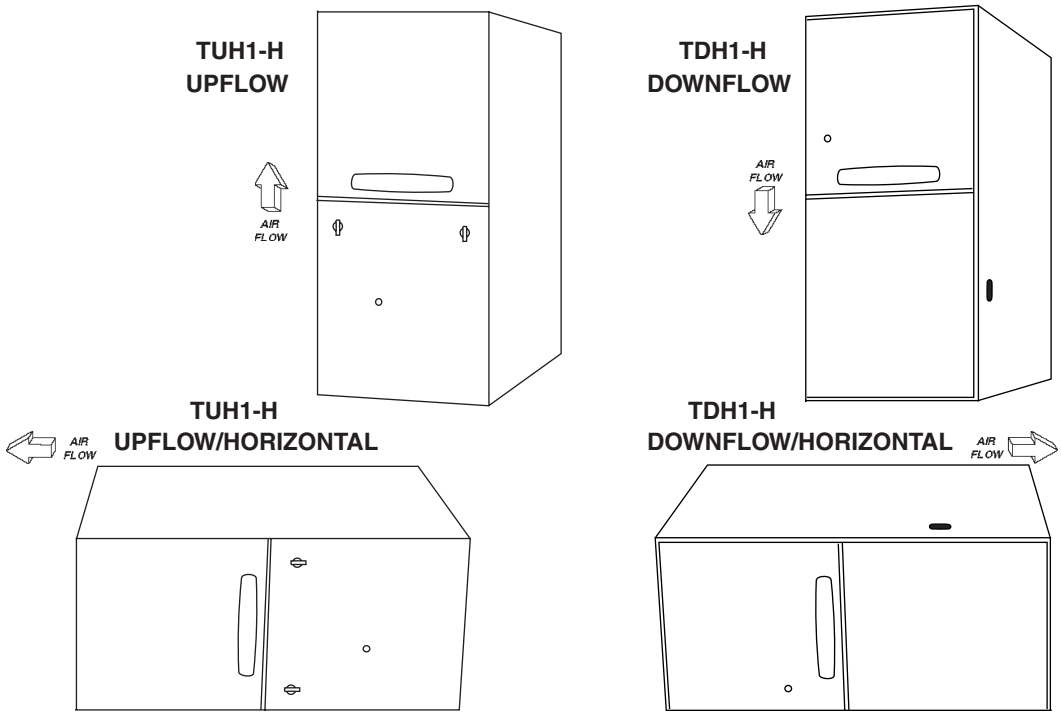
Upflow/ Horizontal Downflow /Horizontal Condensing, Direct Vent Gas-Fired Furnace

XT 95

TUH1B040A9H21A, TUH1B060A9H31A, TUH1B080A9H31A, TUH1C100A9H41A, TUH1D120A9H51A
TDH1B040A9H21A, TDH1B065A9H31A, TDH1C085A9H41A, TDH1D110A9H51A

High Efficiency Single-Stage Fan Assisted Combustion System



PUB. NO. 22-1859-01

General Features

NATURAL GAS MODELS
Central Heating furnace designs are certified to ANSI Z21.47 / CSA 2.3 for both natural and L.P. gas. Limit setting and rating data were established and approved under standard rating conditions using American National Standards Institute standards.

SAFE OPERATION
The Integrated System Control has solid state devices, which continuously monitor for presence of flame, when the system is in the heating mode of operation. Dual solenoid combination gas valve and regulator provide extra safety.

QUICK HEATING
Durable, cycle tested, heavy gauge **aluminized steel heat exchanger** quickly transfers heat to provide warm conditioned air to the structure. **Low energy power vent blower,** to increase efficiency and provide a positive discharge of gas fumes to the outside.

BURNERS
Multiport Inshot burners will give years of quiet and efficient service. All models can be converted to **L.P. gas** without changing burners.

INTEGRATED SYSTEM CONTROL
Exclusively designed operational program provides total control of furnace limit sensors, blowers, gas valve, flame control and includes self diagnostics for ease of service. Also contains connection points for E.A.C./humidifier.

AIR DELIVERY
The four speed, direct drive blower motor, has sufficient airflow for most heating and cooling requirements, will switch from heating to cooling speeds on demand from room thermostat. The blower door safety switch will prevent or terminate furnace operation when the blower door is removed.

STYLING
Heavy gauge steel and "wrap-around" cabinet construction is used in the cabinet with baked-on enamel finish for strength and beauty. The heat exchanger section of the cabinet is completely lined with foil faced fiberglass insulation. This results in quiet and efficient operation due to the excellent acoustical and insulating qualities of fiberglass. Built-in bottom pan and alternate bottom, left or right side return air connection provision.

FEATURES AND GENERAL OPERATION
The XT95 High Efficiency Gas Furnaces employ a Silicon Nitride Hot Surface Ignition system, which eliminates the waste of a constant burning pilot. The integrated system control lights the main burners upon a demand for heat from the room thermostat. Complete front service access.

a. Low energy power venter
b. Vent proving pressure switch.

