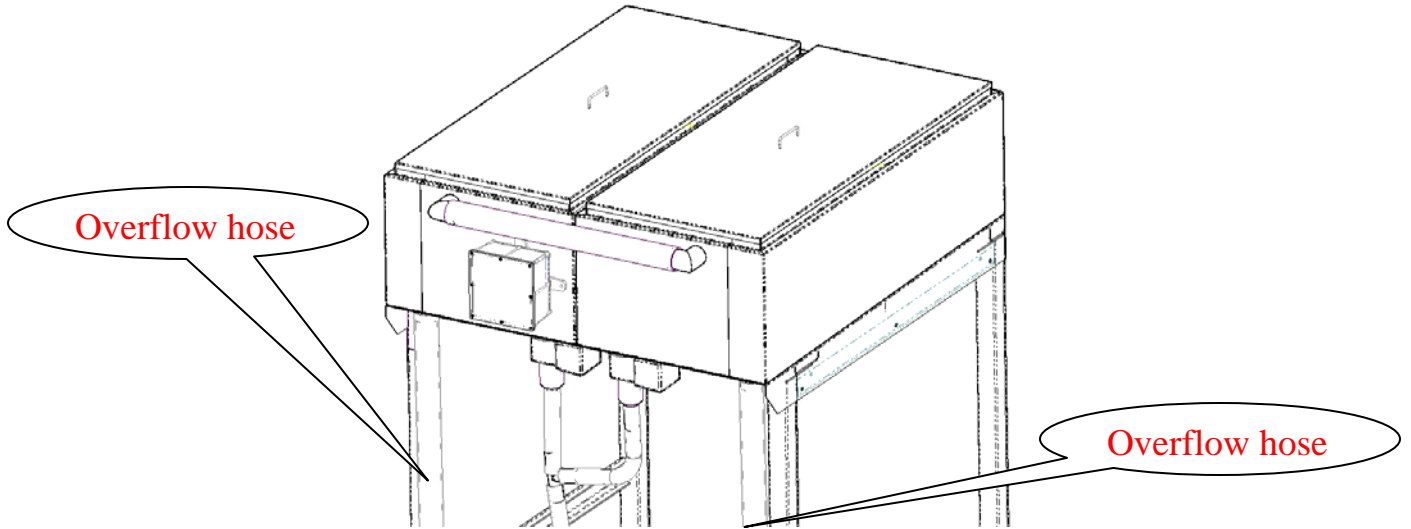


Figure 14.

I. Install control box

Attach the control box (1) to the #2 tank with the supplied fasteners as shown in Figure 15.

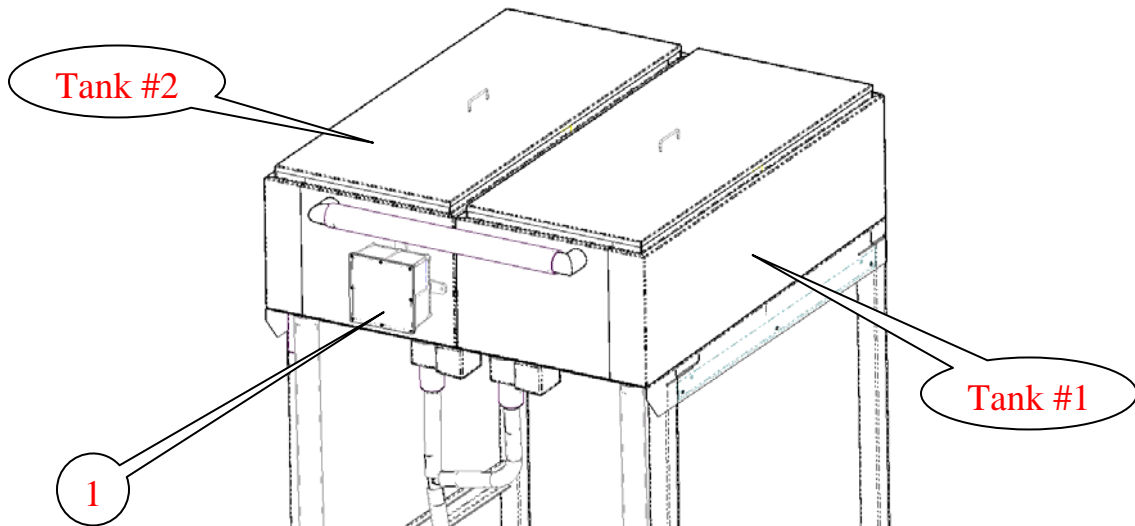


Figure 15.

J. Connect wiring

Connect the yellow multi-conductor cable from the control box to the watertight disconnect on the upper rear panel. Do not over tighten or use pliers. Damage to the connector may result.

Remove the drain valve covers and connect the cables from the control box as shown in figure 16. The length of the cable will determine which valve it should be connected to. Reattach the cover. The cable must be routed through the access slot to avoid damage.

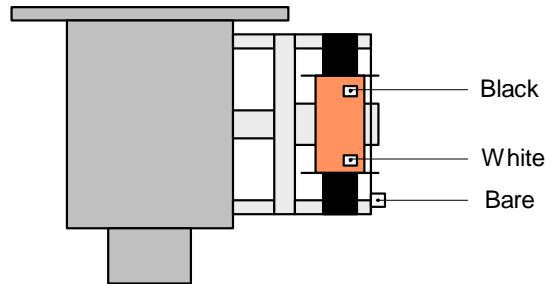


Figure 16.

