



Variable Speed Gas Furnace Technology

Product Learning Module (PLM)



Now This Is Comfort!

NOVEMBER, 1997 INDEX

- 2 Letter from PLM Team
- 3 XV 90 Features
- 4 Why Variable Speed?
- 5 Safety and Application Flexibility
- 6-7 Review of the Best
- 8 Furnace Model Selection
- 9 Coil Model Selection
- 10 Setting Variable Speed Airflows
- 11 Advanced Troubleshooting
- 12 High Static and Twinning Applications

FROM THE PUBLISHER

Dear "Product Learning" Enthusiast...

Here's the new PLM Look: Product Learning Modules in the new Trane Global Standards Format! Still 2-color, still picture-oriented, still dealer-focused with an eye on the consumers!

The Trane XV 90 Gas Furnace is at your service! At 92+ AFUEs, it quietly wins in the high-tech comfort zone. For *your consumer* it has...the most even and highest delivered heating discharge air temperatures; best indoor air quality with the Trane Air Cleaner, and the lowest continuous

fan operating costs and with the less than 100 watt variable speed motor. You *the dealer* reap the XV 90 benefits too! Learned CFM adaptability and diagnostics for steady CFM management; and an *installer's dream*: easy control and troubleshooting access ...look further and see for yourself.

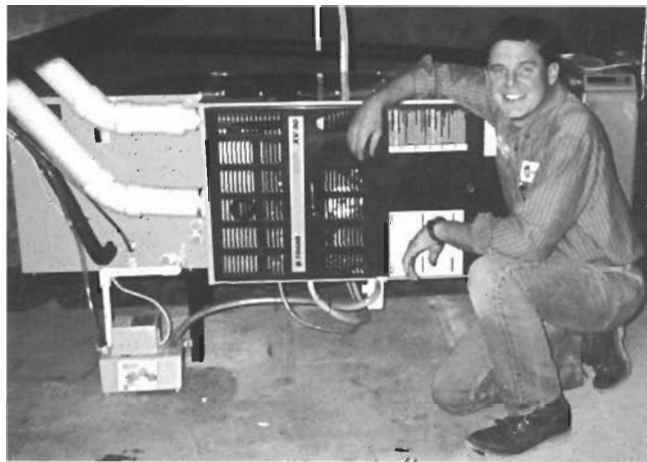
Sincerely, Your Furnace PLM Team:

Tim Storm, Paul Adair, Rhamy Morrison, Jim Bauer and Linda Kuehl

THE TRANE XV 90 GAS FURNACE...



Greg and Gwen Nolan's old two pipe 90% furnace had problems with high winds shutting down the furnace. The Nolan's helped us field-test our XV 90 gas furnace with variable speed draft inducer in their mountain top home last winter. The new variable speed inducer was just what the doctor ordered. The furnace performed flawlessly during a three day winter storm with sustained winds in excess of 50 mph! Resetting of the furnace pressure switch is no longer a problem. On top of that - they are experiencing the *ultimate comfort* and *quiet operation* of two-stage heat and enjoy the increased dehumidification that Comfort-R™ provided during the cooling season this past summer.



Meet Trane Dealer Greg Nolan of Nolan Heating and Air, Colfax, Washington, and a dealer for Gensco, Inc.

Needless to say, the Nolan's are extremely pleased with the reliability and comfort that the new XV 90 furnace has provided. The 12% utility (electric and

gas) savings of the variable speed inducer and fan motor has just been "icing on the cake!"

Your present gas furnace more than likely allows a temperature swing of 3 to 5° before turning on or off. With a Trane variable speed gas furnace, those days are gone forever.



XV 90 Features

VARIABLE SPEED (TUY) FURNACE

1 Heavy Steel Insulated Cabinet

Greater durability, quieter operation. Holds heat inside the cabinet, ensuring that more heat circulates into the home.

2 Primary Heat Exchanger

Made of heavy duty aluminized 20-gauge steel for long life. Each exchanger is crimped, not welded, to prevent stress cracks. Backed by a lifetime limited warranty.

3 Variable Speed Draft Inducer

Motor monitors pressure switch input, making periodic adjustments when needed to provide proper gas combustion. Eliminates nuisance no heat calls.

Learned Adaptability – Inducer Motor has the ability to adjust optimum operating speed. This prevents nuisance tripouts during adverse conditions.
NOTE: No High Altitude Kit required because of fan adjustability. Will ramp up as needed to close pressure switch for high and low fire.

4 Silicon Nitride Igniter

Starts burners electrically, eliminating a wasteful pilot light. A real energy saver and very durable and reliable. Backed by a 3-year limited warranty. (See page 5)

5 Direct Vent Option

Uses 100% outdoor air for combustion for increased equipment life and cleaner air.

Single Vent Option – Saves installation costs when furnace is located in an unconfined area.

6 Two-Stage Gas Valve

Works efficiently with the variable speed blower by providing only as much fuel as each stage requires.

7 Variable Speed Blower Motor

Operates at a lower, more efficient speed than conventional blowers. This design eliminates short-cycling, the frequent starting and stopping common to many ordinary furnaces.

Sight glass on door for viewing CFM/Diagnostic Light on integrated furnace control board (1 flash equals 100 CFM).
Comfort-R™ Enhanced Mode removes four times as much moisture.

