

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0602897

Insp Area: 4

Thos Bros: 27712

Site Address: 4301 MAY ST SAC

Parcel No: 237-0570-052

Sub-Type: RES

Housing (Y/N): N

CONTRACTOR
PARK MECHANICAL
7975 RAMONA AV
SACRAMENTO CA 95826

OWNER
ROBBINS BELINDA
4301 MAY ST
SACRAMENTO, CA 95838

ARCHITECT

Nature of Work: C/O SPLIT SYSTEM HVAC

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 20 License Number 335561 Date 03/03/06 Contractor Signature Merald David M. J.

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 exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: 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 & PC for this reason: F-10

Date _____ Owner Signature _____

CITY OF SACRAMENTO
MAR 03 2006
NEW CITY HALL

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 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 03/03/06 Applicant/Agent Signature Merald David M. J.

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 ACORD

Policy Number Z067716401

Exp Date 10/01/2006

(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 03/03/06 Applicant Signature Merald David M. J.

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.

Duct Diagnostic Summary

2/18/06 prepared for

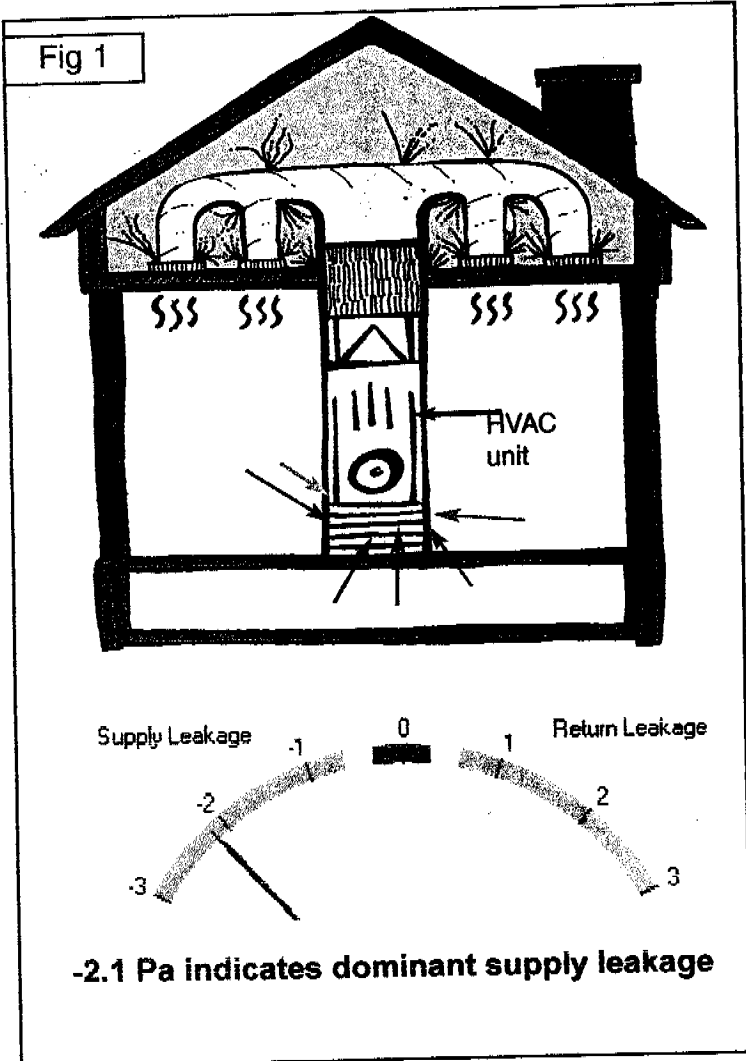
Florence Robbins
4301 May St. 3 ton
Sacramento, CA 95838
(916)614-9039



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Sacramento, CA 95822
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060 2897
4301 May St

Duct Leakage Analysis



HVAC systems operate with a fan that pulls interior air into the return duct and pushes the conditioned air out through the supply ducts. **Typical duct systems lose 25-40% of the heating and cooling energy put out by the HVAC system.**

A house pressure test is used to diagnose duct leakage by measuring changes in internal building pressures caused by supply or return duct leakage when the HVAC system fan is running.

Building pressures, measured in "pascals", will not change if equal amounts of air are pulled in and pushed out the duct system.

Positive building pressures occur when return duct leaks draw outside air into the system from attics, basements, or crawl spaces. More air will be pushed into your living space than is being drawn out.

Negative building pressures occur when leaky supply ducts lose conditioned air directly to the outside. Less conditioned air comes back into your living space than is being pulled out by the return duct.

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Buildings with tight duct systems or buildings with equally leaky supply and return ducts will display little or no change in interior pressure. A second test is required to distinguish between tight and equally leaky ducts.

See Figure 2 on next page.