Remove the control box cover. Thread the pump cable through the unoccupied cord grip. Connect the wires to the terminal block as shown in figure 17. Tighten the cord grip to securely hold the pump cable. Install control box cover.

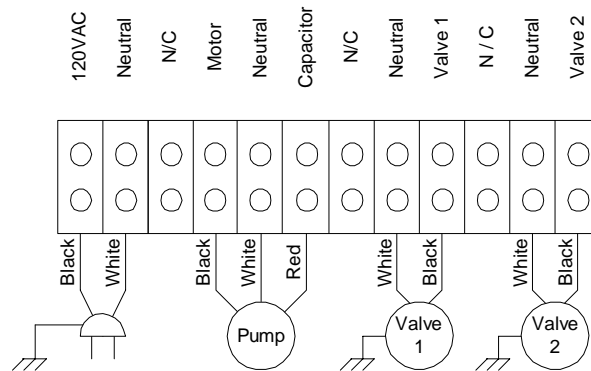


Figure 17.

K. Leak Test

Before the lower rear panel is reinstalled, perform a leak test on the new plumbing. In order to accomplish this, electrical and water service must be supplied to the washing machine. This test will only check the lower plumbing connections. The others will be tested later.

In order to access the Test Mode, ensure that “StArt” is on the display, turn the programming key to “Program”, and very quickly press \square 217 on the keypad. If “Prog 07” appears, you did not press the keys quickly enough. Press \square to abort and repeat the process. If “tEst” appears on the display, you are in the Test Mode.

Select Test 4 by pressing 4 \square . The display should read “t4. LEV 00. 0” indicating test 4 with a water level of 00.0. The door must lock during this test, so make sure the door is properly closed.

Press \blacksquare , the drain will close, and the machine will begin taking water. The machine will continue to fill until \square is pressed. When the water reaches the door glass, press \square . Go to the back of the machine and check the new hose connections on the pump and the drain T for leaks. Correct any problems. If it is necessary to drain the machine to fix a leak, press \square and the machine will drain. Repeat as necessary until no leaks are found.

L. Functionality Test

This test will verify proper operation of the Water Conservation System’s pump and valves. It is necessary to remain in the Test Mode. Press \square until “tEst” appears on the display. If you have already exited the test mode, follow the instructions above to access the Test Mode. The door must lock during this test, so make sure the door is properly closed.

Select Test 6 by pressing 6 \square . The display should read “out. door. o”.

Press \square . The door lock should energize. If the display shows “cl oSE. door” the door is not properly closed. Close the door. If the display reads “out. door. c”, press \square .

The display should read “out. rd1. o”. Press 1. The display should read “out. rd1. c”. Verify that the pump is running and the valve in tank #1 is open. Correct issues as necessary.

Press \square . The display should read “out. rd2. o”. Press 1. The display should read “out. rd2. c”. Verify that the pump is running and the valve in tank #2 is open. Correct issues as necessary.

Press \square . The display should read “out. i . r3. o”. Press 1. The display should read “out. i . r3. c”. Verify that the valve in tank #2 is open. Correct issues as necessary.

Press \square . The display should read “out. i . r2. o”. Press 1. The display should read “out. i . r2. c”. Verify that the valve in tank #1 is open. Correct issues as necessary.

To exit the test mode, press \square until “StArt” appears on the display.

Remove power from the machine, reinstall the lower rear panel, and secure with the appropriate fasteners. This may require the temporarily removal of the rear crossbar on the Water Conservation System.

M. Return machine to service



Verify that all panels have been reattached to the washing machine with the proper fasteners. Place the tank covers on top of the tanks. Apply power to the washing machine and plug the Water Conservation System into a 110-120 VAC 3-prong grounded outlet.




This completes the installation of the Water Conservation System.




Programming



A. Machine Setup




If the Water Conservation System was ordered with a washing machine from the factory, the necessary changes to the setup will already have been made. Skip to section B. Programming basics.



The washing machine setup must be modified to enable the outputs required for the Water Conservation System. In order to access the machine setup mode (pre-program), ensure that “StArt” is on the display, turn the programming key to “Program”, and very quickly press  619 on the keypad. If “ProG 09” appears, you did not press the keys quickly enough. Press  to abort and repeat the process. If “ProGrAM” appears on the display, you have accessed the pre-program mode.


To scroll through the options list, press the  button. If you accidentally pass over the option you need to change, press the  button to scroll back. The number of times it will be necessary to push the  button varies depending upon machine options.

Press the  button until “no i r2” appears on the display. Press  to turn this function on. The display should now read “ i r2”. Press .

“no i r3” should now be on the display. Press  to turn this function on. The display should now read “ i r3”. Press .

Press the  button until “no rd1” appears on the display. Press  to turn this function on. The display should now read “ rd1”. Press .

“no rd2” should now be on the display. Press  to turn this function on. The display should now read “ rd2”. Press .

Press  until “WAit...” appears on the display. In a few seconds, this will disappear, replaced with “StArt”.

B. Programming Basics

The washing machine can be programmed to utilize the Water Conservation System in complex ways, but the basic programming concepts are very simple.