8 Multi-Port In-Shot Burner

Orifice design perfectly shapes the flame cone for the maximum heat possible, while using less fuel.

9 AL29-4C™ Stainless Steel

Secondary Heat Exchanger Captures more of the heat you pay for. Also, backed by a lifetime limited warranty.

10 Self-Diagnostic Controls

The solid state brain controls every function of the XV 90 with digital accuracy, complete with safety features and a built-in troubleshooting system. Backed by a 3-year limited warranty.

11 Cleanable Filter

Lets you rinse or vacuum instead of buying replacements each time. Easy to remove.

12 Smart Control

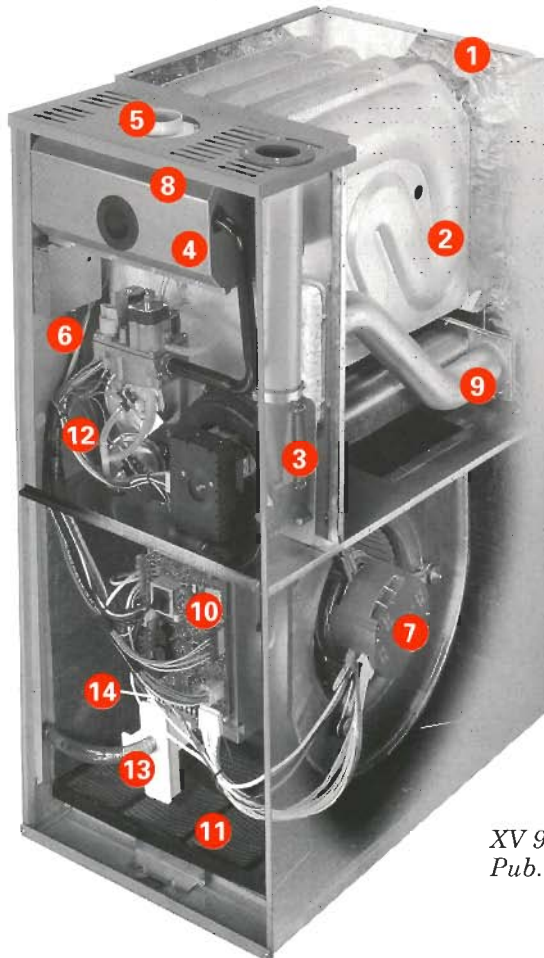
Pressure switches have to prove circuit before high fire can begin. For example, restriction in the vent could prevent high fire but house still gets heat from low fire default until problem resolved.

13 Trane Trap Design

Eliminates need to prime on initial start up.

14 Easy Connection

Easy 24V low voltage connection with upfront terminals.



XV 90 Cutaway Wall Poster,
Pub. No. 72-1132-01



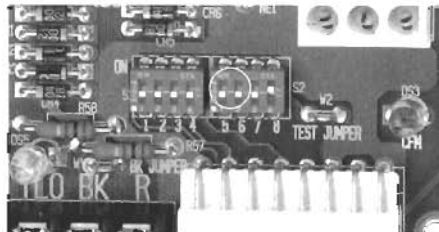
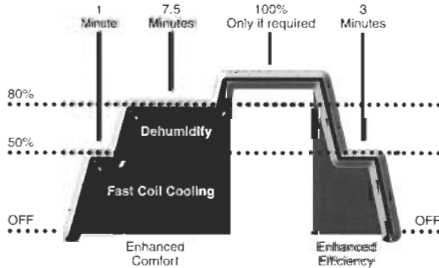
Why Variable Speed?

MEET CUSTOMER NEEDS AND COMFORT WITH THE XV LINE

Humidity Control

Comfort-R™ Enhanced Mode. When a call for cooling is received, the fan runs at 50% of rated speed for 1 minute. This gets the evaporator very cold and begins the dehumidifying process. The motor then ramps to 80% of its rated speed for 7.5 minutes which continues the dehumidifying process. After the 7.5 minutes at 80%, the blower ramps to 100% of the rated speed until the thermostat is satisfied. Once satisfied, the blower ramps down to 50% capacity for three minutes to further extract the efficiency ... can remove 4 times more moisture than a standard system. Up to 15 gallons of water per day.

Comfort-R™

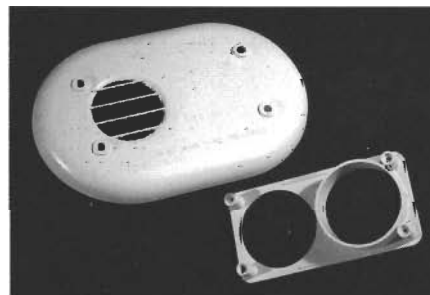


Turn Furnace Board Switches 5 and 6 to "ON" for Enhanced Comfort-R™ Mode.

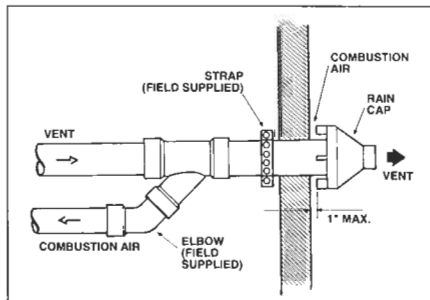
Application Flexibility

Each variable speed furnace can be matched with 4 different outdoor units to get the perfect match for the application. Dip Switch settings allow for adjustments to fit any climate (See Page 10). 350 CFM/ton for humid climates, 400 CFM/ton for normal climates, 450 CFM/ton for dry climates. Provides warm supply air with heat pumps.

