# TruComfort Variable Speed Systems

### Introducing



### Trane TruComfort<sup>™</sup> Systems

Our quietest and most precise comfort experience.





## XV20i and XV18 TruComfort Systems



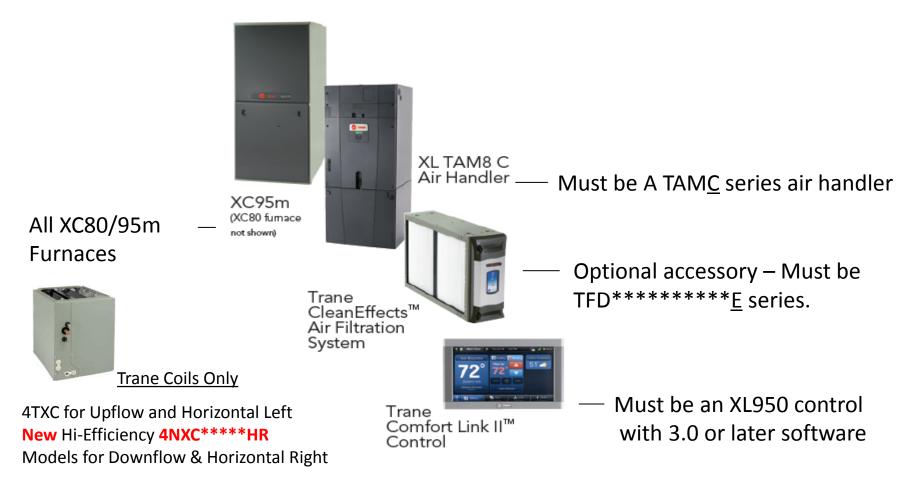
- Trane is the First to Offer Two SEER Levels of Variable Speed AC/HP Systems
- Available in 2-3-4-5 ton sizes
- Air Conditioners up to 21 SEER/14 EER
- Heat Pumps up to 20 SEER/13 EER/10 HSPF



First Order Date: April 1st for <u>All</u> Trane Dealers

**XV18** 

## **Approved Indoor Models for TruComfort Variable Speed Systems**





## New Compressor Speed Indicator for the XL950 Control





Blue Speed Dial for Cooling Mode

Red Speed Dial For Heating Mode



## Training is a Pre-Requisite to Sales for All Dealers



Distributors will be responsible for training dealers prior to purchasing Variable Speed Systems and ensuring they keep a trained technician on staff full time.

#### Single Inverter Drive for All Models



#### **Built in Drive** Diagnostics

#### Technician Control Menu

Forced Defrost, EEV, LSOV, Evacuation, Run Drive and Run Outdoor Fan tests are initiated and performed from the Technician Control Menu.

MENU

CONTROL MENU

RUN DRVTEST PRESS ENTER

RUN OD FAN?

Note: If system is in Lockout, Unit Tests are not available.

#### **Drive Test Notes**

MONITOR

MENU

TESTING

PASSED NO FAULT

SHORTED WIRE/WINDING

OPEN WIRE/WINDING

FAILED LOCKED ROTOR

MOTOR PWM

- Drive Diagnostics forces a shutdown and waits until compressor is completely coasted before running the drive diagnostic routine.
   The OD system will enter a hard lockout state to
- ensure no other system component is attempting to run.

  3. Show "TESTING" while internal diagnostics are
- being performed (about 30 seconds) One of five conclusions will be displayed at the end of the Drive Test as a result of running the
- test.

  At the conclusion of this test, the results screen will remain displayed until power is cycled or the best control will remain displayed until power is cycled or the control will rest option seems to Fault' the compressor will run for one minute.

  The user will then have the ability to scred up or down to visit an Exit Drive Test who clear the provent of the rest that the provider will reset the IVSC software and clear the provider will reset the IVSC software and clear
- the hard lockout state, 8, if the Drive Diagnostic test is not exited, a 2 hour timer will be kept, and upon expiration of that timer the IVSC will automatically reset itself.