Fills – to use water from the Water Conservation System tanks, simply select ir2 or ir3 instead of (or in addition to) the hot and/or cold water valves that would normally be selected. When viewed from the front of the machine, tank 1 will be on the left and tank 2 on the right, as shown in figure 18. When selecting the water source, ir2 will be tank 1 and ir3 will be tank 2.

Drains – to pump water to the Water Conservation system tanks, simply select rd1 or rd2 instead of d1 at the end of a bath. The water will be pumped up to the chosen tank instead of being dumped down the drain. Selecting rd1 will pump the water to tank 1, while selecting rd2 will pump to tank 2.

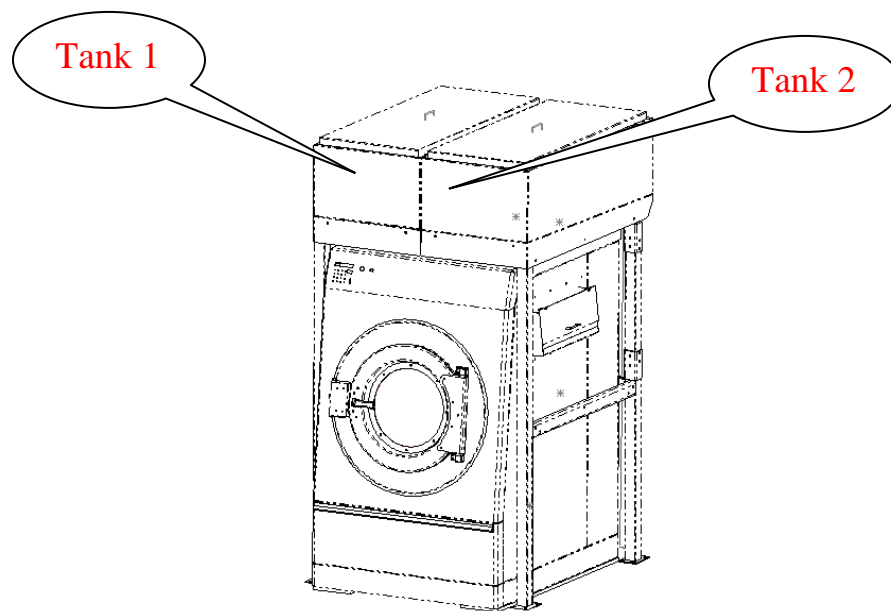


Figure 18.

C. Tips and Suggestions

The most common method of usage for the Water Conservation System is filling from tank 1 for the pre-wash bath and tank 2 for the 1st rinse while capturing the rinse water from the 2nd rinse in tank 1 and the 3rd rinse in tank 2.

If capturing a rinse that contains fabric softener, only use it for another rinse. Using it for a pre-wash or wash will greatly diminish the effectiveness of the detergent during the wash bath.

If the washing machine does not have supplemental heat and a temperature controlled fill is required, select the desired tank from which to fill and the hot water valve. The machine will toggle between the two sources to reach the proper bath temperature.

When programming a bath that is filling from the Water Conservation System, program two shorter steps as opposed to one long step. Break it up into two separate fills without a drain (d0); one from the Water Conservation System and the other from the main supplies. This will ensure that the bath is executed properly even if the selected tank is empty.

Do not program a level control fill when filling from the Water Conservation System. If the selected tank is empty, the timer will not start, and the program will wait indefinitely for the machine to fill with water.

D. Sample Programs

Included below are three sample wash cycles that demonstrate how a washer/extractor can be programmed to utilize the Water Conservation System.

Please note that these sample wash cycles are very basic examples of how the system can be employed. As mentioned previously, the Water Conservation System can fill the washer/extractor during any bath or reclaim any bath.

Program 11 - WCS wash - tank 1

Segment	id	prewash	prewash	wash	rinse	rinse	rinse & spin
		1	2	3	4	5	6
Wash Time	Cyt ti	1.00	2.00	7.00	2.00	2.00	3.00
Rotation	rotE	normal	normal	normal	normal	normal	normal
Rotation action time	rotE A						
Rotation stop time	rotE S						
Speed	rotE SP						
Temperature	teMP F	33	33	33	33	33	33
Supply Flush 1	SE-i i 1			X			
Supply Flush 2	i 2			X			
Supply Flush 3	i 3						X
Supply Flush 4	i 4						
Supply Flush 5	i 5						
Cold Water Inlet	i Col d		X	X	X	X	X
Hot Water Inlet	i Hot		X	X	X		
Flush	Fl ush						
Reuse fill 2	i . r2	X					
Reuse fill 3	i . r3						
Level type	SE-LE LE	Hi	Hi	Lo	Med	Med	Med
Level	SE-LE LE. P						
Level Control	LE. Co LE. S. P	no	20	10	15	15	15
Chem 1	SoAP t1			030			
Chem 2	SoAP t2			030			
Chem 3	SoAP t3						030
Chem 4	SoAP t4						
Chem 5	SoAP t5						
Chem 6	SoAP t6						
Spin time	Spi n SP. T	no spin	no spin	no spin	1.00	1.00	5.00
Spin type					Lo	Lo	Smart
Spin Speed GF	SP						
Drain	drai n	d0	d1	d1	d1	rd1	d1
Drain movement	drai n		dist	dist			
Drain time	drai n t		45	45			
Spin delay time	Spi n dEti td				005	005	005
Total Time	t=	1.00	2.45	7.45	3.05	3.05	8.05
Tumble	tu						030

In step 1, the machine fills from tank 1. Note: no level control in step 1 in case tank 1 is empty.

