



Sales Plan

TITLE:

Comfort Specialist Program Addendum 2 – Performance Guarantee

DATE: **January 1, 2010** NO: **SP1029.2**

DEPARTMENT: **Channel Marketing**

FILE NO: **2.1.09**

I. EFFECTIVE PERIOD:

January 1, 2010 through December 31, 2010

II. PURPOSE: Heating and air conditioning products must be applied and installed properly in order to perform as designed by the manufacturer. In essence, the independent Trane Comfort Specialist™ (TCS) dealer is completing the manufacturing process when they install Trane equipment in their customer's home. The Commissioning Checklist (Exhibit A) described in this sales plan is in fact the final quality control test for the system. The following process is designed to provide the consumer with an additional level of confidence that the Trane system and installing TCS dealer will address their comfort needs and deliver the factory rated performance of the HVAC system. This sales plan addendum will detail the elements of **100% Performance Guarantee** offered by independent Trane Comfort Specialist dealers to homeowners purchasing new complete system(s) for their home.

III. ELIGIBLE PARTICIPANTS:

2010 independent Trane Comfort Specialist dealers (referred to as "dealers" throughout this sales plan)

IV. Plan Details

A. The Consumer Offer

- The purchased Trane HVAC system will perform at the rated capacity designed by the manufacturer when properly installed in the consumer's home.
- The installing dealer and, as needed, the local Trane Field Service Representative (FSR) will be available to review the operation of the installed system and promptly address any performance concerns raised by the homeowner. Every reasonable effort must be made by the dealer to return the Trane system to factory specified performance.

- If the system performance does not meet the factory specified performance the, dealer and the FSR will make every reasonable effort to resolve the performance issues. If these efforts still do not satisfy the homeowner within the first year of operation, then the TCS dealer will offer the homeowner an option to remove the Trane equipment and refund the consumer's purchase price of the Trane product.

B. Comfort Specialist Dealer Responsibilities

- The dealer must perform a heat gain / heat loss calculation for every system they install and be able to provide evidence that the selected equipment will satisfy the house sensible and latent load requirement at outdoor design temperatures.
- The dealer must also inspect and evaluate the existing ductwork and discuss any deficiencies that could cause comfort issues with the homeowner and **note them on the proposal.**
- After the Trane system has been installed, the dealer **must complete the designated commissioning check list**, which is based on the HVAC Quality Installation Specification (ANSI / ACCA Standard 5-2007) (Exhibit C) in either the heating or cooling mode based on the ambient conditions at the time of installation.
 - The checklist can be completed in one of two ways
 - Electronically with the performance Excel spreadsheet
Pub. No 34-4096-01
 - Hand written forms (available in pads of 25 sheets with instructions)
 - Pub. No. 34-4096-1P5 for 5 pads
 - Pub. No. 34-4096-1P10 for 10 pads
 - Pub. No. 34-4096-1P25 for 25 pads
 - Instruments needed to complete the checklist include the following: (Consult Pub. No 34-4096-01 for more details) (Exhibit B)
 - Voltmeter (RMS corrected) (for variable speed components)
 - Ammeter (RMS corrected) (for variable speed components)
 - Digital thermometer or duct probe
 - Digital thermometer with a pipe clamp thermocouple
 - Refrigerant gauges
 - Magnahelic (measure static pressures)
 - Dual input manometer (measure gas pressure)
 - Calculator

- Assorted hand tools
- Any performance deficiencies identified by the commissioning check list must be analyzed and corrected immediately so that the measured system capacity is within 5% of the rated factory performance.
- Post installation problems should be examined and rectified promptly at the homeowner's convenience.
 - The local Trane FSR should be contacted and apprised of persistent problems and must be consulted if additional troubleshooting assistance is required when the dealer is not able to resolve the problem.
- If all attempts to resolve the consumer's complaint fail causing their relationship with the dealer to be damaged beyond repair, then the three parties (including the homeowner, the installing dealer, and the FSR) can agree to buy back the Trane equipment.
 - The installing dealer should remove the Trane equipment and refund the consumer's purchase price for it including labor.
 - A claim for the dealer's equipment cost may be submitted to the FSR. **The claim must be accompanied by a copy of the commissioning report along with the documented service history of the system.**
 - If the job had been financed, all reimbursements must be made through the financial institution holding the loan.

C. Trane Distribution Responsibilities

- Upon notification by the TCS dealer of an unresolved performance problem, the Trane FSR must be available to review the commissioning report and request additional diagnostic measurements as required by the circumstances.
- The FSR should be available to help resolve any performance issues with the job.