### **Competitive Control Box Designs**



Nordyne – IQ Drive



**Carrier – Greenspeed** 



**Trane – TruComfort** 

Streamlined Control Box and Inverter Design "Reduces the Fear factor for Technicians" Standard Development Testing

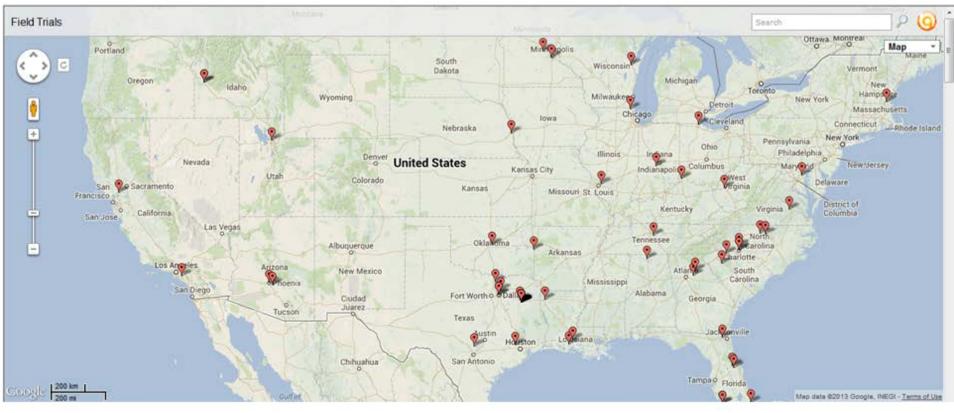






Variable Speed is not new Technology for Trane "It's Technology Perfected"

#### **TruComfort Field Trial Deployment Map**

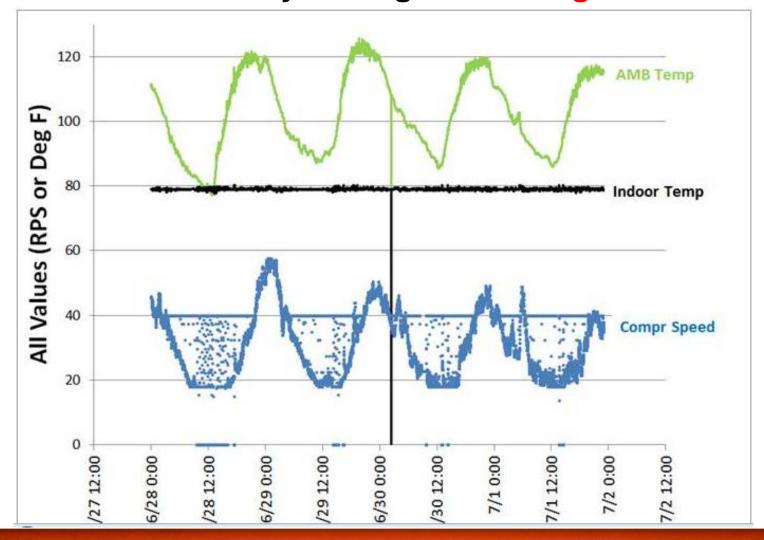


Good geographic coverage for both A/Cs and Heat Pumps

Our Most Extensive Field Testing Ever "Accumulated over 50,000 run hours"

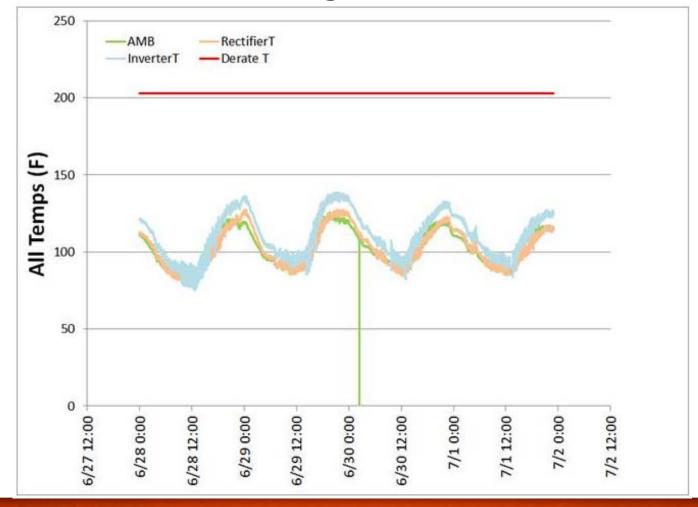


## Phoenix 5 Ton Field Trial System ran 97% of the time for 4 days straight - 120 degrees.





# Phoenix 5 Ton Field Trial Inverter de-rate temperatures were not reached even at 120 degrees ambient!





# TruComfort Consumer Value Proposition

#### Put your comfort on cruise control.



Trane TruComfort™ Variable Speed systems maintain a consistent temperature with maximum efficiency by automatically making minor, continuous adjustments in output all day long, all night long. The result is efficient, affordable and reliable comfort, like you have never seen before.