In step 5, the second rinse is captured in tank 1.

Program 12 - WCS wash - both tanks

Segment	id	prewash	prewash	wash	rinse	rinse	rinse	rinse & spin
		1	2	3	4	5	6	7
Wash Time	Cyt ti	1.00	2.00	7.00	1.00	1.00	2.00	3.00
Rotation	rotE	normal	normal	normal	normal	normal	normal	normal
Rotation action time	rotE A							
Rotation stop time	rotE S							
Speed	rotE SP							
Temperature	teMP F	33	33	33	33	33	33	33
Supply Flush 1	SE-i i 1			X				
Supply Flush 2	i 2			X				
Supply Flush 3	i 3							
Supply Flush 4	i 4							
Supply Flush 5	i 5							
Cold Water Inlet	i Col d		X	X		X	X	X
Hot Water Inlet	i Hot		X	X		X		
Flush	Fl ush							
Reuse fill 2	i . r2	X						
Reuse fill 3	i . r3				X			
Level type	SE-LE LE	Hi	Hi	Lo	Med	Med	Med	Med
Level	SE-LE LE. P							
Level Control	LE. Co LE. S. P	no	20	10	no	15	15	15
Chem 1	SoAP t1			030				
Chem 2	SoAP t2			030				
Chem 3	SoAP t3							
Chem 4	SoAP t4							
Chem 5	SoAP t5							
Chem 6	SoAP t6							
Spin time	Spi n SP. T	no spin	no spin	no spin	no spin	1.00	1.00	5.00
Spin type						Lo	Lo	Smart
Spin Speed GF	SP							
Drain	drai n	d0	d1	d1	d0	d1	rd1	rd2
Drain movement	drai n		dist	dist				
Drain time	drai n t		45	45				
Spin delay time	Spi n dEti td					005	005	005
Total Time	t=	1.00	2.45	7.45	1.00	2.05	3.05	8.05
Tumble	tu							030

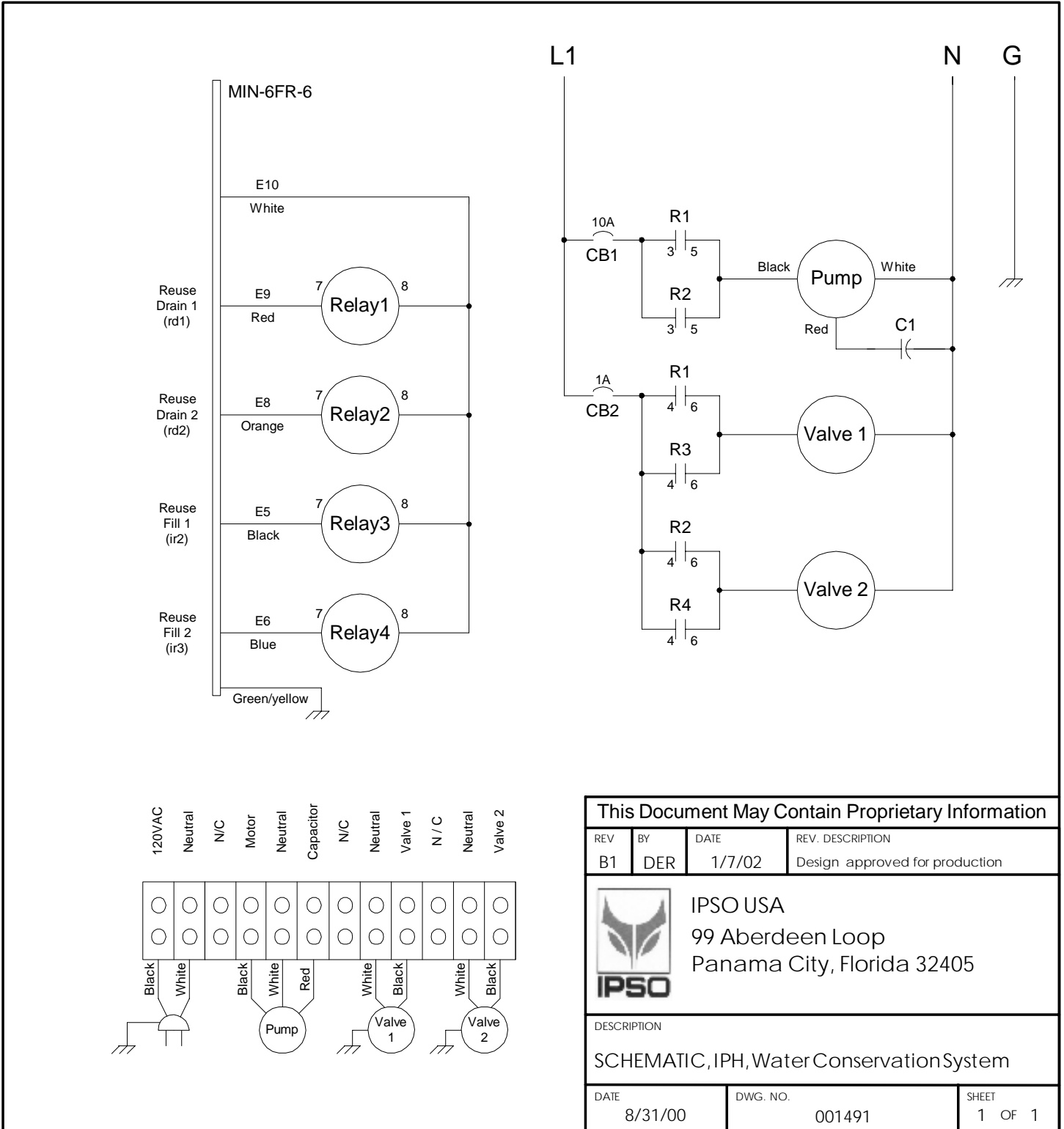
In step 1, the machine fills from tank 1
 In step 4, the machine fills from tank 2.
 In step 6, the second rinse is captured in tank 1.
 In step 7, the final rinse is captured in tank 2.