Features and Benefits

XT95 Standard Equipment

- Power supply 115/1/60
- Convertible to horizontal with left of right airflow
- **Type 29-4C™** stainless steel secondary heat exchanger
- Inner blower doors
- Constant torque ECM blower motor
- Silicon Nitride igniter with adaptive heat up
- Accessory hook-up capability – Hum and EAC
- Quiet induced draft blower
- Blower door safety switch
- Dual solenoid combination gas valve & regulator
- PVC venting – 1 or 2 pipe vent option
- Left/right gas connection
- Selectable cooling fan off delay eliminates need for BAY24X045 time delay relay
- Single wire twinning
- Integrated solid state control with self-diagnostics
- 24 volt fuse
- Manual reset burner box limit
- **Optional extended warranties**

Contents

Features and Benefits

XT95 Optional Equipment

Comfort Control, XL803, Programmable 7 Day, 3-Ht, 2-Cl ..... TCONT803AS32DA [ ]
Comfort Control, XR402, Electric, 3-Ht, 2-Cl (Non-programmable) ..... TCONT402AN32DA [ ]
For additional comfort control choices, see the product catalog or quick select handbook
Propane Conversion Kit ..... BAYLPKT210B [ ]
Propane Conversion Kit (stainless steel burners) ..... BAYLPSS210B [ ]
Downflow Subbase ..... BAYBASE205 [ ]
Filter Access Door Kit ..... BAYFLTR206 [ ]
Side Filter Rack ..... BAYFLTR200 [ ]
High Altitude Pressure Switch Kit TUH1B040, TDH1B040, TDH1C085 ..... BAYSWT01AHALTA [ ]
High Altitude Pressure Switch Kit TUH1B060, TUH1D100, TUH1D120 ..... BAYSWT04AHALTA [ ]
High Altitude Pressure Switch Kit TUH1B080, TUH1C100, TDH1D110 ..... BAYSWT05AHALTA [ ]
High Altitude Pressure Switch Kit TUH1C080 ..... BAYSWT11AHALTA [ ]
High Altitude Pressure Switch Kit TDH1B065 ..... BAYSWT12AHALTA [ ]
Concentric Vent Kit ..... BAYAIR30AVENTA [ ]
Sidewall Vent Termination Kit ..... BAYVENT200B [ ]
Manufactured/Mobile Home Kit ..... BAYMFGH100A [ ]

General Data

PRODUCT SPECIFICATIONS ①

MODEL	TUH1B040A9H21A	TUH1B060A9H31A	TUH1B080A9H31A
TYPE	Upflow/Horizontal	Upflow/Horizontal	Upflow/Horizontal
RATINGS ②			
Input BTUH ③	40,000	60,000	80,000
Capacity BTUH (ICS) ③	38,000	57,000	76,000
AFUE	95	95	95
Temp. rise (Min.-Max.) °F.	30 - 60	30 - 60	35 - 65
BLOWER DRIVE ⑧	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 7	10 x 7	10 x 8
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP ⑤	1/2	1/2	1/2
R.P.M.	1075	1075	1075
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60
COMBUSTION FAN — Type	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/55 - 3000	1/15 - 3450	1/20 - 3450
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60
FLA	1.00	1.75	0.71
FILTER — Furnished?	Yes	Yes	Yes
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	1 - 17x25 - 1in.	1 - 17x25 - 1in.	1 - 17x25 - 1in.
VENT PIPE DIAMETER - Min (in.)⑥⑦	2 Round	2 Round	3 Round
HEAT EXCHANGER			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
ORIFICES — Main			
Nat. Gas. Qty. — Drill Size	2 — 45	3 — 45	4 — 45
L.P. Gas Qty. — Drill Size	2 — 56	3 — 56	4 — 56
GAS VALVE	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
PILOT SAFETY DEVICE			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
BURNERS — Type	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	2	3	4
POWER CONN. — V/Ph/Hz ④	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	9.7	10.4	9.4
Max. Overcurrent Protection (Amps)	15	15	15
PIPE CONN. SIZE (IN.)	1/2	1/2	1/2
DIMENSIONS	H x W x D	H x W x D	H x W x D
Crated (In.)	41-3/4 x 19-1/2 x 30-1/2	41-3/4 x 19-1/2 x 30-1/2	41-3/4 x 19-1/2 x 30-1/2
WEIGHT			
Shipping (Lbs.)/Net (Lbs.)	139 / 129	150 / 140	158 / 148

① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

② For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level.

For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

③ Based on U.S. government standard tests.

④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

⑤ Constant torque ECM blower motor

⑥ Refer to the Vent Length Table in the Installer's Guide or the Allowable Vent Length label located on the furnace.

⑦ All TUH1 and TDH1 furnace models have a vent outlet diameter that equals 2".

⑧ 4 Speed, direct drive X13 style high efficiency DC motor

General Data

PRODUCT SPECIFICATIONS ①

MODEL	TUH1C100A9H41A	TUH1D120A9H51A	TDH1B040A9H21A
TYPE	Upflow/Horizontal	Upflow/Horizontal	Upflow/Horizontal
RATINGS ②			
Input BTUH ③	97,000	110,000	40,000
Capacity BTUH (ICS) ③	92,105	104,500	38,000
AFUE	95	95	95
Temp. rise (Min.-Max.) °F	35 - 65	40 - 70	30 - 60
BLOWER DRIVE ⑧	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	11 x 10	11 x 10	10 x 7
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP ⑤	3/4	1	1/2
R.P.M.	1100	1100	1080
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60
COMBUSTION FAN — Type	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/20 - 3450	1/20 - 3450	1/55 - 3000
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60
FLA	.71	.71	1.14
FILTER — Furnished?	Yes	Yes	Yes
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	1 - 20x25 - 1in.	1 - 24x25 - 1in.	1 - 14x20 - 1in.
VENT PIPE DIAMETER - Min (in.)⑥⑦	3 Round	3 Round	2 Round
HEAT EXCHANGER			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
ORIFICES — Main			
Nat. Gas. Qty. — Drill Size	5 — 45	6 — 45	2 — 45
L.P. Gas Qty. — Drill Size	5 — 56	6 — 56	2 — 56
GAS VALVE	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
PILOT SAFETY DEVICE			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
BURNERS — Type	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	5	6	2
POWER CONN. — V/Ph/Hz ④	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	11.4	14.1	9.7
Max. Overcurrent Protection (Amps)	15	20	15
PIPE CONN. SIZE (IN.)	1/2	1/2	1/2
DIMENSIONS	H x W x D	H x W x D	H x W x D
Crated (In.)	41-3/4 x 23 x 30-1/2	41-3/4 x 26-1/2 x 30-1/2	41-3/4 x 19-1/2 x 30-1/2
WEIGHT			
Shipping (Lbs.)/Net (Lbs.)	171 / 160	205 / 193	145 / 135

① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

② For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level.