V. Administration:

A. Equipment Re-Imbursement

- Using Falcon, the FSR will submit repurchase claims attaching commissioning reports and any additional troubleshooting guides used for resolution
- All FSR claims submitted under this program require the _PG_ transaction type. (PG = Performance Guarantee)
- Field Operations Excellence (FOE) will maintain a file of all approved transactions for measuring the office's program usage. FOE will review claims periodically to assess possible program misuse and will alert the TCS program leader where concerns exist.

B. Equipment Exchange

- In the event that an equipment exchange is deemed to be appropriate by the FSR, approval will be handled outside of this sales plan, using the same process that has been in place, including advance authorization where required and CRM documentation.
- This sales plan does not offer any additional funds for an equipment exchange.

TERMINATION:

This plan is subject to termination or modification at any time by Trane Residential Solutions, but such termination or modification shall not affect rights hereunder with respect to sales or contractual commitments made prior to the time of such termination or modification.

System Commissioning Report **Used for Split or Pkg A/C, HP, or Gas Elect.** **Cooling Mode**

1 Dealer _____ Technician _____ Consumer _____ Date _____

Process for Cooling Mode		Value	Process for Cooling Mode	Value
ID	Set thermostat to call for maximum cooling		OD Calculate & record Super Heat	
	Gather necessary tools and instruments		OD Calculate & record Subcooling	
	Allow system to operate 15 minutes before recording operational data		OD Verify that liquid subcooling is near the desired subcooling value	
ID	Record dip switch settings at bottom of page for ID blower if Variable Speed. (Section 5)		OD Incoming OD High Voltage with system operating	
ID	CFM LED Flash Rate		OD Record Low Voltage with system operating	
ID	Motor spd tap if non-Variable Speed		OD Record total OD unit amps	
ID	Motor amps		ID A/H, or on pkg units, measure Return Air static at unit inlet	
ID	Incoming power - Line 1 to ground with equipment in operation (If pkg unit or HP OD)		ID A/H, or on pkg units, measure Supply Air static at unit outlet	
ID	Incoming power - Line 2 to ground with equipment in operation (If pkg unit or HP OD)		ID A/H, or on pkg units, calculate total ext. static	
ID	Incoming power - Hot to Neutral with equipment in operation (Gas Heat only)		ID Furnaces, record static between coil and furnace	
OD	Install gauges on OD unit		ID Furnaces, record Return Air static at ID unit inlet	
OD	Attach pipe clamp thermocouple to liquid line near service valve (Non-contact type is N/A)		ID Furnaces, calculate total external static	
	Complete equipment portion of document (Section 3 below) while system is stabilizing		ID Record CFM from service facts or product data	
OD	Record discharge or liquid pressure		ID Return Air DB temperature at return air grille	
OD	Determine high side saturation temperature		ID Return Air DB temperature at indoor unit	
OD	Record suction pressure		ID Return Air WB temperature at indoor unit	
OD	Determine low side saturation temperature		ID Supply Air DB temperature at indoor unit	
OD	Record desired Subcooling from unit nameplate or Service Facts		ID Supply Air WB temperature at indoor unit	
OD	Record OD temperature		ID Calculate and record DB temperature drop at indoor unit	
OD	Record liquid line temperature and move pipe clamp thermocouple to suction line		ID Determine Return Air enthalpy	
OD	Liquid Line size		ID Determine Supply Air enthalpy	
OD	Suction line size		ID Calculate enthalpy difference	
OD	Line length in feet		ID Calculate unit capacity (cig. = 4.5° CFM*enthalpy diff)	
OD	ID unit is above OD unit _____ ft, OR ID unit is below OD unit _____ ft		ID Adjust thermostat for desired setting	
OD	Record suction temperature and remove pipe clamp thermocouple.			

Complete the check blocks in Section 4 below

Equipment Info.	OD Unit	Furnace or Air Handler	Coil or Strip Heat	Comfort Control (Thermostat)	Other Accessory
Model					
Serial					
Installation Date					

Check Blocks	Load Calculation completed	Condensate drain with trap flow tested	Secondary pan flow tested
	Ducts pressure tested and sealed	Air balance completed	OD unit, ID unit, & thermostat level
Vent system complies with code	Hole behind thermostat sealed	Grilles & registers sealed to wall/ceiling	
Explained system operation to owner	Equipment documentation given to owner	Warranty explained / registered	

Dip Sw. Setup	1	2	3	4	5	6	7	8
(VS Only)	ON	ON	ON	ON	ON	ON	ON	ON
Circle Pos.	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

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Customer Signature _____ Pub. No. 34-4096-01

System Commissioning Report **Used for Split or Pkg HP, Gas or Electric Heat** **Heating Mode**