Program 14 - WCS prewash only

Segment	id	prewash	prewash	wash	rinse	rinse	rinse & spin
		1	2	3	4	5	6
Wash Time	Cyt ti	1.00	2.00	7.00	2.00	2.00	3.00
Rotation	rotE	normal	normal	normal	normal	normal	normal
Rotation action time	rotE A						
Rotation stop time	rotE S						
Speed	rotE SP						
Temperature	teMP F	33	33	33	33	33	33
Supply Flush 1	SE-i i 1			X			
Supply Flush 2	i 2			X			
Supply Flush 3	i 3						X
Supply Flush 4	i 4						
Supply Flush 5	i 5						
Cold Water Inlet	i Col d		X	X	X	X	X
Hot Water Inlet	i Hot		X	X	X		
Flush	Fl ush						
Reuse fill 2	i . r2	X					
Reuse fill 3	i . r3	X					
Level type	SE-LE LE	Hi	Hi	Lo	Med	Med	Med
Level	SE-LE LE. P						
Level Control	LE. Co LE. S. P	no	20	10	15	15	15
Chem 1	SoAP t1			030			
Chem 2	SoAP t2			030			
Chem 3	SoAP t3						030
Chem 4	SoAP t4						
Chem 5	SoAP t5						
Chem 6	SoAP t6						
Spin time	Spi n SP. T	no spin	no spin	no spin	1.00	1.00	5.00
Spin type					Lo	Lo	Smart
Spin Speed GF	SP						
Drain	drai n	d0	d1	d1	d1	rd1	d1
Drain movement	drai n		dist	dist			
Drain time	drai n t		45	45			
Spin delay time	Spi n dEt i td				005	005	005
Total Time	t=	1.00	2.45	7.45	3.05	3.05	8.05
Tumble	tu						030


In step 1, the machine fills from tank 1 & 2.
All rinses use new water.

Schematic



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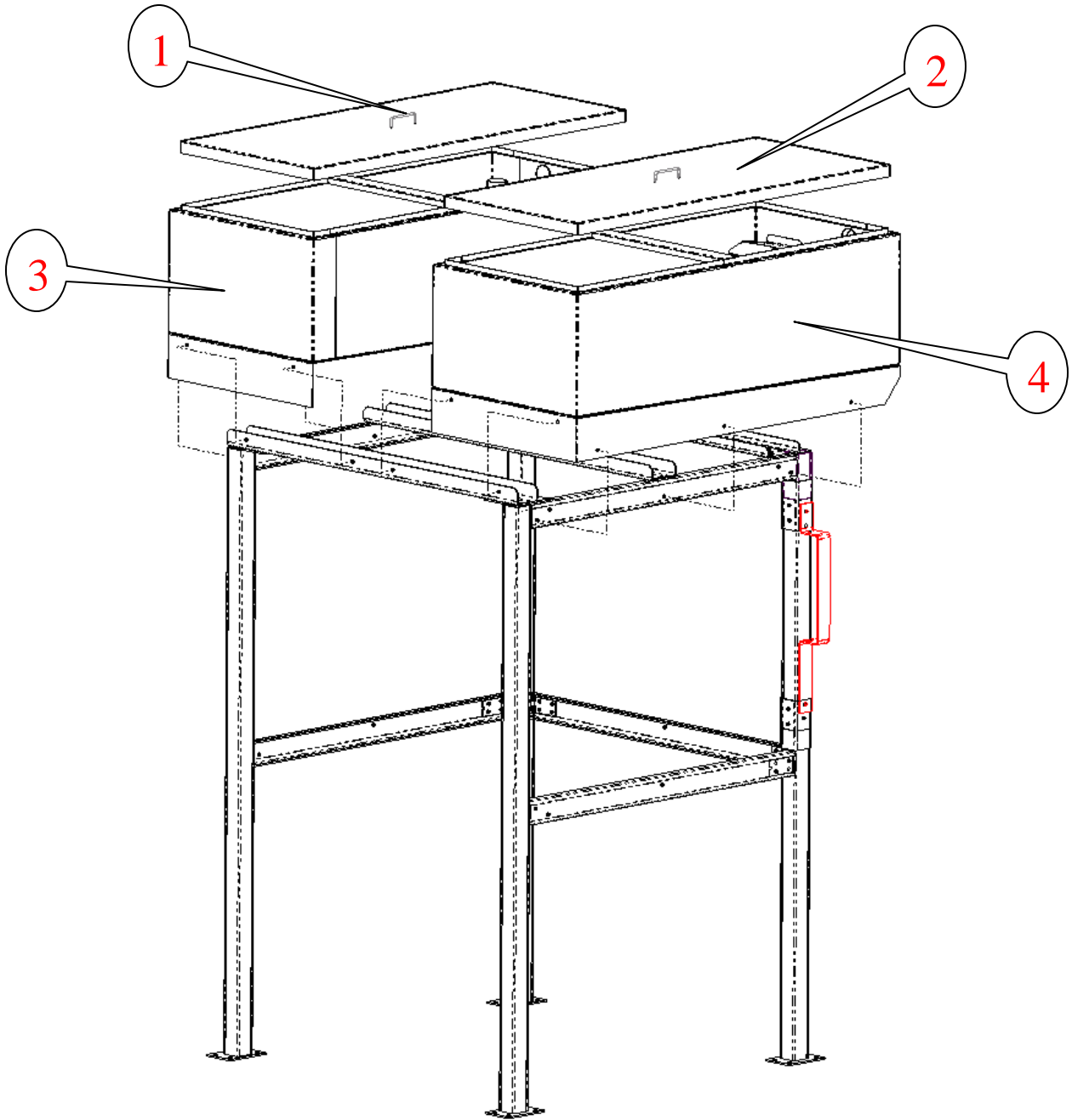
REV	BY	DATE	REV. DESCRIPTION
B1	DER	1/7/02	Design approved for production