XV18 Heat Pump or Air Conditioner

"Efficient, Affordable and Reliable Comfort"

## XL & XV Heat Pump Efficiency Level Comparison

	SEER / EER / HSPF			
Tonnage	XL18	XL20i	XV18	XV20i
2 Ton	17.25/13.25/9.5	19/14/10	18/13/10	19.25/13.75/10
3 Ton	18/13/9.5	19/13/10	18/13/10	20.00/13/10
4 Ton	17.25/12.5/9.5	17.25/12.25/9.2	18/12.5/10	19.25/12.5/10
5 Ton	16/12/9.2	17.5/11.5/10	18/12.5/10	19/12.7/10

TruComfort Variable Speed Improves Comfort and Efficiency





## Thursday, Jan. 23, 2014: Trane Introduces Ultra High Efficiency Variable Speed System

January 23, 2014

NEW YORK — Trane is introducing the new TruComfort™ XV-S variable speed system, which delivers efficiencies of up to 27.5 SEER. The product represents Trane's next generation platform that builds upon the TruComfort variable speed technology used in the XV18 and XV20i. The XV-S demonstrates the scalability of TruComfort technology, which can be applied in the 17-21 SEER segment, as well as in ultra high-efficiency systems like the XV-S.

Shown posing with the new XV-S (from left to right) are Julie McLean, Shawn Laskoski, Tyson Stuelpe, Tim Storm, Matt Barga, and Larry Oliver.



# **Built On Our Tradition of Reliability and Innovation**







# TruComfort Air Conditioner Sound Level Comparison

Air Conditioners	Sound Level dBA			
All Colluttioners	Tonnage	Min Cool	Max Cool	
Trane XV18/20i	2	57	66	
Lennox XC25	2	59	70	
Trane XV18/20i	3	55	70	
Lennox XC25	3	59	73	
Trane XV18/20i	4	57	74	
Lennox XC25	4	66	74	
Trane XV18/20i	5	62	75	
Lennox XC25	5	64	74	

## TruComfort Heat Pump Sound Level Comparison

	Sound Level dBA					
Heat Pumps	Tonnage	Min Cool	Max Cool	Min Heat	Max Heat	
Trane XV18/20i	2	54	65	60	69	
Lennox XP25	2	58	68	58	68	
Carrier Greenspeed	2	58	63	62	71	
Trane XV18	3	56	70	60	74	
Trane XV20i	3	59	70	60	72	
Lennox XP25	3	58	73	58	73	
Carrier Greenspeed	3	58	65	62	75	
Trane XV18/20i	4	61	74	62	76	
Lennox XP25	4	64	74	64	74	
Carrier Greenspeed	4	65	70	64	76	
Trane XV18/20i	5	57	73	61	74	
Lennox XP25	5	64	74	64	74	
Carrier Greenspeed	5	65	72	64	76	



#### TruComfort XV & XL20i HP Sound Level Comparison

Hoot Dumps	Sound Level dBA			
Heat Pumps	Tonnage	Min Cool	Max Cool	
XV18/20i	2	54	65	
XL20i (Two Compressor)	2	62	72	
XV18	3	56	70	
XV20i	3	59	70	
XL20i (Two Compressor)	3	70	72	
XV18/20i	4	61	74	
XL20i (Two Compressor)	4	71	76	
XV18/20i	5	57	73	
XL20i (Two Compressor)	5	71	76	

TruComfort Systems are 8 to 14 dBA quieter than the XL20i at Minimum Cooling Speed!



