



Equipment Schedule		
Tag #	Description	Notes
1	Heliodyne® SolPal ICS Collector	When mounted on East/West roof planes, never tilt South. Mount Flush only
2	Vacuum Breaker	Installing other than shown in manual will void manufacturer warranty
3	Pressure Relief Valve (90 psi)	Watts #3L - Installing other than shown will void manufacturer warranty
4	Feed Line Drain Valve	Normally Closed; open to drain collector - see Warning below
5	Return Line Drain Valve	Normally Closed; open to drain collector - see Warning below
6	Feed Line 3-Way Valve	Normally Open; close to bypass collector for draining
7	Return Line 2-Way Valve	Normally Open; close to isolate collector for draining
8	Return Line 3-Way Valve	Select Pre-heat Mode or Direct Mode as desired
9	Anti-Scald Mixing Valve	Set temperature to user preference
10	Expansion Tank	Required if any items listed in #13 are installed in the cold water supply line
11	Cold Supply 2-Way Valve	Normally Open; close for tank maintenance or extended non-use
12	Pressure Reducing Valve (60 psi Max)	Required if municipal water pressure exceeds 60 psi
13	Backflow Preventor / Check Valve	Optional/existing located anywhere in the cold water supply line to house/tank
14	Electric Backup Heating Element	Turn On or Off at Breaker or optional Switch based on SolPal Mode selected
15	Feed Line Swing Check Valve	Check Valve prevents Collector from draining in the event of loss of water pressure; see Warning below
16	Freeze Protection Valve (35F)	Optional freeze protection valve for areas with occasional freezing conditions

THERMAL EXPANSION TANK SIZING TABLE		
WATER HEATER SIZE	EXPANSION TANK GALLONS (MAX 60 PSI CITY WATER PRESSURE)	
	@140°F	@16.0°F
40	2.0	3.2
50	2.0	3.2
60	3.2	3.2
80	3.2	4.4
120	4.4	4.4

SOLAR DIRECT

Solar Hot Water System
Heliodyne SolPal ICS Collector
Typical Plumbing Diagram

SIZE A	DWG NO 1 of 2	REV 1.2	SHEET: N/A
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SOLPAL - PLUMBING DIAGRAM.dft		
	NAME	DATE
Drawn by	Adam Diehl	03/20/13
Eng Appr	Kirk Maust	03/20/13
P.E. Appr	David Stevens	03/20/13

Stevens & Associates, LLC

Choose desired SOLAR MODE below then set BACKUP HEATER and VALES as shown below MODE selected.
*WATER HEATER BREAKER MAY BE LEFT OFF OR TURNED ON IN PRE-HEAT MODE

SOLPAL OPERATION MODE GUIDE				
VALVE #	SOLAR HEATER	DIRECT	PRE-HEAT	OFF
	BACKUP HEATER	OFF	ON OR OFF*	ON
6		DOWN	DOWN	HORIZONTAL
7		DOWN	DOWN	HORIZONTAL
8		HORIZONTAL	DOWN	HORIZONTAL

WARNING: If the outside temperature falls below 20F for 18 consecutive hours or 10F for 6 consecutive hours, the SolPal system must be drained and covered to prevent freezing. See Operating Manual for Draining and Filling instructions. Do not leave system drained unless the panel is covered.

X _____
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN FT-IN
SCALE 1/4" = 1'0"