The XV 90 is also designed with a direct vent option. A furnace may be exposed to corrosive materials in the home which could lead to component damage. Direct venting avoids exposure to these elements by using 100% outdoor air for combustion. This two-pipe design allows the vent gases to flow through one pipe while fresh outside air flows through the other.



BAYVENT200A



BAYVENT100A

The stylish sidewall vent termination kit (shown below) provides a nice, finished appearance outside the home.

Temperature Control

Static capabilities up to 0.9" ESP. Overcomes a poor duct system, delivers air to the back room and second floor. Two-stage gas valve eliminates temperature peaks and valleys.

Dip switch 7 and 8 allow you to select the temperature rise across the heat exchanger that fits the consumer's life style (Low, Medium and High).

Indoor Air Quality

Increased air filtration through continuous air circulation. A fantastic complement with our new filtering system line up: Perfect Fit™ Air Cleaners and Filters.

Quiet operation motor comes on and ramps up to speed with minimal sound. Does not bang on! Continuous Air Circulation is at 50% of the rated fan speed, so sound is minimized.

System Efficiency

In continuous fan mode, variable speed motor operating costs can be up to 90% less than standard PSC motors. Variable Speed blower operation is less than that of a 100 Watt light bulb.

True Zoning Capability

True and complete zoning can only be accomplished when used with a variable speed blower.

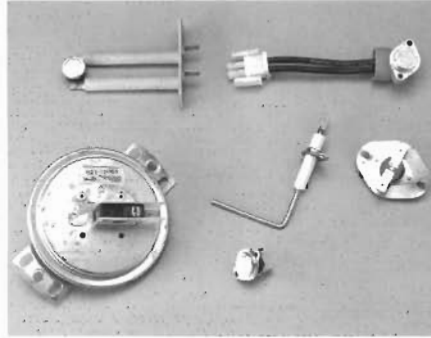
Safety and Application Flexibility

SAFETIES AND NEW TECHNOLOGY

Six Safeties for Your Security

Reliability and durability enhanced by multiple safeties (6) protecting motors, heat exchanger and other main components.

- High limit switch
- Draft inducer limit switch
- Pressure switches
- Flame sensor
- Reverse flow switch
- Burner box limits



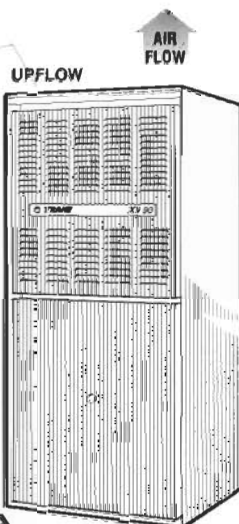
Silicon Nitride Igniter, SiNi

- Adaptive – operates at minimum ignition temperature increasing longevity
- Humidity and contamination resistant
- Superior strength for longer life
- Wide operation supply voltage (80-120V)
- Insulated for electrical safety



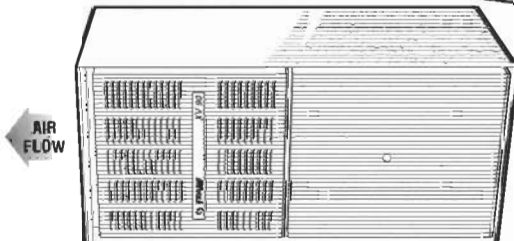
APPLICATION FLEXIBILITY – XV 90

Upflow Model For basement and closet applications.

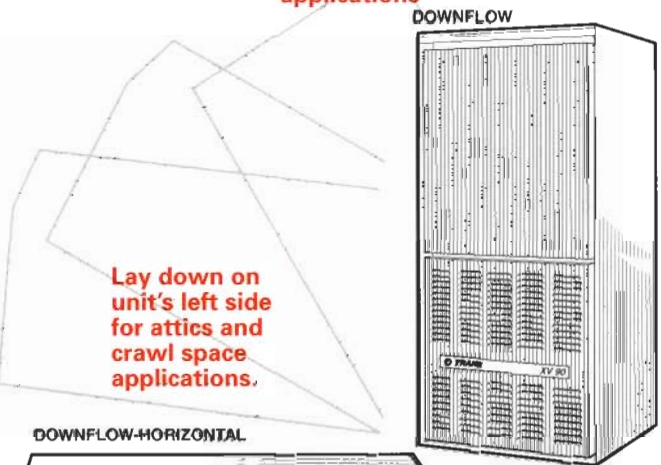


Lay down on unit's left side for attics and crawl space applications.

UPFLOW-HORIZONTAL

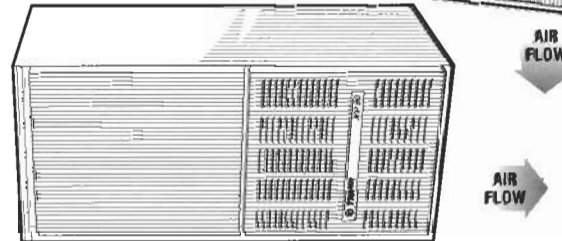


Downflow Model (AirTite™ Inner Doors) For closet, garage and crawl space applications



Lay down on unit's left side for attics and crawl space applications.

