

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0507986
Insp Area: 4
Thos Bros: 276J4

Site Address: 2920 MUTTONBIRD WY SAC
Parcel No: 225-1880-053

Sub-Type: RES
Housing (Y/N):

CONTRACTOR
SIERRA HOME POOL & SPA
8146 GREENBACK LN #103
FAIR OAKS CA 95628

OWNER
CAMPOSAGRADO ALBERTO/VIRGINIA
2920 MUTTONBIRD WY
SACRAMENTO, CA 95834

ARCHITECT

Nature of Work: NEW SINGLE FAMILY GUNITE SWIMMING POOL

CONSTRUCTION LENDING AGENCY: I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name _____ Lender's Address _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class C-53 License Number 806212 Date 6/17/05 Contractor Signature Don Collins

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I, as owner of the property, am PAID CITY OF SACRAMENTO NEIGHBORHOODS PLANNING AND DEVELOPMENT SERVICES JUN 17 2005 B & PG for this reason: NEIGHBORHOODS PLANNING AND DEVELOPMENT SERVICES
The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law.

I am exempt under Sec. _____ B & PG for this reason: _____
Date _____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 6/17/05 Applicant/Agent Signature Don Collins

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:
I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier STATE FUND Policy Number 1727703 Exp Date 02/01/2006

(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 6/17/05 Applicant Signature Don Collins

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

IAPMO RESEARCH AND TESTING, INC.

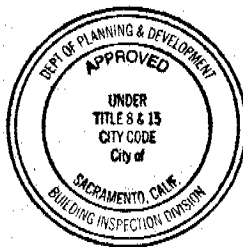
5001 E. Philadelphia Street, Ontario, CA 91761-2816
(909) 472-4100 • Fax (909) 472-4244 • www.iapmo.org



CERTIFICATE OF LISTING

Samples of the product described herein have been tested by an independent testing laboratory and have been reviewed and accepted for listing by the Product Research Committee of IAPMO Research and Testing, Inc. as meeting the requirements of the Uniform Solar Energy Code™. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by local jurisdictions or authorities using the Uniform Solar Energy Code™ or otherwise affiliated with IAPMO Research and Testing, Inc.

Accepted: November 2004 Void After: November 2005
PRODUCT: Collectors (Flat Plate) FILE NO. S-1889
APPLICANT: Fafco, Inc.
435 Otterson Drive
Chico, CA 95928
IDENTIFICATION: Permanent label showing manufacturer's name or trademark,
model numbers or name and USEC® certification mark.
CHARACTERISTICS: Flat plate thermol collectors for use in spa, pool, space or
domestic water heat exchanger systems and energy storage.
Sizes and weights are as shown. To be installed in accordance
with the manufacturer's instructions and the provisions of
the latest edition of the Uniform Solar Energy Code.
Manufactured in compliance with OG 100-95.
MODELS: Fafco 908, 910, 912 (Unglazed), 918, 920, 922, 948, 950, 952
(Models 4' wide with varying lengths from 2' to 24')



This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the Building Inspection Division.

The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

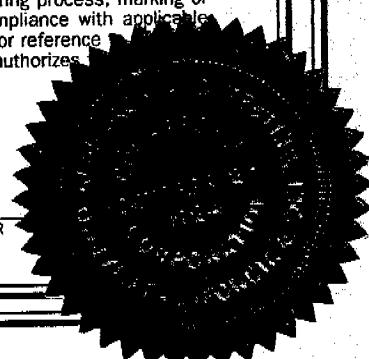
ISSUED
City of Sacramento
AUG 17 2005
NORTH PERMIT
CENTER

This listing is for the period indicated herein and is void after date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Research Committee or any evidence of non-compliance with applicable standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Reproduction of or reference for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. This authorizes USEC® on products or packaging of products covered by this certificate.

Any alteration of this certificate could be grounds for revocation of the listing.