For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

③ Based on U.S. government standard tests.

④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

⑤ Constant torque ECM blower motor

⑥ Refer to the Vent Length Table in the Installer's Guide or the Allowable Vent Length label located on the furnace.

⑦ All TUH1 and TDH1 furnace models have a vent outlet diameter that equals 2".

⑧ 4 Speed, direct drive X13 style high efficiency DC motor

General Data

PRODUCT SPECIFICATIONS ①

MODEL	TDH1B065A9H31A	TDH1C085A9H41A	TDH1D110A9H51B
TYPE	Upflow/Horizontal	Downflow/Horizontal	Downflow/Horizontal
RATINGS ②			
Input BTUH ③	60,000	80,000	110,000
Capacity BTUH (ICS) ③	57,000	76,000	104,500
AFUE	95	95	95
Temp. rise (Min.-Max.) °F.	25 - 55	30 - 60	35 - 65
BLOWER DRIVE ⑧	DIRECT	DIRECT	DIRECT
Diameter - Width (In.)	10 x 8	11 x 10	11 x 10
No. Used	1	1	1
Speeds (No.)	4	4	4
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP ⑤	3/4	3/4	1
R.P.M.	1075	1075	1075
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60
COMBUSTION FAN — Type	Centrifugal	Centrifugal	Centrifugal
Drive - No. Speeds	Direct - 1	Direct - 1	Direct - 1
Motor HP - RPM	1/25 - 3200	1/20 - 3450	1/20 - 3450
Volts/Ph/Hz	115/1/60	115/1/60	115/1/60
FLA	1.35	.71	.71
FILTER — Furnished?	Yes	Yes	Yes
Type Recommended	High Velocity	High Velocity	High Velocity
Shipped (No.-Size-Thk.)	2 - 14x20 - 1in.	2 - 16x20 - 1in.	2 - 16x20 - 1in.
VENT PIPE DIAMETER - Min (in.) ⑥⑦	2 Round	2.5 Round	2.5 Round
HEAT EXCHANGER			
Type - Fired	Alum. Steel	Alum. Steel	Alum. Steel
- Unfired			
Gauge (Fired)	20	20	20
ORIFICES — Main			
Nat. Gas. Qty. — Drill Size	4 — 48	5 — 48	6 — 48
L.P. Gas Qty. — Drill Size	4 — 56	5 — 56	6 — 56
GAS VALVE	Redundant - Single Stage	Redundant - Single Stage	Redundant - Single Stage
PILOT SAFETY DEVICE			
Type	Hot Surface Ignition	Hot Surface Ignition	Hot Surface Ignition
BURNERS — Type	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	4	5	6
POWER CONN. — V/Ph/Hz ④	115/1/60	115/1/60	115/1/60
Ampacity (In Amps)	10.0	11.4	14.1
Max. Overcurrent Protection (Amps)	15	15	20
PIPE CONN. SIZE (IN.)	1/2	1/2	1/2
DIMENSIONS	H x W x D	H x W x D	H x W x D
Crated (In.)	41-3/4 x 19-1/2 x 30-1/2	41-3/4 x 23 x 30-1/2	41-3/4 x 26-1/2 x 30-1/2
WEIGHT			
Shipping (Lbs.)/Net (Lbs.)	158 / 148	171 / 160	205 / 193

① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

② For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level.

For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

③ Based on U.S. government standard tests.

④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

⑤ Constant torque ECM blower motor

⑥ Refer to the Vent Length Table in the Installer's Guide or the Allowable Vent Length label located on the furnace.

⑦ All TUH1 and TDH1 furnace models have a vent outlet diameter that equals 2".

⑧ 4 Speed, direct drive X13 style high efficiency DC motor

Performance Data

FURNACE AIRFLOW (CFM) VS. STATIC PRESSURE (ins.w.g.)										
MODEL	SPEED TAP	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
TUH1B040A9H21A	4 - HIGH - Black	1159	1131	1102	1077	1052	1022	992	961	930
	3 - MED-HIGH - Blue	938	910	881	851	820	786	751	717	662
	2 - MED-LOW - Yellow	844	814	783	750	717	681	645	604	563
	1 - LOW - Red**	772	732	691	656	621	581	540	497	454
TUH1B060A9H31A	4 - HIGH - Black	1402	1362	1318	1267	1214	1157	1095	1033	960
	3 - MED-HIGH - Blue**	1199	1174	1149	1127	1099	1075	1028	973	897
	2 - MED-LOW - Yellow	1104	1080	1053	1031	1002	980	955	931	890
	1 - LOW - Red	834	808	770	750	712	677	641	599	566
TUH1B080A9H31A	4 - HIGH - Black	1328	1304	1277	1253	1224	1182	1127	1057	959
	3 - MED-HIGH - Blue**	1519	1493	1464	1422	1368	1306	1242	1161	1054
	2 - MED-LOW - Yellow	1072	1039	1015	991	956	928	891	858	828
	1 - LOW - Red	810	782	759	729	703	668	643	612	582
TUH1C100A9H41A	4 - HIGH - Black	1586	1552	1517	1477	1443	1410	1366	1331	1289
	3 - MED-HIGH - Blue**	1893	1858	1826	1793	1759	1724	1691	1646	1582
	2 - MED-LOW - Yellow	1364	1320	1282	1241	1205	1167	1120	1078	1045
	1 - LOW - Red	1107	1060	1003	959	919	863	825	782	730
TUH1D120A9H51A	4 - HIGH - Black	2141	2108	2076	2041	2009	1976	1939	1894	1826
	3 - MED-HIGH - Blue**	2072	2038	2007	1975	1938	1910	1880	1845	1797
	2 - MED-LOW - Yellow	1886	1853	1816	1785	1754	1718	1688	1652	1619
	1 - LOW - Red	1647	1609	1573	1540	1497	1465	1429	1391	1358