1 Dealer _____ Technician _____ Consumer _____ Date _____

Process for Heating Mode		Value	Process for Heating Mode	Value
ID	Set thermostat to call for maximum heating (temporarily disable electric heat on HP sys)		ID A/H, or on pkg units, measure Return Air static at unit inlet	
	Gather necessary tools and instruments		ID A/H, or on pkg units, measure Supply Air static at unit outlet	
	Allow system to operate 15 minutes before recording operational data		ID A/H, or on pkg units, calculate total ext. static	
ID	Record dip switch settings at bottom of page for ID blower if Variable Speed. (Section 5)		ID Furnaces, record static between coil and furnace	
ID	CFM LED Flash Rate		ID Furnaces, record Return Air static at ID unit inlet	
ID	Motor spd tap if non-Variable Speed		ID Furnaces, calculate total external static	
ID	Motor amps		ID Record CFM from service facts or product data	
ID	Incoming power - Line 1 to ground with equipment in operation (If pkg unit or HP OD)		ID Return Air DB temperature at return air grille	
ID	Incoming power - Line 2 to ground with equipment in operation (If pkg unit or HP OD)		ID Supply Air DB temperature at indoor unit	
ID	Incoming power - Hot to Neutral with equipment in operation (Gas Heat only)		ID Return Air DB temperature at indoor unit	
ID	Record low voltage with equipment in operation		ID Calculate and record temperature rise at indoor unit	
OD	Install gauges on OD unit		ID Calculate unit capacity (htg. = 1.08° CFM*temp rise)	
	Complete equipment portion of document (Section 3 below) while system is stabilizing		ID Record Fuel Type (Gas heat only)	
OD	Record discharge pressure		ID Fuel Line Size (Gas heat only)	
OD	Record suction pressure		ID Incoming Gas Press HI Fire (Gas heat only)	
OD	Record OD temperature		ID Manifold Press HI Fire (Gas heat only)	
OD	Liquid Line size		ID Manifold Press LO Fire if multistage (Gas heat only)	
OD	Suction line size		ID Vent Sys - Single wall size (Gas heat only)	
OD	Line length in feet		ID Vent Sys - B Vent size (Gas heat only)	
OD	ID unit is above OD unit _____ ft, OR ID unit is below OD unit _____ ft		ID Other Vent Material _____ & size (Gas heat only)	
OD	Incoming OD High Voltage with equipment in operation (If HP OD)		ID Combustion Air Source (Gas heat only)	
OD	Record Low Voltage with equipment in operation (If HP OD)		ID Combustion air opening size (Gas heat only)	
OD	Record total OD unit amps (If HP OD)		ID Actual vent length (Only on 90%+ AFUE) (Gas heat only)	
			ID Equivalent vent length (Only on 90%+ AFUE) (Gas heat only)	
			ID Adjust thermostat for desired setting	

Complete the check blocks in Section 4 below

Equipment Info.	OD Unit	Furnace or Air Handler	Coil or Strip Heat	Comfort Control (Thermostat)	Other Accessory
Model					
Serial					
Installation Date					

Check Blocks	Load Calculation completed	Condensate drain with trap flow tested	Secondary pan flow tested
	Ducts pressure tested and sealed	Air balance completed	OD unit, ID unit, & thermostat level
Vent system complies with code	Hole behind thermostat sealed	Grilles & registers sealed to wall/ceiling	
Explained system operation to owner	Equipment documentation given to owner	Warranty explained / registered	

Dip Sw. Setup	1	2	3	4	5	6	7	8
(VS Only)	ON	ON	ON	ON	ON	ON	ON	ON
Circle Pos.	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

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Customer Signature _____ Pub. No. 34-4096-01

Instruments for Commissioning Systems

- **Voltmeter** – (RMS Corrected meter is required when measuring variable speed components)
 - **Ammeter** – (RMS Corrected meter is required when measuring variable speed components)
 - **Digital thermometer** – (hot wire anemometer preferred for quick readings of dry bulb, wet bulb, humidity) or,
 - **Duct probe** capable of quick dry bulb plus, wet bulb or humidity readings – (Testo Humidity Stick or equivalent)
 - **Pipe clamp thermocouple** attachment for digital thermometer – (Fieldpiece, Fluke, or equivalent), (2 probes will allow simultaneous superheat and subcooling measurements)
 - **Gauges** for R-22 & R-410A refrigerants
 - **Magnahelic** – (or equivalent) or inclined gauge or dual input digital manometer to measure static pressures
 - **Manometer** for gas pressure measurements. U tube or digital
 - **Tape measure**
 - **Assorted hand tools**
- Resources**
- Service Facts - found in most ID and OD equipment
 - Saturation tables (*can use temp. scales on gauges*)
 - Enthalpy table pocket reference Pub. No. 34-4097-01
 - Calculator