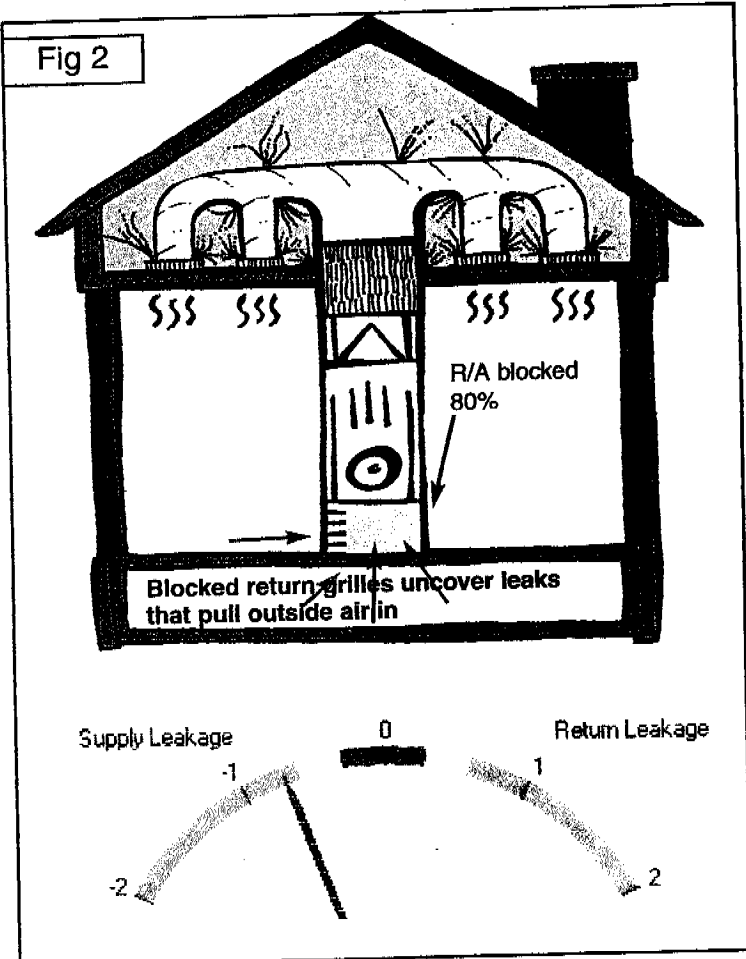
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Duct Leakage Analysis (Return Blocked Test)



The Return Blocked Test uncovers leakage that would be "hidden" if supply leaks are equal to return leaks. By partially restricting the air intake at the return grille, the HVAC fan is forced to pull air through any return side leaks. This extra "outside" air will be pushed into the building through the supply ducts, increasing the interior pressure.

If the ducts have little or no leakage, the interior building pressure would be unaffected by partially blocking the return grille. (Less air going in, less air coming out)

Positive pressure changes in the yellow or red zone indicate significant return side leakage as well as supply leakage.

Return duct leakage, which often bypasses the filters, can pull unconditioned air, dust, mold, insulation fibers, and other pollutants directly into your rooms. Supply duct leakage reduces system capacity, makes rooms uncomfortable and increases energy bills.

DIAGNOSTIC SUMMARY



Duct leakage analysis tests indicate your building has approximately..... **> 25%** combined leakage from the supply and return air ducts.

This diminishes system capacity by approximately..... **30%**

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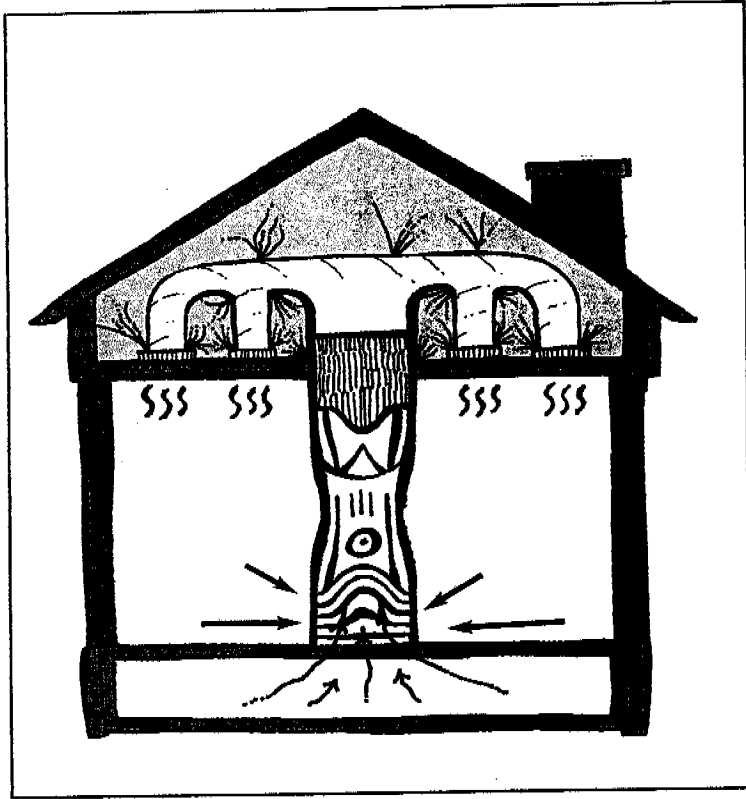
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Unit #1 **Return Air Performance Test**



Restricted return openings or ducts will cause:

- System capacity reductions
- Lower room air flows
- Loss of efficiency
- Noisy or whistling grilles
- Compound any existing return leakage (The fan will get air wherever it can)

Performing an **air velocity test** can diagnose "restricted" systems that are "starving" the unit for air.