** = HEATING SPEED TAP

CFM VS. TEMPERATURE RISE																		
MODEL	CFM (CUBIC FEET PER MINUTE)																	
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
TUH1B040A9H21A	59	50	44	39	35	32	29											
TUH1B060A9H31A				59	53	48	44	41	38									
TUH1B080A9H31A						64	59	54	50	47	44	41						
TUH1C100A9H41A								66	61	57	53	50	47	45	43			
TUH1D120A9H51A										65	60	57	54	51	48	46	44	

Performance Data

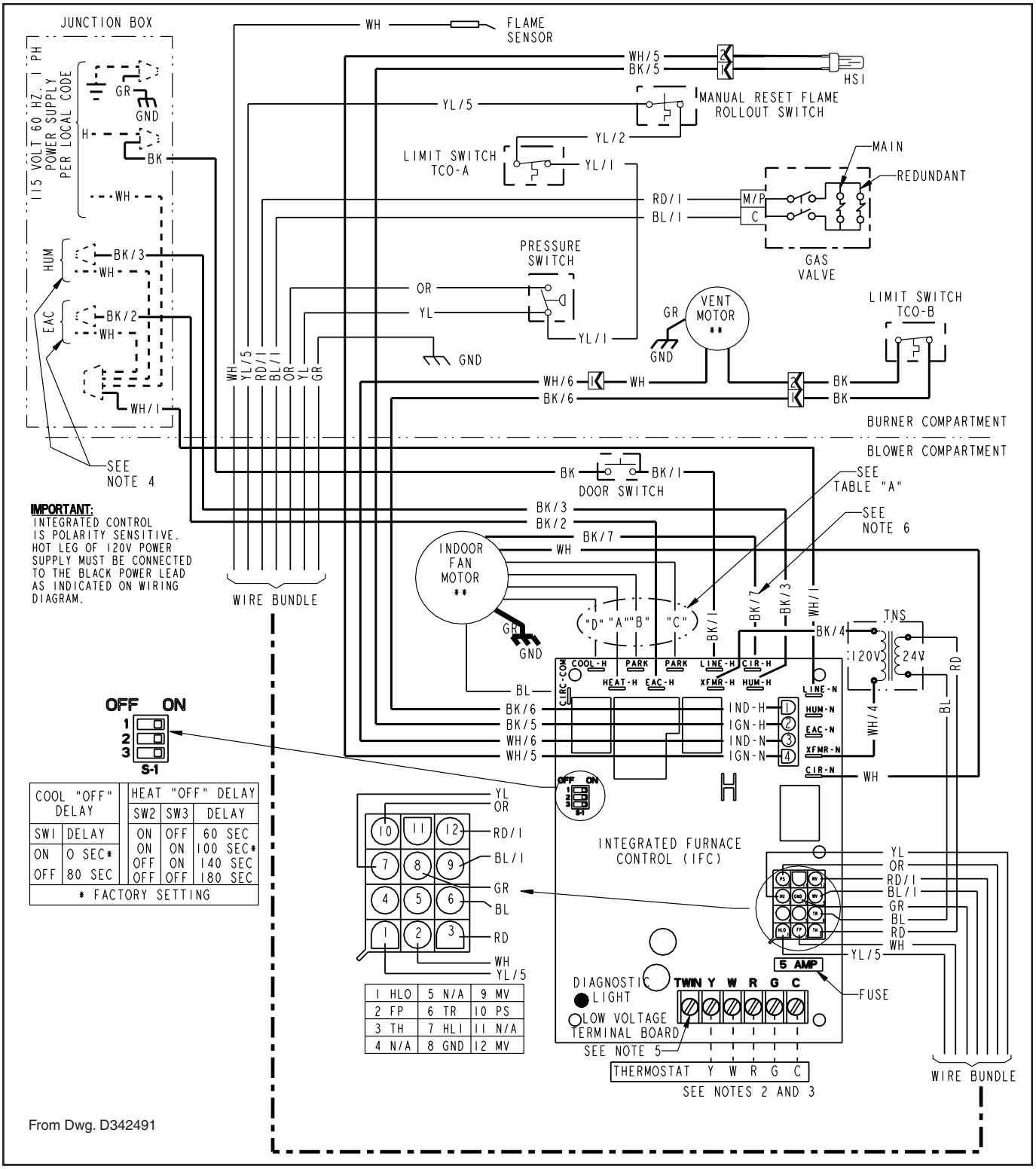
FURNACE AIRFLOW (CFM) VS. STATIC PRESSURE (ins.w.g.)										
MODEL	SPEED TAP	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
TDH1B040A9H21A	4 - HIGH - Black 3 - MED-HIGH - Blue 2 - MED-LOW - Yellow** 1 - LOW - Red	1156 935 835 752	1128 859 803 726	1100 859 771 700	1072 828 736 648	1043 797 701 596	1012 757 652 554	981 717 602 511	917 679 569 471	852 641 536 431
TDH1B065A9H31A	4 - HIGH - Black 3 - MED-HIGH - Blue** 2 - MED-LOW - Yellow 1 - LOW - Red	1455 1375 1099 838	1404 1350 1076 799	1352 1320 1044 773	1299 1270 1021 744	1232 1215 994 706	1174 1153 968 675	1101 1099 941 628	1025 1014 904 599	916 934 874 558
TDH1C085A9H41A	4 - HIGH - Black 3 - MED-HIGH - Blue** 2 - MED-LOW - Yellow 1 - LOW - Red	1795 1686 1395 1179	1763 1655 1362 1141	1732 1619 1328 1094	1701 1586 1289 1059	1669 1554 1258 1019	1627 1525 1225 970	1575 1494 1186 931	1514 1458 1151 888	1451 1415 1115 846
TDH1D110A9H51A	4 - HIGH - Black 3 - MED-HIGH - Blue** 2 - MED-LOW - Yellow 1 - LOW - Red	2105 1880 1756 1582	2063 1853 1718 1553	2010 1817 1688 1509	1951 1785 1647 1473	1880 1747 1616 1433	1802 1708 1576 1397	1721 1649 1546 1362	1630 1579 1505 1317	1543 1499 1468 1282