DOWNFLOW-HORIZONTAL





Review of the Best...

Features	Electronic Ignition TUE/TDE	XE 80 TUD/TDD
Reusable/Cleanable Filter		X
Bottom Panel		X
Insulated Blower Compartment		X
24 Volt Secondary In-Line Fuse		X
Single Shot Flame Roll Out Switch	X	
Manual Reset Flame Roll-Out Switch		X
Slow Opening Gas Valve (Quiet Valve)		X
Adjustable Heating Fan Off Timing		X
Diagnostic Sight Glass		X
Humidifier Accessory Terminal		X
EAC Accessory Terminal		
Painted Gas Manifold	X	X
20-Year Primary Heat Exchanger Warranty (Non Pro Rated)	X	X
Lifetime Heat Exchanger Warranty (Primary & Secondary)		
Upflow/Horizontal	X	X
Downflow/Horizontal	X	X
Flanged Outlet Duct Connections	X	X
Side Return Duct Starter Tabs	X	X
Service Diagnostics	X	X
Multi-Port In-Shot Burners	X	X
20 Ga. Aluminized Steel Heat Exchanger	X	X
29 4C Stainless Steel Secondary Heat Exchanger		
Integrated Ignition Control	X	X
Comfort-R™ Mode		
Silicon Carbide Hot Surface Igniter	X	X
NEW Silicon Nitride Hot Surface Igniter (SiNi)		
Variable Speed Draft Inducer		
Non-Direct Vent – 1 Pipe		
Direct Vent – 2 Pipe		
Direct Vent – 1 or 2 Pipe Option		
ICM Indoor Motor		
Comfort-R™ Enhanced Mode Operation		
Painted Cabinet – Two-Tone Color		
Painted Cabinet – Single Color	X	X
Twinning Option	X	X



As an Energy Star Partner, Trane has determined that some models meet the Energy Star guidelines for energy efficiency.

As part of our continuous product improvement, The Trane Company reserves the right to change specifications and design without notice. Read important energy cost and efficiency information available from your dealer.



Furnace Model Selection

NOMINAL INDOOR COIL TONNAGE	CAPACITY	WIDTH	ELECTRONIC IGNITION 1-STAGE 80 AFUE INDUCED DRAFT	XE 80 1-STAGE INDUCED DRAFT	XL 80 2-STAGE INDUCED DRAFT	XV 80 2-STAGE VARIABLE SPEED	WIDTH	XE 90 1-STAGE		XV 90 2-STAGE VARIABLE SPEED DIRECT VENT
								STANDARD	DIRECT VENT	
1-1/2, 2 1-1/2, 2 2, 2-1/2	40,000	14-1/2	TUE040A924K	TUD040C924H TDD040C924C TUD040C930H	TUD040R924H TDD040R924C		17-1/2	TUC040C924B TDC040C924B	TUX040C924B TDX040C924B	
1-1/2, 2 2, 2-1/2, 3 2, 2-1/2, 3	60,000	14-1/2	TUE060A936K TDE060A936K	TUD060C924H TDD060C924C TUD060C936H TDD060C936C	TUD060R936H TDD060R936C		17-1/2	TUC060C936B TDC060C936B	TUX060C936B TDX060C936B	TUY060R9V3V TDY060R9V3V
1-1/2, 2 2, 2-1/2, 3 2, 2-1/2, 3 2, 2-1/2, 3, 3-1/2 2-1/2, 3, 3-1/2 2, 2-1/2, 3, 3-1/2, 4 2, 2-1/2, 3, 3-1/2	80,000	17-1/2	TUE080A936K TDE080A945K TUE080A948K	TUD080C924H TUD080C936H TDD080C936C TUD080C948H TDD080C945C	TUD080R936H TDD080R936C TUD080R948H	TUD060R9V3H ^② TDD060R9V3C ^② TUD080R9V3H TDD080R9V3C	17-1/2	TUC080C942B TDC080C942B	TUX080C942B TDX080C942B	TUY080R9V3V TDY080R9V3V
2, 2-1/2, 3, 3-1/2 2, 2-1/2, 3, 3-1/2 2, 2-1/2, 3, 3-1/2 2, 2-1/2, 3, 3-1/2	100,000	17-1/2	TUE100A945K TUE100A936K	TUD100C936H TUD100C945H TDD100C945C	TUD100R936H TDD100R945C					
3, 3-1/2, 4 3, 3-1/2, 4 3, 3-1/2, 4, 5 3, 3-1/2, 4, 5	100,000	21	TUE100A948K TUE100A960K TDE100A960K	TUD100C948H TDD100C948C TUD100C960H TDD100C945C	TUD100R948H TDD100R948C TUD100R960H TDD100R960C	TUD100R9V5H TDD100R9V5C	21	TUC100C948B TDC100C948B	TUX100C948B TDX100C948B	TUY100R9V4V TDY100R9V4V
4, 5 3, 3-1/2, 4, 5	100,000 120,000	24-1/2 21		TUD100C972H ^③ TUD120C954H	TUD100R961H TUD120R954H		24-1/2	TUC100C960B TDC100C960B	TUX100C960B	
4, 5 4, 5	120,000	24-1/2	TUE120A960K TDE120A960K	TUD120C960H TDD120C960C	TUD120R960H TDD120R960C	TUD120R9V5H TDD120R9V5C ^①	24-1/2	TUC120C960B TDC120C960B	TUX120C960B TDX120C960B	TUY120R9V5V ^① TDY120R9V5V ^①
4, 5 4, 5	140,000	24-1/2	TUE140A960K	TUD140C960H TDD140C960C	TUD140R960H TDD140R960C	TUD140R9V5H ^①				

NOTE: ALL FURNACES ARE 40" TALL AND 28" DEEP.