## TruComfort Systems Start Quietly and Reduce Light Flicker

Heat Pumps	XV20i Variable Speed		XL20i Two Compressor	
Tonnage	RLA	LRA	RLA	LRA
2 Ton	11.5	10.2	8.7	58
3 Ton	18.4	10.2	13.7	60
4 Ton	21.1	12.0	18.6	93.4
5 Ton	27.5	12.0	23.4	128.7

TruComfort Systems Also Reduce the Required KW and Cost of a Whole House Home Generator



# TruComfort Competitive Weight Comparison (Uncrated)

20 SEED Hoot Dump	Weight			
20 SEER Heat Pump	2 Ton	3 Ton	4 Ton	5 Ton
XV20i Variable Speed	196	233	245	255
XL20i Two Compressor	330	335	420	420
Lennox XP25	277	277	341	335
Carrier Greenspeed	324	324	334	334

XV20i is 100 to 175 lbs lighter than XL20i and 44 to 128 lbs. lighter than the competition!



## TruComfort Systems Start Quietly and Reduce Light Flicker

Heat Pumps	XV20i Variable Speed		XL20i Two Compressor	
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TruComfort Systems Also Reduce the Required KW and Cost of a Whole House Home Generator



## Have you ever been asked... "What Size Air Conditioner do I need?"



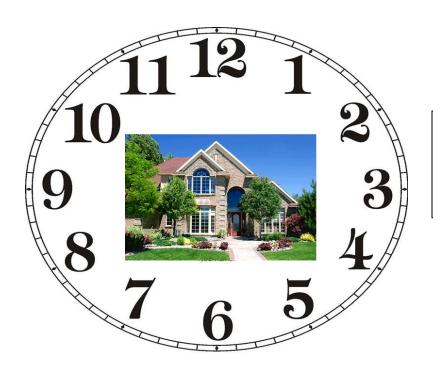
"Dealers use a Manual J Load Calculation to Size Equipment"

#### Do you need 4 Tons 24 hours a Day?



Tiffany Lt BT (Demi)

# No, that's why TruComfort systems were designed with the widest operating range on the market today!



The system that runs the longest before cycling provides the "Most Precise Comfort Control"

Tiffany Lt BT (Demi)



# The Widest Operating Range Available...."Advantage Trane"



Operating Range (%) 25-100 XV18/20i HP 30-100 XV18/20i AC

Advantage 10-15% 5-10%



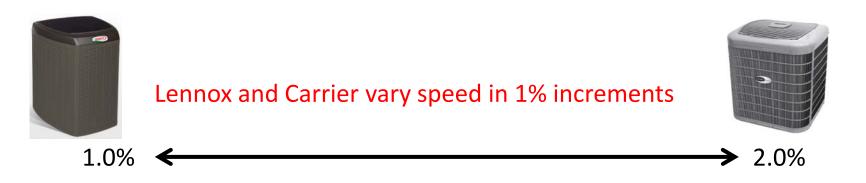
35-100 XP25 Lennox Heat Pump 35-100 XC25 Lennox AC



40-100 Carrier Green Speed (HP Only)

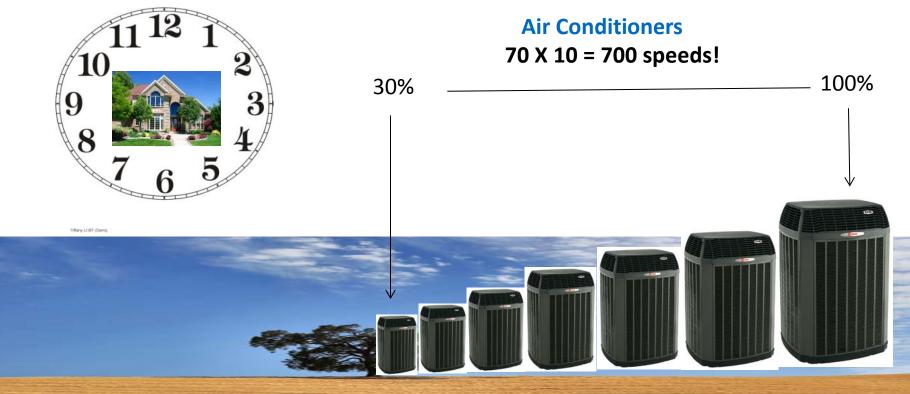


### TruComfort Technology allows System Speed Changes that are More Precise





TruComfort Air Conditioners can vary output capacity 24 hours a day to precisely, quietly and efficiently match the load on the home