** = HEATING SPEED TAP

CFM VS. TEMPERATURE RISE																		
MODEL	CFM (CUBIC FEET PER MINUTE)																	
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
TDH1B040A9H21A	59	50	44	39	35	32	29											
TDH1B065A9H31A					53	48	44	41	38	35								
TDH1C085A9H41A							59	54	50	47	44	41	39					
TDH1D110A9H51A										65	60	57	54	51	48	46		

Electrical Data

TUH1-H Wiring



COOL "OFF" DELAY	
SW1	DELAY
ON	0 SEC*
OFF	80 SEC

HEAT "OFF" DELAY		
SW2	SW3	DELAY
ON	OFF	60 SEC
ON	ON	100 SEC*
OFF	ON	140 SEC
OFF	OFF	180 SEC

* FACTORY SETTING

1 HLO	5 N/A	9 MV
2 FP	6 TR	10 PS
3 TH	7 HLI	11 N/A
4 N/A	8 GND	12 MV

Electrical Data

TUH1-H Schematic

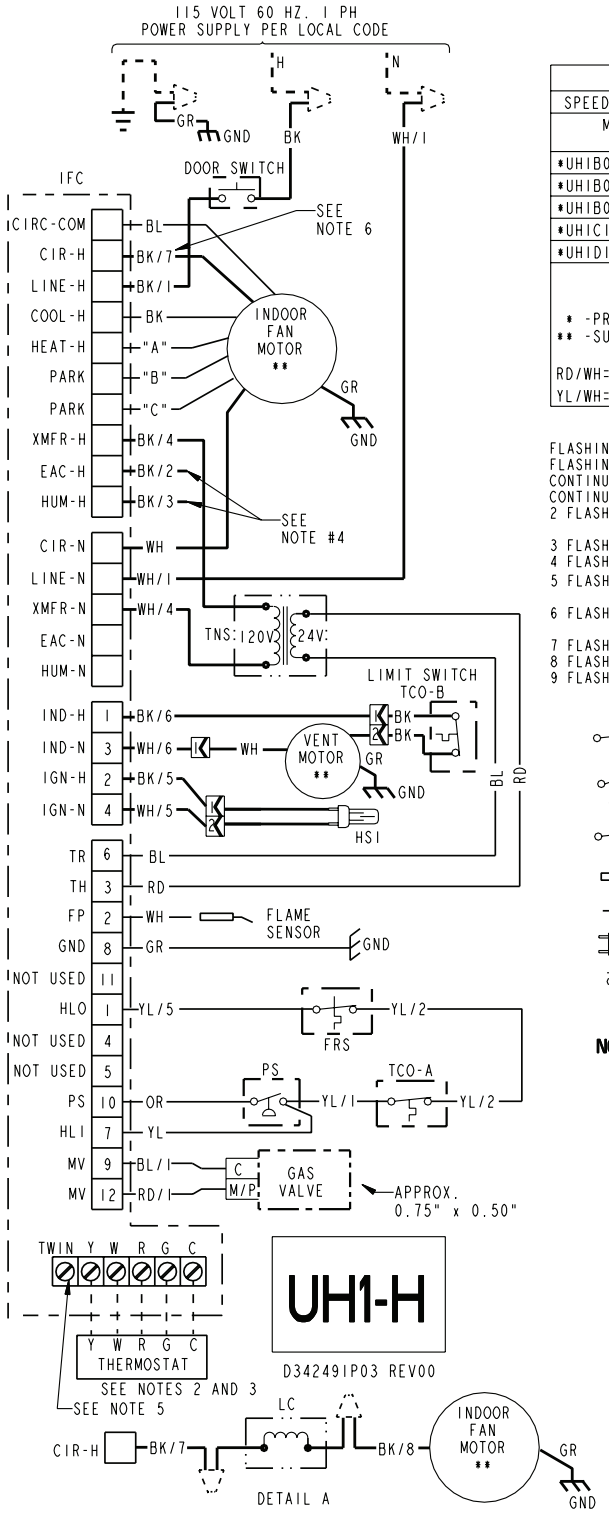


TABLE "A"				
SPEED TAPS FOR I.D. FAN MOTOR				
MODEL	HEAT "A"	PARK "B"	PARK "C"	COOL "D"
*UH1B040A9H21**	RD/WH	BK/WH	YL/WH	BL/WH
*UH1B060A9H31**	BL/WH	YL/WH	RD/WH	BK/WH
*UH1B080A9H31**	BL/WH	YL/WH	RD/WH	BK/WH
*UH1C100A9H41**	BL/WH	YL/WH	RD/WH	BK/WH
*UH1D120A9H51**	BL/WH	YL/WH	RD/WH	BK/WH