① Can Be Used With 3-1/2, 4 and 5 Ton.

② Can Be Used With 1-1/2, 2, 2-1/2 and 3 Ton Only.

③ Can Be Used With 4, 5 and 6 Ton.

TU ARE UPFLOW/HORIZONTAL TD ARE DOWNFLOW/HORIZONTAL All furnaces have the time delay features which improve the cooling SEER.

COILS ONLY FROM TRANE...

- Exact fit to match our furnaces:
 - Available in 14.5", 17.5", 21 and 24.5" widths
 - All TXC coils are 21" deep
 - Available in standard, high efficiency and variable speed models
 - Painted to match the furnace
- TXC coils are designed to be used with heat pumps or air conditioners. (check valve installed)

- Positive pitch drain pan to eliminate standing water. Exceeds ASHRAE Standard 62R Indoor Air Quality Standard.
- Shipped with a 14 PSI nitrogen holding charge.
- TXC coils are convertible to fit the application. Upflow, downflow and horizontal.

- New Reversible TXC D Cased Coil:**
 - Bi-directional air flow
 - Same side service access for horizontal right or horizontal left installations
 - Eliminates need for field installed drip tray
 - Fully convertible upflow, downflow and horizontal
 - Heat pump and air conditioning compatible
 - Sloped drain pan

Coil Model Selection

UPFLOW/DOWNFLOW/HORIZONTAL CASED COILS														
UNIVERSAL MODELS	HEIGHT	WIDTH	CAPACITY (MBH)	REFRIGERANT CONTROL	HIGH EFFICIENCY UNIVERSAL MODELS	HEIGHT	WIDTH	CAPACITY (MBH)	REFRIGERANT CONTROL	VARIABLE SPEED UNIVERSAL MODELS	HEIGHT	WIDTH	CAPACITY (MBH)	REFRIGERANT CONTROL
TXC018C4HPB	17-1/2	14-1/2	18	FCCV	TXC031E5HPB	22-1/2	17-1/2	30	TXV-B	TXC031S3HPA	22-1/2	17-1/2	30	TXV-NB
TXC024C4HPB	17-1/2	14-1/2	24	FCCV	TXC036E5HPB	30	17-1/2	36	TXV-B	TXC036S3HPA	30	17-1/2	36	TXV-NB
TXC025C4HPB	17-1/2	17-1/2	24	FCCV	TXC037E5HPB	30	21	37	TXV-B	TXC037S3HPA	30	21	36	TXV-NB
TXC030C4HPB	22-1/2	14-1/2	30	FCCV	TXC039E300A ^①	30	17-1/2	36	2-TXV-NB	TXC054S3HPA	30	21	54	TXV-NB
TXC031C4HPB	17-1/2	17-1/2	30	FCCV	TXC054E5HPB	30	21	54	TXV-B	TXC065S3HPA	33*	24.5	60	TXV-NB
TXC035C4HPB	22-1/2	14-1/2	35	FCCV	TXC059E300A ^①	30	21	59	2-TXV-NB					
TXC036C4HPB	22-1/2	17-1/2	36	FCCV	TXC062E300A ^①	30	24-1/2	64	2-TXV-NB					
TXC037C4HPB	22-1/2	21	36	FCCV										
TXC042C4HPB	22-1/2	17-1/2	42	FCCV										
TXC043C4HPB	22-1/2	21	42	FCCV										
TXC048C4HPB	30	17-1/2	48	FCCV	TXH025A4HPA	22-3/4	28-1/4	10-1/4	24	FCCV				
TXC049C4HPB	30	21	48	FCCV	TXH033A4HPA	22-3/4	28-1/4	10-1/4	30	FCCV				
TXC050C4HPB	30	24-1/2	48	FCCV	TXH041A4HPA	22-3/4	37-1/2	10-1/4	42	FCCV				
TXC060C5HPA	30	21	60	TXV-B	TXH054A4HPA	22-3/4	37-1/2	10-1/4	54	FCCV				
TXC061C5HPB	30	24-1/2	60	TXV-B	TXH063P3HPA	22-3/4	37-1/2	10-1/4	60	TXV-NB				

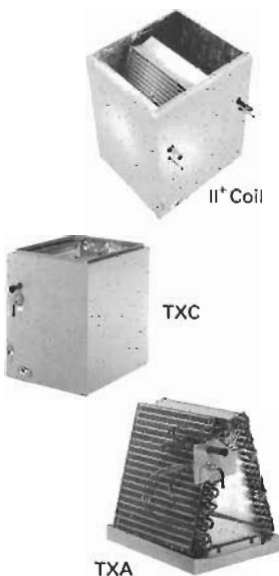
NOTE: ALL TXC COILS ARE 21" DEEP. ^① Cooling Only Dual Circuit. ^② Horizontal Only.