Notes for Completing Commissioning Reports

- This document is used for two main purposes:
 1. *To establish system performance parameters at the time of equipment startup and*
 2. *To assist technicians in capturing system performance information when requesting technical assistance. For troubleshooting assistance, your FSR may require completion of a more detailed form.*
- This form is intended to cover the large majority of applications. It will not be 100% applicable to every installation. Simply enter N/A in any space where the data is not applicable.
- When commissioning new installations, complete either the cooling mode or heating mode form.
- If equipment is multi stage, all performance measurements are to be taken in high stage unless stated differently.
- Wet bulb readings are not required for the heating mode.
- The 1.08 factor used in capacity calculations is only good at sea level. Other factors are to be used for higher elevations. 1000' = 1.04, 2000' = 1.00, 3000' = .97, 4000' = .93, 5000' = .90
- Total external static is the sum of the supply static + the return static without regard to positive or negative.
- High side pressure on cooling units taken at the liquid service valve. High side pressure on heat pumps is taken at a discharge pressure port.
- Items in the section 4, need to be incorporated into the installation process.
- Shaded areas of the form are calculated fields which are automatically filled in on the electronic version.

ACCA Quality Installation Specification

1. Load Calculation performed on every installation
 - a. *Room-by-room load performed on residential / commercial new construction or when adding new duct work*
 - b. *Block load performed on existing construction without duct modifications*
 2. Equipment sized and selected to deliver sensible and latent load requirements
 - a. *Cooling & Heat Pumps – capacity between 95% and 115% of load*
 - b. *Furnaces – output capacity between 100% and 140% of load unless higher cooling CFM is required.*
 3. All components are matched per OEM or other industry certifying databases
 4. Total air flow across ID coils and heat exchangers is within 15% of design.
 5. Proper refrigerant charge
 - a. *Expansion valve systems +/- 3 degrees sub-cooling*
 - b. *Fixed orifice systems +/- 5 degrees superheat*
 6. Electrical requirements
 - a. *Line and Low voltages with allowable ranges as defined by nameplate*
 - b. *Amps within range specified on nameplate or by OEM*
 - c. *Wire sizes per NEC or equivalent*
 - d. *Grounding/bonding per NEC or equivalent*
 7. Fuel fired equipment will be fired at +/- 5% of nameplate
 8. Venting system shall comply with OEM instructions and applicable codes
 9. All operating and safety controls function in the correct sequence
 10. All ducts are sealed and leakage CFM is not to exceed the following
 - a. *New Construction*
 1. *Ductwork in conditioned space - 10% leakage*
 2. *Ductwork outside conditioned space – 6% leakage*
 3. *Energy Star homes – less than 4 CFM per 100 sq. ft of conditioned space*
 - b. *Existing Construction - 20% leakage*
- Note:** leakage rates include supply leakage plus return leakage
11. Room CFM within +/- 20% or 25 CFM for residential and +/- 10% or 25 CFM for commercial.
 12. Maintain system design documentation as well as service and maintenance history.
 13. Provide customer with knowledge to operate and maintain the system as well as all homeowner literature.

Refer to ACCA's HVAC Quality Specification for additional guidelines or clarification of the above requirements.



100% PERFORMANCE GUARANTEE

As you consider the right heating and air conditioning system for your home and the best dealer to install and maintain it, remember Trane's 100% Performance Guarantee, available only through our Trane Comfort Specialist™ dealers.

Trane products are designed, tested and built to last.

Independent Trane Comfort Specialist dealers have demonstrated a proven record of customer satisfaction, have the knowledge to recommend the right system for your home and the experience and factory training to install and maintain your system for the life of the product.

In appreciation of your trust in Trane and our independent Trane Comfort Specialist dealer, we can offer you a guarantee on the performance of your new Trane system. If, in the first year of use, it does not deliver the specified heating or cooling capacity, taking into consideration your application and ambient conditions which will be documented at the time of the installation, and we are not able to correct the problem, the installing Trane Comfort Specialist dealer will remove the Trane equipment and refund your entire purchase price for the removed equipment.

One more reason to choose Trane.

Trane already offers you the best in home comfort with high quality systems and support from highly trained Comfort Specialist dealers. The Trane 100% Money Back Guarantee gives you extra purchase protection and provides one more reason to choose Trane.

Dealer Name
Address 1
Address 2
Phone Number

Homeowner _____
Address _____

Dealer Signature _____ Date _____

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- Certificates are available from Petty Incredible Communications (Pub. No. OCS-5058-01) in two ways:
1. Customized with Dealer contact information (shown above)
 2. Generic with space for dealer to include contact information