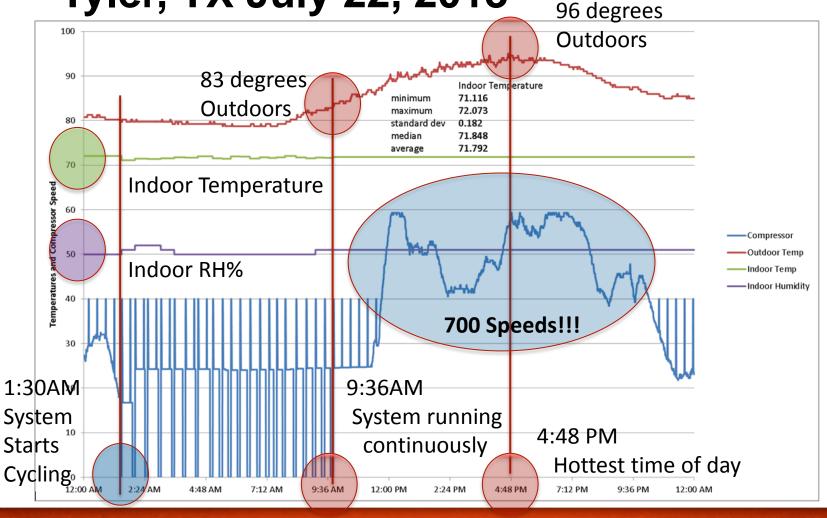


Max Speed during Day – Minimum Speed at Night

• MASTERING THE BUSINESS OF WINNING

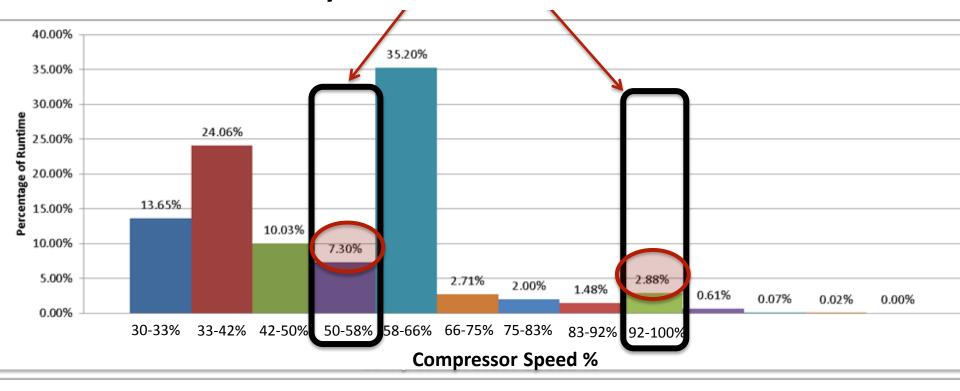


Blair 3 Ton HP Field Trial Site Tyler, TX July 22, 2013



### **Blair 3 Ton HP Field Trial-Tyler TX**

Even with the XL20 you are Over or Undersized 90% of the time!