UPFLOW COOLING ONLY CASED COILS				
MODELS	HEIGHT	WIDTH	NOMINAL COOLING CAPACITY (BTUH)	REFRIGERANT CONTROL
CCBA18A4ACC	17-1/2	14-1/2	18,000	FCCV
CCBA24A4ACC	17-1/2	14-1/2	24,000	FCCV
CCBA30A4ACC	17-1/2	14-1/2	30,000	FCCV
CCBA36A4ACC	22-1/2	14-1/2	36,000	FCCV
CCBB30A4ACC	17-1/2	17-1/2	30,000	FCCV
CCBB36A4ACC	17-1/2	17-1/2	36,000	FCCV
CCBB42A4ACC	22-1/2	17-1/2	42,000	FCCV
CCBB48A4ACC	22-1/2	17-1/2	48,000	FCCV
CCBC48A4ACC	22-1/2	21	48,000	FCCV
CCBC60A4ACC	30	21	60,000	FCCV
CCBD60A5ACC	30	24-1/2	60,000	TXV-B

NOTE: ALL CCB COILS ARE 21" DEEP.

UPFLOW COOLING ONLY UNCASD COILS				
MODELS	HEIGHT	WIDTH	NOMINAL COOLING CAPACITY (BTUH)	REFRIGERANT CONTROL
CUBA18A4ACC	11-1/2	13	18,000	FCCV
CUBA24A4ACC	14-1/2	13	24,000	FCCV
CUBA30A4ACC	14-1/2	13	30,000	FCCV
CUBA36A4ACC	20	13	36,000	FCCV
CUBB30A4ACC	16	16	30,000	FCCV
CUBB36A4ACC	16	16	36,000	FCCV
CUBB42A4ACC	19	16	42,000	FCCV
CUBB48A4ACC	21	16	48,000	FCCV
CUBC48A4ACC	21	19-1/2	48,000	FCCV
CUBC60A4ACC	25	19-1/2	60,000	FCCV
CUBD60A5ACC	27	23	60,000	TXV-B

NOTE: ALL CUB COILS ARE 19-1/2" DEEP.



UPFLOW/DOWNFLOW UNCASD COILS									
MODELS	HEIGHT	WIDTH	CAPACITY (MBH)	REFRIGERANT CONTROL	MODELS	HEIGHT	WIDTH	CAPACITY (MBH)	REFRIGERANT CONTROL
TXA018C4HPB	11-1/2	13	18	FCCV	TXA049C4HPB	25	19-1/2	48	FCCV
TXA024C4HPB	14-1/2	13	24	FCCV	TXA050C4HPB	24-3/8	23	48	FCCV
TXA025C4HPB	13	16	24	FCCV	TXA060C5HPB	28	19-1/2	60	TXV-B
TXA030C4HPB	20	13	30	FCCV	TXA061C5HPB	27	23	60	TXV-B
TXA031C4HPB	16	16	30	FCCV	COIL ENCLOSURES				
TXAD35C4HPB	20	13	35	FCCV	BAYCLE1400B	22-1/2	14-1/2		
TXAD36C4HPB	19	16	36	FCCV	BAYCLE1700B	22-1/2	17-1/2		
TXA037C4HPB	18-1/2	19-1/2	36	FCCV	BAYCLE2100B	30	21		
TXA042C4HPB	21	16	42	FCCV	BAYCLE2400B	30	24-1/2		
TXA043C4HPB	21	19-1/2	42	FCCV					
TXA048C4HPB	25	16	48	FCCV					

NOTE: ALL TXA COILS ARE 19-1/2" DEEP.

NOTE: ALL COIL ENCLOSURES ARE 21" DEEP.

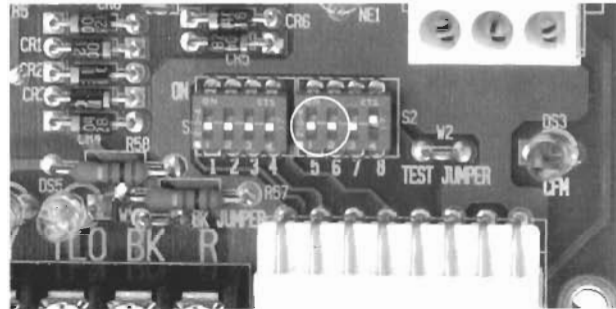
REVERSIBLE COILS - BI-DIRECTIONAL AIRFLOW									
MODELS	HEIGHT	WIDTH	CAPACITY (MBH)	REFRIGERANT CONTROL	MODELS	HEIGHT	WIDTH	CAPACITY (MBH)	REFRIGERANT CONTROL
TXC024D4HPA	30	14-1/2	24	FCCV	TXC031D4HPA	30	17-1/2	30	FCCV
TXC025D4HPA	30	17-1/2	24	FCCV	TXC035D4HPA	30	14-1/2	35	FCCV
TXC030D4HPA	30	14-1/2	30	FCCV	TXC036D4HPA	30	17-1/2	36	FCCV



Setting Variable Speed Airflows

FIVE EASY STEPS

1. Determine tonnage of outdoor unit.
Set Dip Switches 1 and 2 accordingly.
2. Determine cooling CFM/Ton desired for your climate.
Set Dip Switches 3 and 4 accordingly.
3. Determine if Comfort-R™ or cooling off delay is desired.
Set Dip Switches 5 and 6 accordingly.
4. Determine heating CFM desired.
Set Dip Switches 7 and 8 accordingly.
5. Confirm CFM settings. The green CFM selector indicator light makes set up easy by flashing one flash for every 100 CFM and a short flash for every 50 CFM.