IPSO USA
 99 Aberdeen Loop
 Panama City, Florida 32405

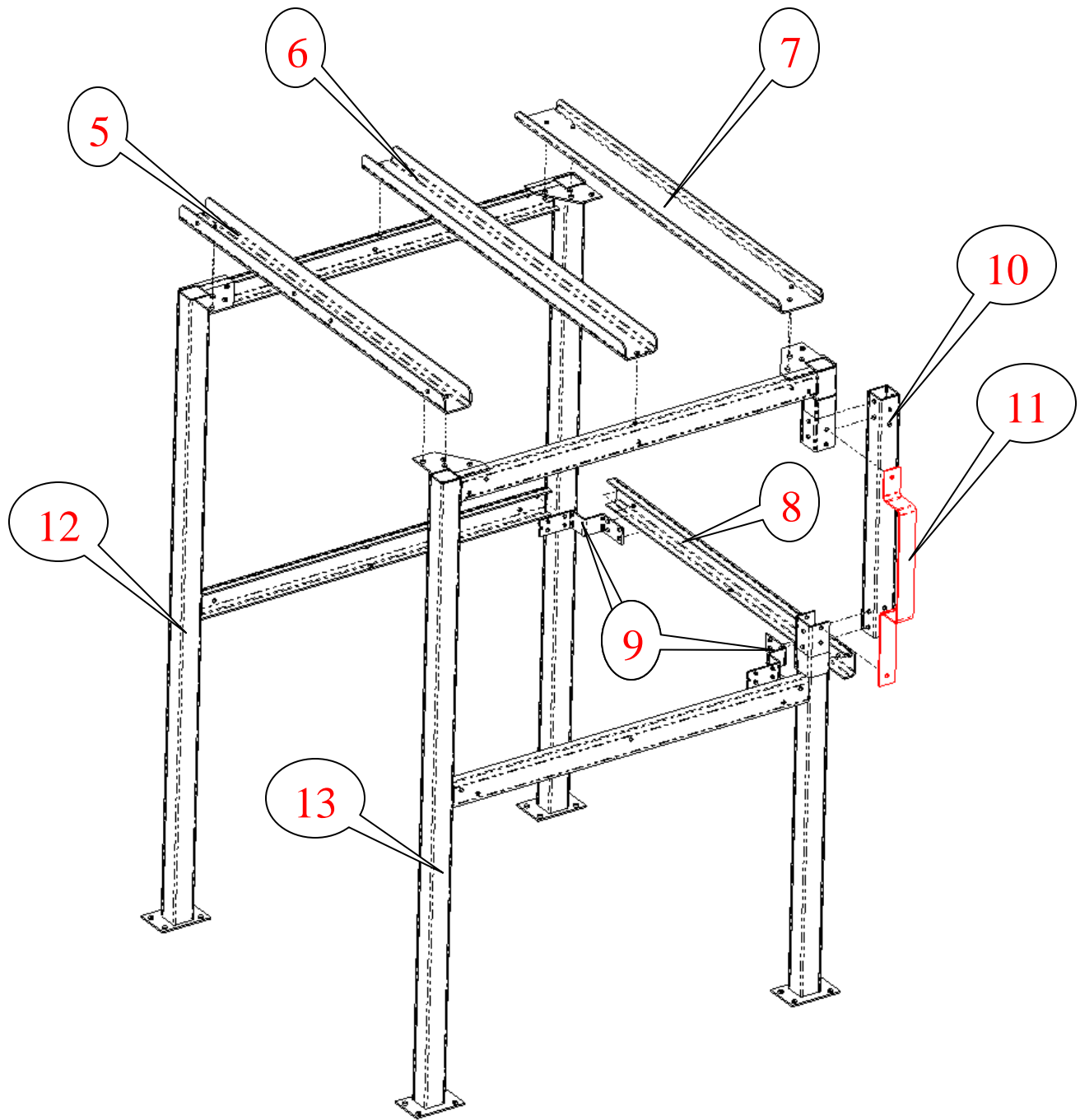
DESCRIPTION
 SCHEMATIC, IPH, Water Conservation System