Robert R. Siemsen
CHAIRMAN, PRODUCT RESEARCH COMMITTEE

Ken Chaney
EXECUTIVE DIRECTOR



SYSTEM SPECIFICATIONS

DESCRIPTION:	The FAFCO Solar Collector is manufactured in Chico, California. The collector is a specially developed, highly stabilized polyolefin with parallel, circular channel design. It is unglazed, uninsulated, and designed for low temperature applications such as swimming pool heating, heat pumps, aquaculture, and hydroponics.	
DIMENSIONS:	Header Length = 50.875 in. (1.29 m) Width (Panel body) = 47.5 in. (1.21 m)	
	Overall Dimensions:	Effective Area
	4 ft. X 8 ft. (1.22 X 2.44 m)	31.6 ft ² (2.94 m ²)
	4 ft. X 10 ft. (1.22 X 3.05 m)	39.5 ft ² (3.67 m ²)
	4 ft. X 12 ft. (1.22 X 3.66 m)	47.8 ft ² (4.40 m ²)
FLOW:	Maximum recommended flow = 8 gpm per panel 3.47 psi head loss (1,817 l/hr, 0.248 kg/cm ²) Minimum recommended flow = 3 gpm per panel 0.48 psi head loss (681 l/hr, 0.034 kg/cm ²) Recommended flow = 4 gpm per panel 0.87 psi head loss (908 l/hr, 0.061 kg/cm ²)	
PRESSURE:	NORMAL OPERATING PRESSURE	MAXIMUM INTERMITTENT PRESSURE
80°F (27°C)	0 to 30 psi (0 - 2.2 kg/cm ²)	45 psi (3.21 kg/cm ²)
70°F (21°C)	Measured burst pressure of panel body = Over 300 psi (21.1 kg/cm ²)	
TEMPERATURE:	Normal operating temperature = 60°F to 90°F (16°C to 32°C) Maximum continuous operating temperature = 212°F (100°C) Maximum intermittent temperature (unpressured) = 250°F (121°C) Melt temperature = 338°F (170°C)	
FREEZING:	The system should be drained before freezing conditions occur.	
WEATHERABILITY:	Weatherometer, accelerated outdoor exposure, and other extensive laboratory testing demonstrates long-term weatherability of FAFCO collectors (see warranty). Additionally, FAFCO's experience of nearly 30 years and over 1,000,000 collectors installed confirms that the proprietary stabilization and high mechanical strength results in negligible warranty over the warranty period.	
WEIGHT:	Without Water:	
	4 ft. X 8 ft.	13.5 lbs (5.04 kg) or 0.42 lbs/ft ² (2.05 kg/m ²)
	4 ft. X 10 ft.	15.9 lbs (5.93 kg) or 0.40 lbs/ft ² (1.95 kg/m ²)
	4 ft. X 12 ft.	18.3 lbs (6.83 kg) or 0.38 lbs/ft ² (1.86 kg/m ²)
	With Water:	
	4 ft. X 8 ft.	51.1 lbs (19.1 kg) or 1.60 lbs/ft ² (7.81 kg/m ²)
	4 ft. X 10 ft.	59.8 lbs (22.3 kg) or 1.50 lbs/ft ² (7.32 kg/m ²)
	4 ft. X 12 ft.	68.5 lbs (25.6 kg) or 1.43 lbs/ft ² (6.98 kg/m ²)

MOUNTING THE SOLAR COLLECTORS

BRACKET INSTALLATION

1. Locate hold down clamp on roofing above subroof or sheathing. (Do not attempt to attach clamps to roof material only!)
2. Mark and drill a pilot hole.
3. Inject the sealant into the pilot hole and on the bottom of the hold down clamp.
4. Put the lag screw into the hold down clamp and tighten into the roof structure.

BUILT UP ROOFING

A tar and gravel roof requires special care. For further instructions contact your local roofing contractor.