* -PREFIX MAY BE "A" OR "T"
** -SUFFIX MAY BE "A" THROUGH "Z"

RD/WH= LOW=1 BL/WH= MED.HIGH=3
YL/WH= MED. LOW=2 BK/WH= HIGH=4

DIAGNOSTIC CODES

FLASHING SLOW: NORMAL - NO CALL FOR HEAT
FLASHING FAST: NORMAL - CALL FOR HEAT
CONTINUOUS ON: REPLACE IFC
CONTINUOUS OFF: CHECK POWER
2 FLASHES: EXTERNAL LOCKOUT (RETRIES OR RECYCLES EXCEEDED)
3 FLASHES: PRESSURE SWITCH ERROR
4 FLASHES: OPEN LIMIT DEVICE
5 FLASHES: FLAME SENSED WHEN NO FLAME SHOULD BE PRESENT
6 FLASHES: 115 VAC POWER REVERSED POLARITY OR POOR GROUNDING
7 FLASHES: GAS VALVE CIRCUIT ERROR
8 FLASHES: LOW FLAME SENSE SIGNAL
9 FLASHES: CHECK IGNITER

⚠ WARNING

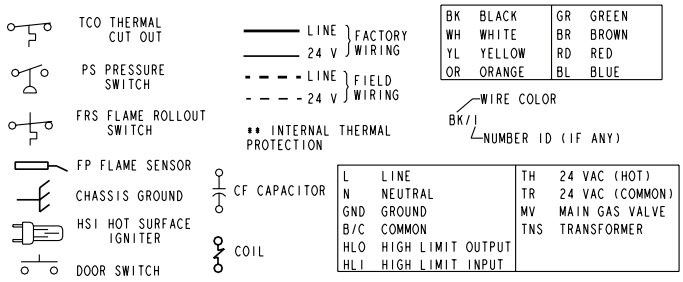
HAZARDOUS VOLTAGE:
DISCONNECT ALL ELECTRICAL POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.
FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

⚠ CAUTION

USE COPPER CONDUCTORS ONLY!
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

INTEGRATED FURNACE CONTROL

REPLACE WITH PART CNT04711 OR EQUIVALENT
INPUT: 25 VAC, 60 HZ.
XFMR SEC. CURRENT: 450 MA.
MV OUTPUT: 1.5 A @ 24 VAC
IND OUTPUT: 2.2 FLA, 3.5 LRA @ 120 VAC
CIRC. BLOWER OUTPUT: 14.5 FLA, 14.5 LRA @ 120 VAC
HUMIDIFER & AIR CLEANER MAX. LOAD: 1.0 A @ 120 VAC
IGNITER OUTPUT: 2.0 A @ 120 VAC



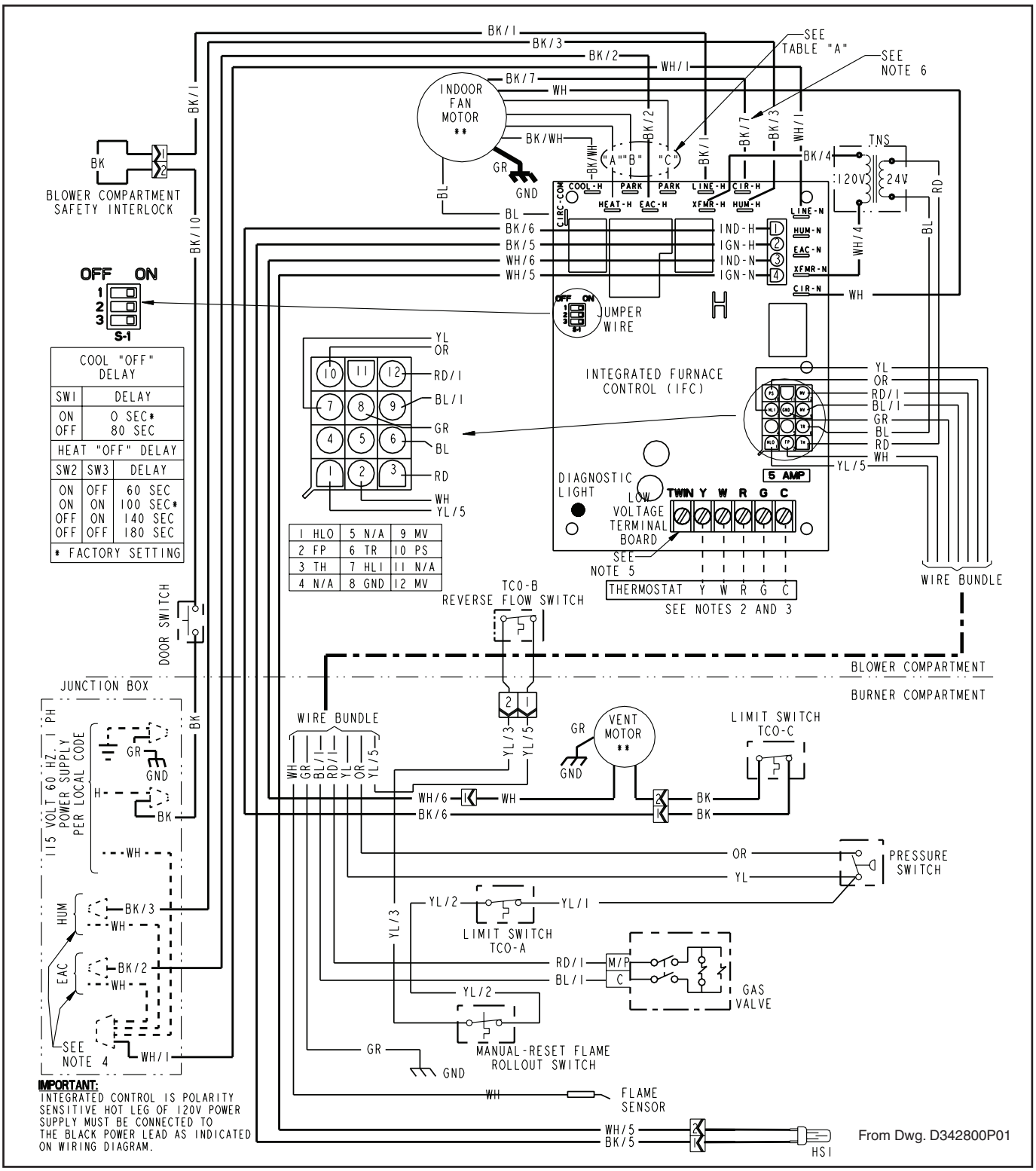
NOTES:

1. IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THIS FURNACE MUST BE REPLACED, IT MUST BE WITH WIRE HAVING A TEMPERATURE RATING OF AT LEAST 105 C.
2. THERMOSTAT HEAT ANTICIPATOR SETTING: .38 AMPS
3. FOR PROPER OPERATION OF COOLING SPEED, "Y" TERMINAL MUST BE CONNECTED TO THE ROOM THERMOSTAT.
4. THESE LEADS PROVIDE 120V POWER CONNECTIONS FOR ELECTRONIC AIR CLEANER (EAC) AND HUMIDIFIER (HUM). MAX. LOAD: 1.0 AMPS EACH.
5. WHEN TWINNING TWO FURNACES, BOTH UNITS MUST BE CONNECTED TO THE SAME 115 VAC PHASE CONNECT THE TWO UNITS 'TWIN' TERMINALS WITH 14 TO 22 AWG. WIRE.
6. FOR MOELS USING 3/4 HP & 1 HP INDOOR FAN MOTOR, USE DETAIL A & TABLE A.

From Dwg. D342491

Electrical Data

TDH1-H Wiring



Electrical Data

TDH1-H Schematic

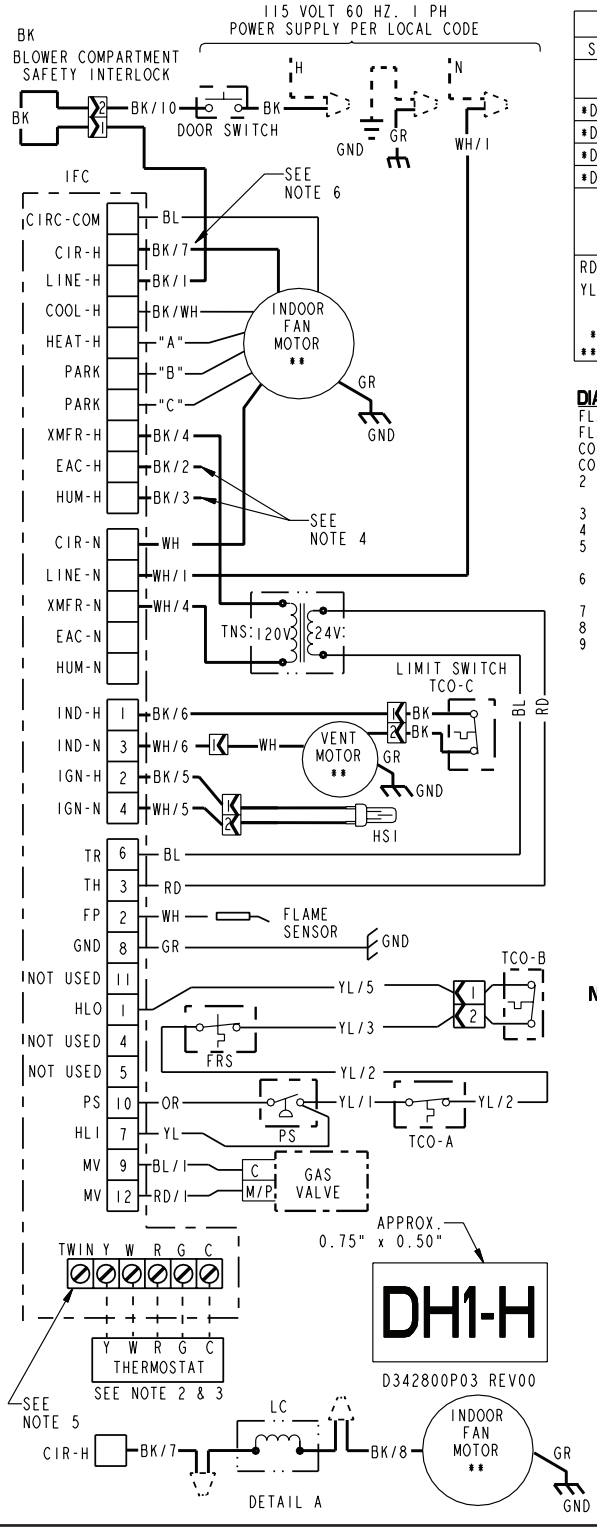


TABLE "A"				
SPEED TAPS FOR I.D. FAN MOTOR				
MODEL	HEAT "A"	PARK "B"	PARK "C"	COOL "D"
*DH1B040A9H21**	YL/WH	BL/WH	RD/WH	BK/WH
*DH1B065A9H31**	BL/WH	YL/WH	RD/WH	BK/WH
*DH1C085A9H41**	BL/WH	YL/WH	RD/WH	BK/WH
*DH1D110A9H51**	BL/WH	YL/WH	RD/WH	BK/WH