DATE	DWG. NO.	SHEET
8/31/00	001491	1 OF 1

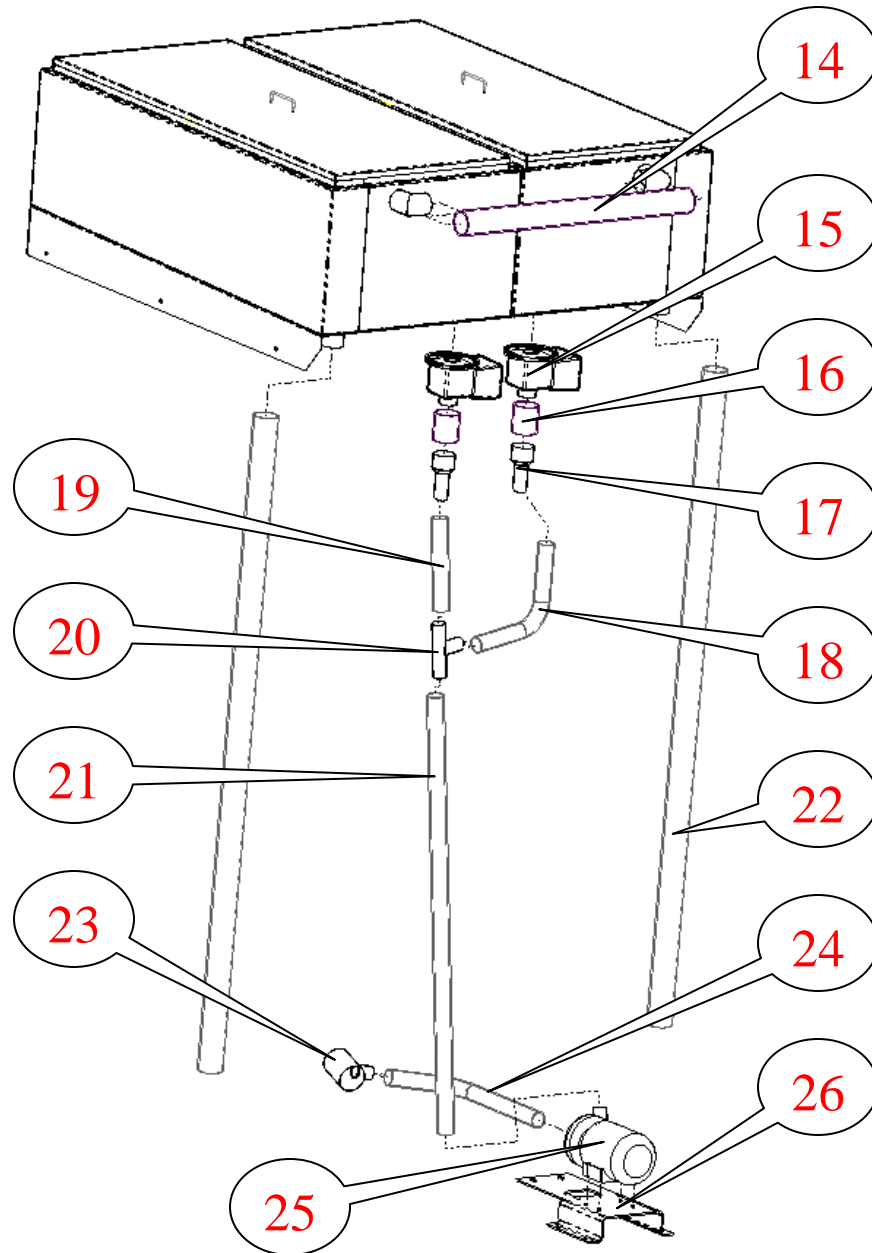
Drawings



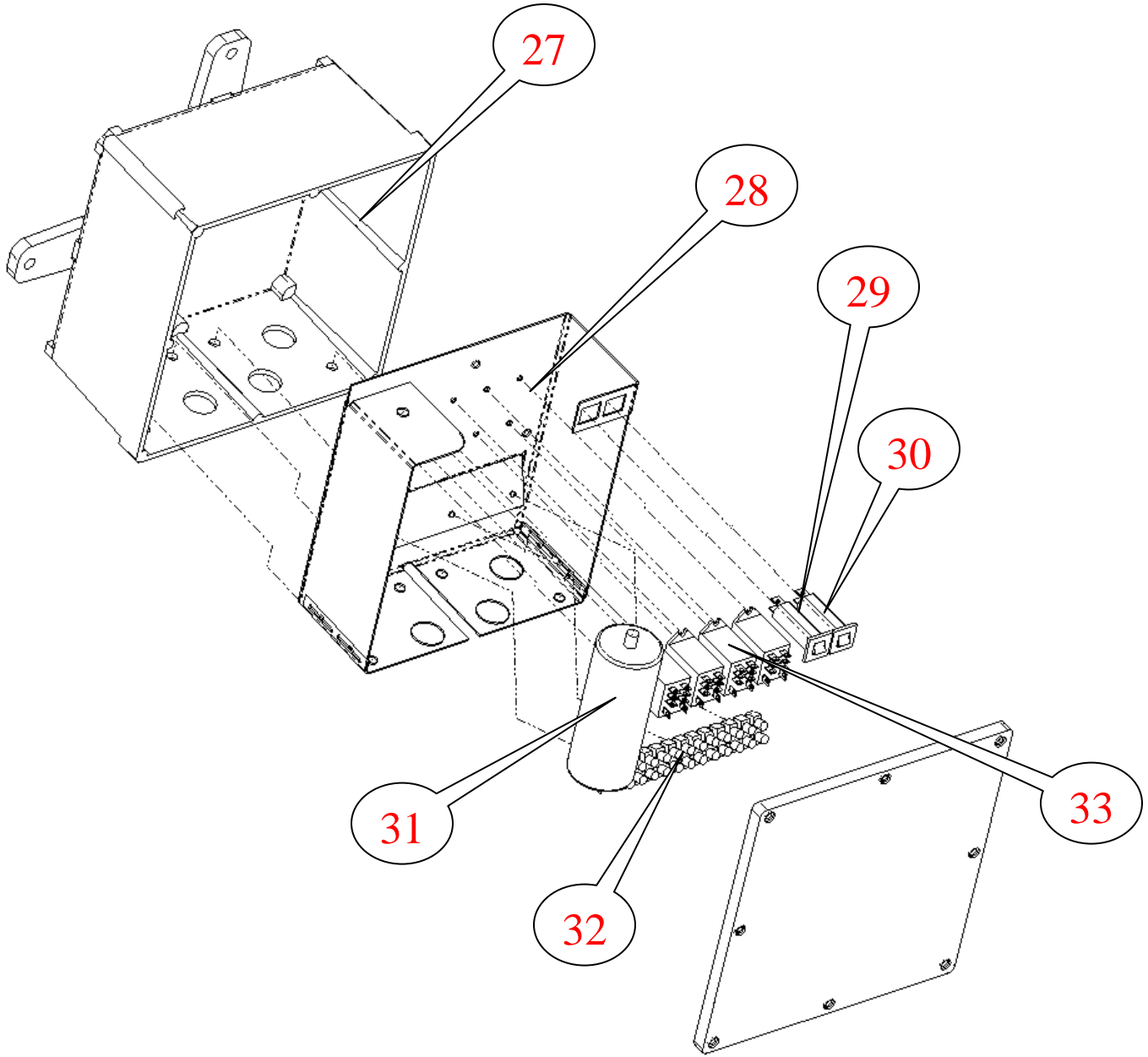
Drawing 1 – Exploded view of the holding tanks. The plumbing is not shown for clarity



Drawing 2 – Exploded view of the frame subassembly. Tanks and plumbing are not shown for clarity.



Drawing 3 - Exploded view of the plumbing system. The frame is not shown for clarity.



Drawing 4 – Exploded view of the control box. Cord grips and cables are not shown for clarity.

Parts List

Call-out	Description	Qty.	WCS60 Part #	WCS80/100 Part #	WCS140 Part #
1	Handle	2	000328	000328	000328
2	Cover, tank access	2		001090	
3	Tank	1		001067	
4	Tank	1		001066	
5	Top front crossbar	1		001079	
6	Top center crossbar	1		001080	
7	Top rear crossbar	1		001081	
8	Rear crossbar	1		001083	
9	Clip, rear crossbar	2		001084	
10	Upright, mid frame	1		001414	
11	Installation strap	1	N/A	001418	
12	Frame side assembly (RT) *	1		001078	
13	Frame side assembly (LF) *	1		001413	
14	Hose, tank crossover	1	001429	001429	001429
15	Valve	2	001091	001091	001091