PANEL COUPLINGS

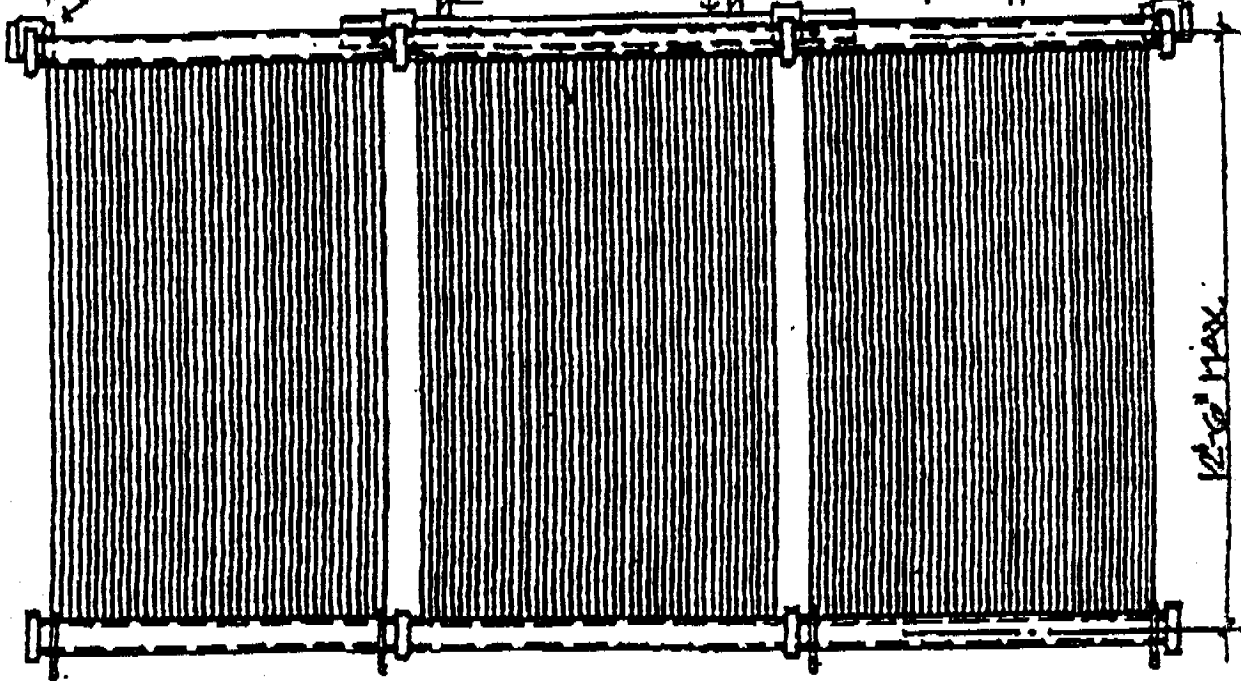
1. Short couplers (3 1/2" rubber couplers) are used to join the panels together and to attach the end cap and vacuum relief valve.
2. Long couplers (5 1/2" rubber couplers) are used whenever panels are joined to PVC pipe.
3. When coupling panels together, the clamps must be positioned close to the lip of the header.
4. The vacuum relief valve and end cap clamps must also be positioned close to the lip of the header.
5. Tightening clamps:
 - a) Tighten all clamps as they are installed.
 - b) When you have completed the solar installation, retighten all clamps with the system on and water circulating through the collectors.
 - c) Care must be taken when tightening clamps to ensure they are not installed crooked.

NOTE: It may be necessary to split the bank of panels in order to avoid obstructions on the mounting surface, or use multiple banks of panels to accommodate specific site requirements. Split packs or bank packs are available for use in this case.

SEE NOTE AT RIGHT

57" CONT. "Z-BAR" BOLT EACH END

"Z-BAR", "C CLAMP", OR STRAP

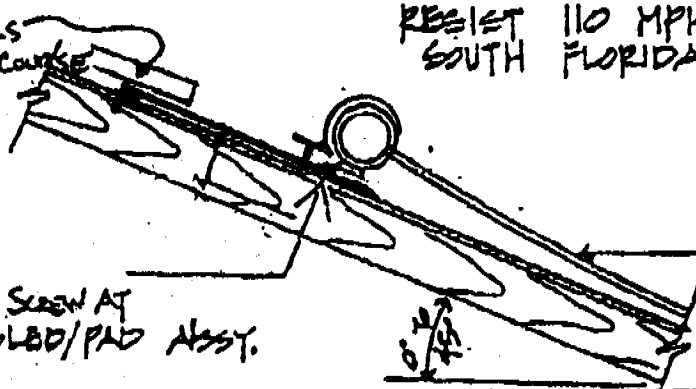


SPECIFIC CONDITIONS: ANCHORAGE OF THE COLLECTOR PANELS SHALL CONSIST OF PLASTIC PANEL CLAMPS (P.P.C.), PLASTIC SLED, AND ALUMINUM PLATE OR "Z-BAR"

BRACKET HOOKS @ UPPER TILE COURSE

RESIST 110 MPH WIND PER SOUTH FLORIDA BUILDING CODE.

MIN. (1) STEEL TEB SCREW AT EACH P.P.C./SLED/PAD ASSY.



COLLECTOR RIVER SYSTEM.