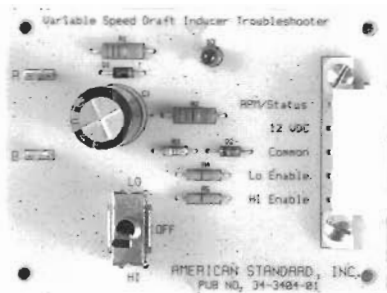
Turn Furnace Board Switches 5 and 6 (circled above) to "ON" for Enhanced Comfort-R™ Mode.

* JUMPER 'Y' TO 'O' ON LVTB FOR 'COMFORT-R' MODE.

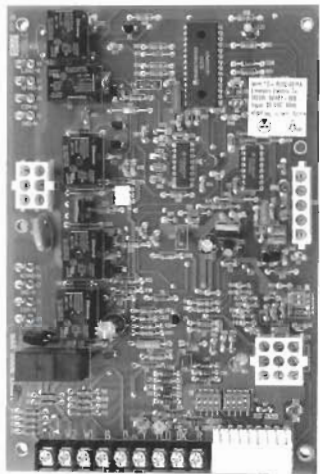
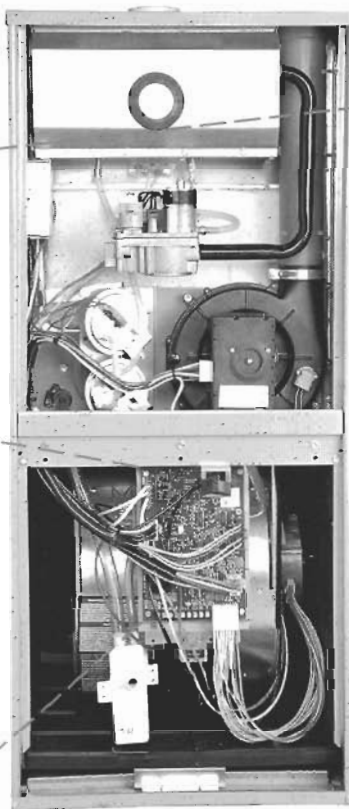
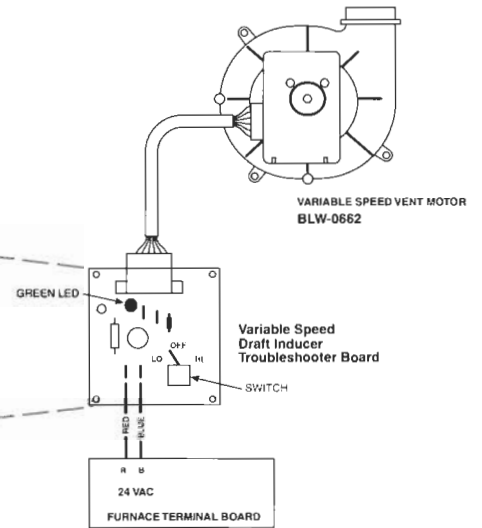
Indoor Motor Airflow Selection Chart						
Outdoor Unit Size Tons						
STEP	Switch Setting		*DY*UY060	*DY*UY080	*DY*UY100	*DY*UY120
1	1 – OFF 2 – OFF		3 Ton	3.5 Ton	—	5 Ton
	1 – ON 2 – OFF		2.5 Ton	3 Ton	4 Ton	4 Ton
	1 – OFF 2 – ON		2 Ton	2.5 Ton	3.5 Ton	3.5 Ton
	1 – ON 2 – ON		1.5 Ton	—	3 Ton	—
Cooling Airflow						
2	3 – ON 4 – OFF		High	450 CFM/Ton	—	—
	3 – OFF 4 – OFF		Normal	400 CFM/Ton	—	—
	3 – OFF 4 – ON		Low	350 CFM/Ton	—	—
Cooling Off Delay Options						
3	5 – OFF 6 – OFF		Selection	Airflow		
	5 – ON 6 – OFF		None	Same		
	5 – OFF 6 – ON		90 Seconds	100% (Factory Setting: BAY24X045 Equivalent)		
	5 – ON 6 – ON		180 Seconds	50%	—	—
			Comfort-R™	50% (Enhanced Initiation)		
Heating Airflow Settings						
4			*DY*UY060	*DY*UY080	*DY*UY100	*DY*UY120
			1st/2nd Stage	1st/2nd Stage	1st/2nd Stage	1st/2nd Stage
	7 – OFF 8 – OFF	High	860/1290 CFM	1150/1400 CFM	1350/1900 CFM	1550/2150 CFM
	7 – ON 8 – OFF	Normal	750/1125 CFM	1000/1400 CFM	1150/1600 CFM	1350/1950 CFM
	7 – OFF 8 – ON	Med – Low	675/1012 CFM	900/1250 CFM	1000/1450 CFM	1200/1850 CFM
7 – ON 8 – ON	Low	600/900 CFM	800/1100 CFM	900/1300 CFM	1050/1650 CFM	
5	Confirm CFM Settings. One flash for every 100 CFM and short flash for every 50 CFM.					