50% on 1st Stage

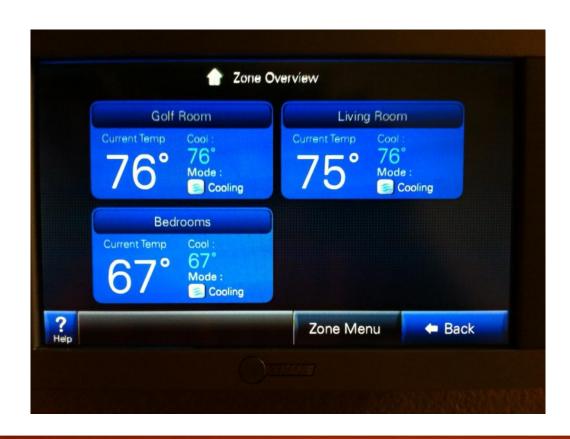
100% on 2nd Stage



# Tyler, TX Sep 20, 2013 Storm Field Trial – 4 Ton Heat Pump ComfortLink II Zoning Installed

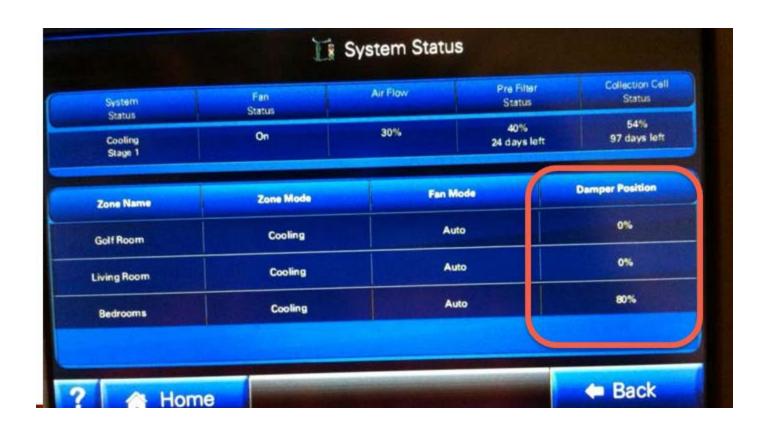


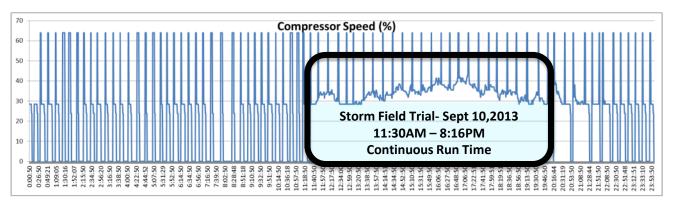
# TruComfort Systems and ComfortLink II Zoning Can Eliminate Those Hot Summer Nights!



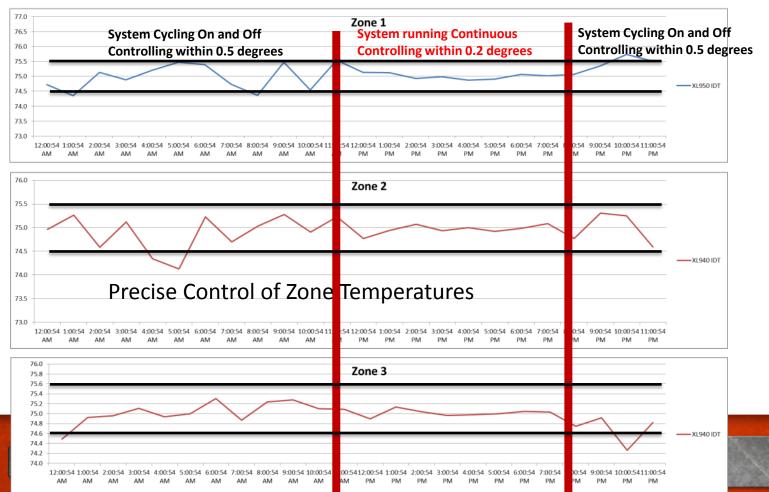
If you like to sleep with a blanket...now you can!