ANCHORING OF THE SoloTube™ COLLECTORS

LONG "Z-BAR" CONNECTION

FAFCO, Inc.
2690 Middlefield Road
Redwood City, CA 94063
Phone: (650) 363-2690
FAX: (650) 363-2890

20 JANUARY 98

TILE ROOF

SHEET 1



HOW TO CONNECT THE SOLAR COLLECTORS TO EXISTING POOL FILTRATION SYSTEM

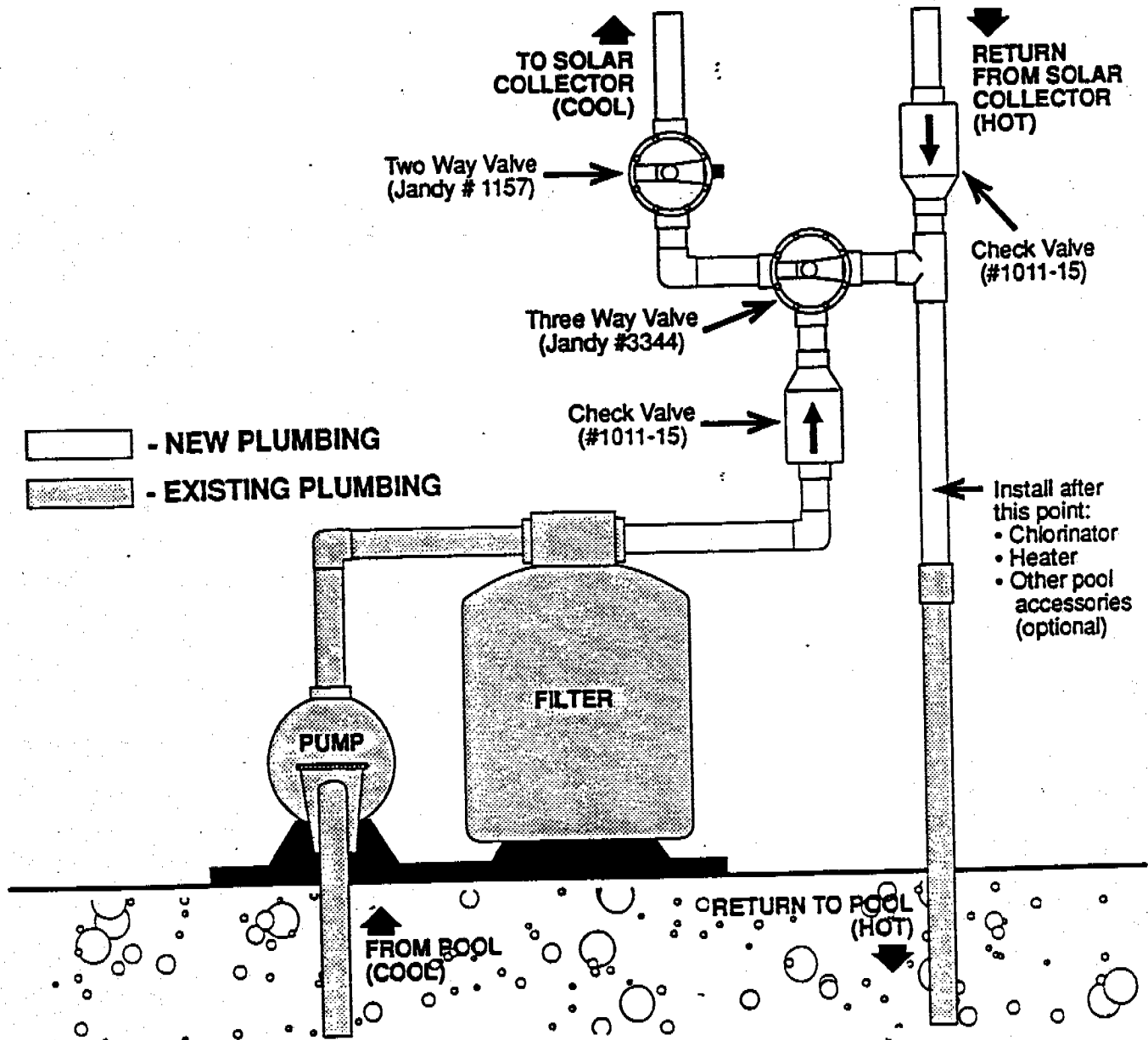


FIG 13.1