16	Hose, valve to reducer	2			
17	Reducer	2	001417	001417	001417
18	Hose, reducer to valve Tee, 90 deg.	1	001433	001433	001433
19	Hose, reducer to valve Tee, straight	1	001434	001434	001434
20	Pump feed Tee	1	001089	001089	001089
21	Hose, pump to Tee	1	001432	001432	001432
22	Overflow hose	2	001430	001430	001430
23	Drain Tee	1	001102	001102	001102
24	Hose, pump to drain Tee	1	001431	001431	001431
25	Pump	1	001092	001092	001092
26	Pump stand	1	001097	001097	001097
27	Control box with cover	1	001420	001420	001420
28	Control box insert	1	001421	001421	001421
29	Circuit Breaker, 10A	1	001423	001423	001423
30	Circuit Breaker, 1A	1	001424	001424	001424
31	Capacitor	1	001425	001425	001425
32	Terminal strip	1	000370	000370	000370
33	Relay	4	001422	001422	001422
Not pictured	Cord grip, 7/8"	3	001443	001443	001443
Not pictured	Cord grip, 1 1/8"	1	000293	000293	000293
Not pictured	Power cord	1	001444	001444	001444
Not pictured	Male Mencom cable	1	001426	001426	001426
Not pictured	Female Mencom harness	1	001427	001427	001427
Not pictured	Schematic	1	001491	001491	001491