# TruComfort 25 to 100% Capacity Allows Improves Temperature Control in Smaller Zones





System begins to run Continuous as the Outdoor Temperature increases



## ComfortLink II Zoning Storm Field Trial - September 10<sup>th</sup> 2013 ... All Zones set for 75 Degrees Cooling

Zone	1	Zone	2	Zone	3
Time	950	Time	940	Time	940
12:00:54 AM	74.7	12:00:54 AM	75.0	12:00:54 AM	74.5
1:00:54 AM	74.3	1:00:54 AM	75.3	1:00:54 AM	74.9
2:00:54 AM	75.1	2:00:54 AM	74.6	2:00:54 AM	75.0
3:00:54 AM	74.9	3:00:54 AM	75.1	3:00:54 AM	75.1
4:00:54 AM	75.2	4:00:54 AM	74.3	4:00:54 AM	74.9
5:00:54 AM	75.5	5:00:54 AM	74.1	5:00:54 AM	75.0
6:00:54 AM	75.4	6:00:54 AM	75.2	6:00:54 AM	75.3
7:00:54 AM	74.7	7:00:54 AM	74.7	7:00:54 AM	74.9
8:00:54 AM	74.4	8:00:54 AM	75.0	8:00:54 AM	75.2
9:00:54 AM	75.5	9:00:54 AM	75.3	9:00:54 AM	75.3
10:00:54 AM	74.5	10:00:54 AM	74.9	10:00:54 AM	75.1
11:00:54 AM	75.5	11:00:54 AM	75.2	11:00:54 AM	75.1 -
12:00:54 PM	75.1	12:00:54 PM	74.8	12:00:54 PM	74.9
1:00:54 PM	75.1	1:00:54 PM	74.9	1:00:54 PM	75.1
2:00:54 PM	74.9	2:00:54 PM	75.1	2:00:54 PM	75.0
3:00:54 PM	75.0	3:00:54 PM	74.9	3:00:54 PM	75.0
4:00:54 PM	74.9	4:00:54 PM	75.0	4:00:54 PM	75.0
5:00:54 PM	74.9	5:00:54 PM	74.9	5:00:54 PM	75.0
6:00:54 PM	75.1	6:00:54 PM	75.0	6:00:54 PM	75.0
7:00:54 PM	75.0	7:00:54 PM	75.1	7:00:54 PM	75.0
8:00:54 PM	75.1	8:00:54 PM	74.8	8:00:54 PM	74.8
9:00:54 PM	75.3	9:00:54 PM	75.3	9:00:54 PM	74.9 -
10:00:54 PM	75.7	10:00:54 PM	75.3	10:00:54 PM	74.3
11:00:54 PM	75.5	11:00:54 PM	74.6	11:00:54 PM	74.8

Now that's
- Precise
Temperature
Control!



#### XL20i Phase Out



- August will be the last order date for our distributors to order the XL20i AC/HP.
- Now is the time to get all of your technicians certified on the new TruComfort variable speed systems

#### **Sales Promotions**



XV18/XV20i AC / HP First Order Date: April 1st

- Improved Personal Use Program for dealer associates
- \$350 dealer rebate extended through June 30<sup>th</sup>
  - Can be used in conjunction with other programs



Happy Selling!

## SALES AND MARKETING MATERIALS

### Variable Speed Launch Kits



Customer Support and Literature
Ordering Center

Home » Catalog

#### **Product Information**

Launch Kit: TruComfort™ Variable Speed, Dealer Version (Sold individually, minimum of 5) 62-7153-02KIT

Description: Revision in process, Expected March, While Supplies Last

SKU: 62-7153-02KIT

Description: Launch Kit: TruComfort™ Variable Speed, Dealer Version 62-7153-02KIT

#### **Order Information**

Lead Time: 5 Business Days

	Qty:	5-19	20+		
	Unit Price:	\$31.80	\$29.50		
Price does not include tax					

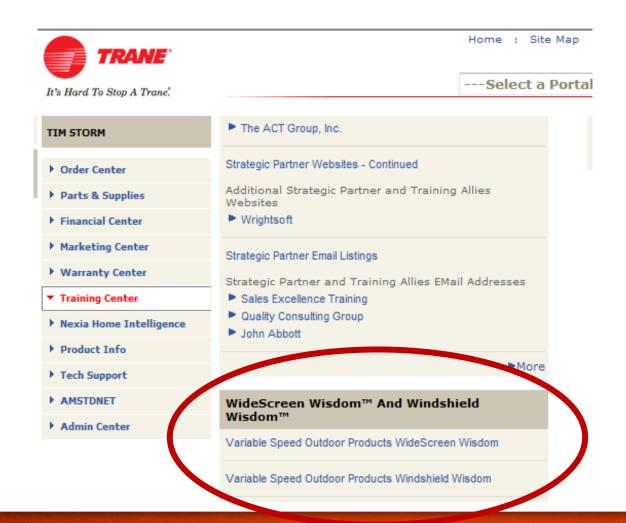




#### **Dealer Launch Kits-Non-TCS**

- Cover Letter
- 1 CD/DVD (22-8395-01)
- 1 Dealer Brochure (62-7150-02)
- 1 FAQ (62-7151-03)
- 1 Consumer Brochure (72-1305-02)