Advanced Troubleshooting

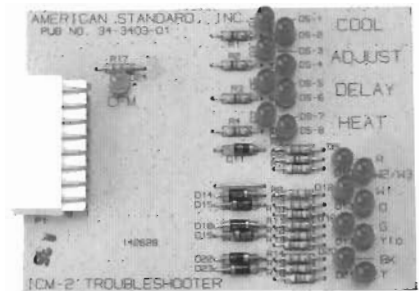
Turn off power. Unplug Variable Speed Vent Motor Harness, plug into Troubleshooting Board, remove R & B Terminal wiring and connect to Variable Speed Troubleshooter for power. Troubleshoots low and high ramping of variable speed inducers.



Variable Speed Draft Inducer Troubleshooter Board (Pub. No. 34-3404-01)



Furnace Board (CNT 2536)



ICM-2 Troubleshooter Board (Pub. No. 34-3403-01)

Turn off power and remove all low voltage wiring. Unplug 16 pin harness at ICM-2 motor. Plug in the "Troubleshooter" to the harness. As you flip Dip Switches, Troubleshooter Board will tell you if the circuitry is working properly by lighting the LED's.

IFC Diagnostic Codes

Led Fault Flash	Error
Flashing Slow	Normal, No Call for Heat
Flashing Fast	Normal, Call for Heat
Continuous On	Replace Control
Continuous Off	Check Power
2 Flashes	External Lockout (Retries or Recycles Exceeded)
3 Flashes	Inducer Error
4 Flashes	Open High Limit Switch
5 Flashes	Flame Sensed When No Flame Should be Present
6 Flashes	No Ground, Reversed Polarity, or System Voltage Too Low
7 Flashes	Gas Valve Circuit Error



High Static and Twinning Applications

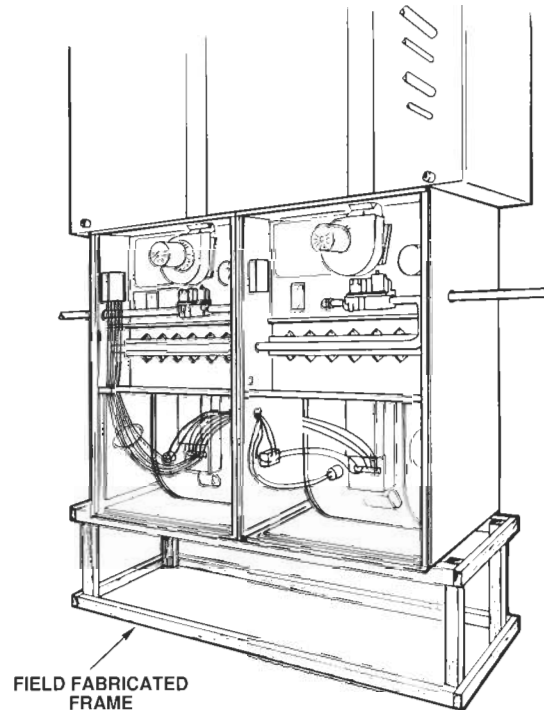
NEW TUD100C972H – THE PERFECT FURNACE FOR TWINNING OR HIGH STATIC APPLICATIONS!

BAYTWIN400A – For use with all 40" furnaces with White Rodgers 50A50 integrated furnace controls.

The BAYTWIN400A Twinning Kit is used when twinning upflow furnaces with identical model numbers. These identical furnaces must have the same gas input and airflow.

The return air must be common to both furnaces and enter through the bottom only. The reverse flow switches must be mounted in the blower compartment to prevent furnace operation if one of the blowers is inoperative.

An electric heat subbase or thermostat and a connection between "Y" and "G" on each furnace low voltage terminal is necessary to operate both fans at the same speed during heating and cooling. See Pub. No. 18-CH12D14 for installation guidelines.



High Static Airflow Chart

TUD100C972H Furnace Airflow (CFM) vs. Static Pressure (ins.w.g.)										
Speed Tap:	ESP:	0.1	0.2	0.3	0.4	0.5 [ⓐ]	0.6	0.7	0.8	0.9 [ⓑ]
High [ⓐ]	CFM	2484	2458	2432	2387	2342	2275	2208	2125	2041
Med Hi	CFM	2097	2088	2079	2054	2028	1970	1912	1831	1750
Med Low	CFM	1753	1751	1748	1732	1716	1691	1665	1594	1523
Low	CFM	1459	1458	1453	1444	1434	1407	1380	1335	1289

[ⓐ] High Speed CFM is Based on Bottom and Side Return Air Option.

[ⓑ] 6 Ton Airflow at .5 ESP.

[ⓒ] 5 Ton Airflow at .9 ESP.

Deduct 100 CFM for High Speed CFM for Bottom Return Only. Med Hi, Med Low and Low Speed CFM are Bottom Return Only. Addition of Side Return Does Not Improve Airflow Except on High Speed Tap.



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Since The Trane Company has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.