DIAGNOSTIC SUMMARY

Return Air Grille Velocity	
Your total room air flow	547 cfm
÷ grille area	2.4 sq.ft.
= velocity	225 fpm*

@ 400 cfm/ton Industry Standard:
1200 cfm Filter-grille air velocity should not
2.4 sq.ft. exceed 300 fpm*
494 fpm* Standard grille velocity should not exceed 500 fpm*

*feet per minute

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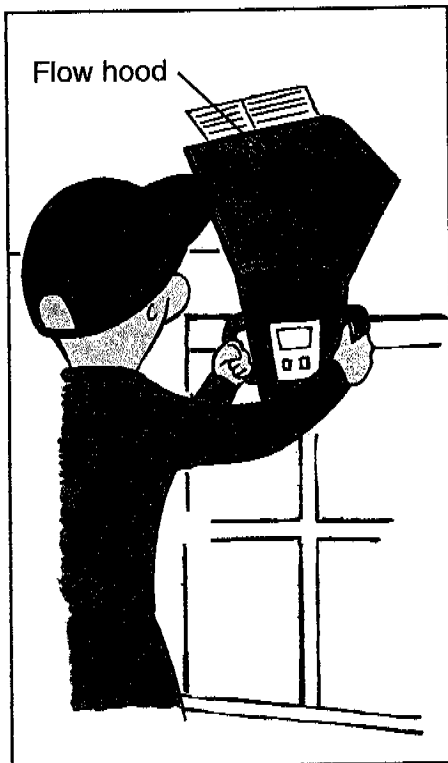


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Unit #1

Room Air Flow Test



Room	Size	Measured Flow CFM	Industry Standard	Your % of Standard
kitchen	176	101	150	68
living room	358	149	304	49
guest room 1	112	70	95	74
office	115	53	98	54
master bedroom	160	106	136	78
master bath	64	25	54	46
hall bath 1	44	18	37	48
utility room	30	25	26	98

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DIAGNOSTIC SUMMARY

Your total Register Flow: **547 CFM**

Flow recommended for your equipment @400 cfm* per ton: **1200 CFM**

54% Reduction in System Flow

*cubic feet per minute

Low supply register flows indicate:

- Excessive duct leakage
- Restricted return air ducts or grille openings
- Crimped or improperly designed supply air ductwork
- Dirty coils in older systems
- Incorrect fan speed setting

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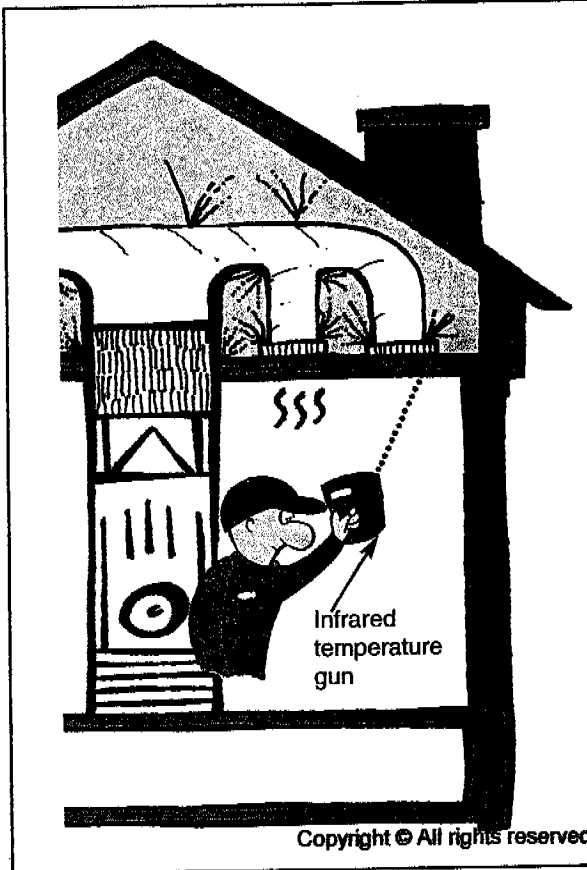


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Unit #1

Register Temperature Test



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Register Location	Temperature	% loss of capacity
Return # 1	60	
master bedroom	41	
guest room 1	42	5
utility room	43	11
office	43	11
hall bath 1	45	21
master bath	46	26
living room	46	26
kitchen	46	26

DIAGNOSTIC SUMMARY

Recommended cooling drop across coil: 15-20° F
(8-11°C)

(return air temp - coolest register) Yours: 19°

- An excessive temperature drop suggests low flow due to a restricted return or a dirty coil.
- A small temperature drop suggests a bad compressor, return duct leakage, or incorrect refrigerant charge.

Outside temperature: 62°

Duct surrounding temperature: 72°

Registers with losses greater than 25% should have duct insulation or air flows increased