#### **Variable Speed Training Materials**



# Widescreen Wisdom DVD Video Files Now Available for Download from Comfortsite



Admin Center



#### Variable Speed Outdoor Products WideScreen Wisdom

- Mark Wagner Introduction TruComfort Variable Speed
- Role Play: Selling TruComfort at the Kitchen Table by The ACT Group
- Field Trial Testimonies TruComfort Variable Speed
- Installation TruComfort Variable Speed



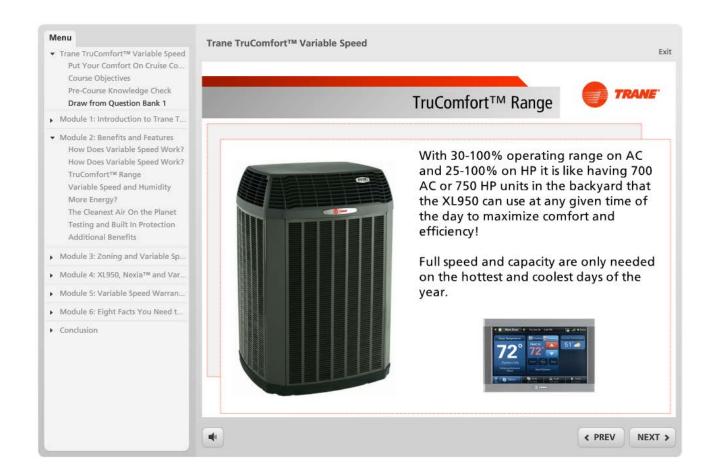
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# Windshield Wisdom Audio Files Now Available for Download from Comfortsite





### TruComfort eLearning



#### **Quick Hits for Dealers**

#### Trane TruComfort™ Variable Speed

Use this as a tool to recap important information on TruComfort Variable Speed Systems with your employees and customers..

#### **Key Selling Points**

- ✓ TruComfort systems operate like the cruise control in your car, continually adjusting speed/capacity to maintain your desired indoor comfort levels
- √ 100% capacity or speed is only required on the hottest or coldest days
- ✓ <u>TruComfort</u> systems have the widest operating range available on the market
- ✓ The ability to operate at lower output capacity provides sound levels 4 dB quieter than the nearest competitor
- ✓ Moisture removal and air filtration effectiveness also improve with longer run times at reduced capacity
- ✓ Having a <u>TruComfort</u> system is like having 700-750 air conditioners or heat pumps in your back yard that the XL950 thermostat can choose to operate
- ✓ This provides homeowners with the quietest and most economical operation for year round comfort



#### **Trane Advantages**

- √ 18 and 20 SEER AC/HP families
- √ 4 dB quieter than nearest competitor
- ✓ Widest operating range available
- √ 700-750 speeds (10 X more)
- ✓ Liquid cooled Inverter drive
- ✓ First with XV1500 variable in 1987
- ✓ This is not new Technology for Trane

#### Save an average of up to \$564 on energy costs each year.\*

System efficiency is measured in SEER, (Seasonal Energy Efficiency Ratio) and HSPF (Heating Seasonal Performance Factor). The higher the SEER and HSPF, the greater the system's energy efficiency, and the lower the overall carbon footprint of your household.

System	Туре	Efficiency Rating			
XV20i	Air Conditioner	up to 21 SEER			
XV20i	Heat Pump	up to 20 SEER/10 HSPF			
XV18	Air Conditioner	up to 18 SEER			
XV18	Heat Pump	up to 18 SEER/10 HSPF			
Savings based on the rating of a matched system."					
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- Based on Energy Star's Savings Calculator for a 3-ton 20 SEER/10HSPF heat pump and programmable thermostat versus the industry standard 13 SEER/1,7 HSPF 3-ton heat pump and standard fremmostat in St. Louis, M.D.
- \*\*Mnimum afficiency established by the Department of Energy Potential energy savings may vary depending on you personal lifestyle, system settings and usage, equipme maintenance, local dimate, actual construction and installate of equipment and duct system.

#### What's Next

#### First order Date is April 1

- Are your technicians certified?
- e-Learning course completed?
- Consumer literature on hand?
- RSPs ready to sell TruComfort systems?

## **Happy Selling!**



### Trane TruComfort<sup>™</sup> Systems

Our quietest and most precise comfort experience.



# Mastering the Business of Winning