RD/WH = LOW=1 BL/WH = MED.HIGH=3
YL/WH = MED. LOW=2 BK/WH= HIGH=4

* - MAY BE PREFIX "A" OR "T"
** - MAY BE SUFFIX "A" THROUGH "Z"

⚠ WARNING

HAZARDOUS VOLTAGE:

DISCONNECT ALL ELECTRICAL POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

⚠ CAUTION

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

DIAGNOSTIC CODES

FLASHING SLOW: NORMAL - NO CALL FOR HEAT
FLASHING FAST: NORMAL - CALL FOR HEAT
CONTINUOUS ON: REPLACE IFC
CONTINUOUS OFF: CHECK POWER
2 FLASHES: EXTERNAL LOCKOUT (RETRIES OR RECYCLES EXCEEDED)
3 FLASHES: PRESSURE SWITCH ERROR
4 FLASHES: OPEN LIMIT DEVICE
5 FLASHES: FLAME SENSED WHEN NO FLAME SHOULD BE PRESENT
6 FLASHES: 115 VAC POWER REVERSED POLARITY OR POOR GROUNDING
7 FLASHES: GAS VALVE CIRCUIT ERROR
8 FLASHES: LOW FLAME SENSE SIGNAL
9 FLASHES: CHECK IGNITER

INTEGRATED FURNACE CONTROL

REPLACE WITH PART CNT04711 OR EQUIVALENT
INPUT: 25 VAC, 60 HZ.
XFMR SEC. CURRENT: 450 MA.
MV OUTPUT: 1.5 A @ 24 VAC
IND OUTPUT: 2.2 FLA, 3.5 LRA @ 120 VAC
CIRC. BLOWER OUTPUT: 14.5 FLA, 14.5 LRA @ 120 VAC
HUMIDIFER & AIR CLEANER MAX. LOAD: 1.0 A @ 120 VAC
IGNITER OUTPUT: 6.0 A @ 120 VAC

TCO THERMAL CUT OUT
PS PRESSURE SWITCH
FRS FLAME ROLLOUT SWITCH
FP FLAME SENSOR
CHASSIS GROUND
HSI HOT SURFACE IGNITER
DOOR SWITCH
CF CAPACITOR
COIL
LINE / 24 V — FACTORY WIRING
LINE / 24 V — FIELD WIRING
** INTERNAL THERMAL PROTECTION

BK	BLACK	GR	GREEN
WH	WHITE	BR	BROWN
YL	YELLOW	RD	RED
OR	ORANGE	BL	BLUE

WIRE COLOR
BK/1 — NUMBER ID (IF ANY)

L	LINE	TH	24 VAC (HOT)
N	NEUTRAL	TR	24 VAC (COMMON)
GND	GROUND	MV	MAIN GAS VALVE
B/C	COMMON	TNS	TRANSFORMER
HLO	HIGH LIMIT OUTPUT		
HLI	HIGH LIMIT INPUT		

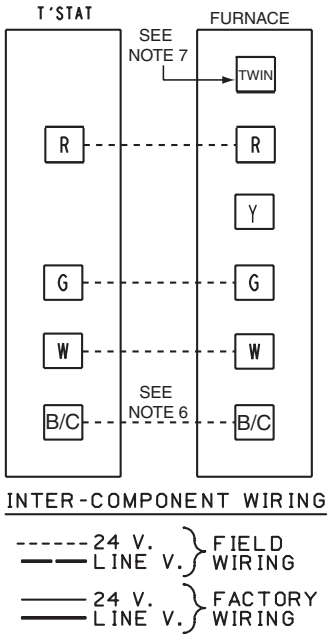
NOTES:

1. IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THIS FURNACE MUST BE REPLACED, IT MUST BE WITH WIRE HAVING A TEMPERATURE RATING OF AT LEAST 105 C.
2. THERMOSTAT HEAT ANTICIPATOR SETTING: .38 AMPS
3. FOR PROPER OPERATION OF COOLING SPEED, "Y" TERMINAL MUST BE CONNECTED TO THE ROOM THERMOSTAT.
4. THESE LEADS PROVIDE 120V POWER CONNECTIONS FOR ELECTRONIC AIR CLEANER (EAC) AND HUMIDIFIER (HUM). MAX. LOAD: 1.0 AMPS EACH.
5. WHEN TWINNING TWO FURNACES, BOTH UNITS MUST BE CONNECTED TO THE SAME 115 VAC PHASE CONNECT THE TWO UNITS 'TWIN' TERMINALS WITH 14 TO 22 AWG. WIRE.
6. FOR MOELS USING 3/4 HP & 1 HP INDOOR FAN MOTOR, USE DETAIL A & TABLE A.

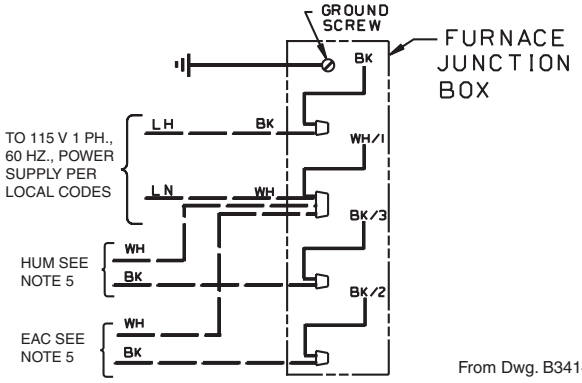
From Dwg. D342800P01

Field Wiring

FIELD WIRING DIAGRAM FOR 1 STAGE FURNACE
1 STAGE HEATING
USING A 1 STAGE HEATING THERMOSTAT
NO COOLING

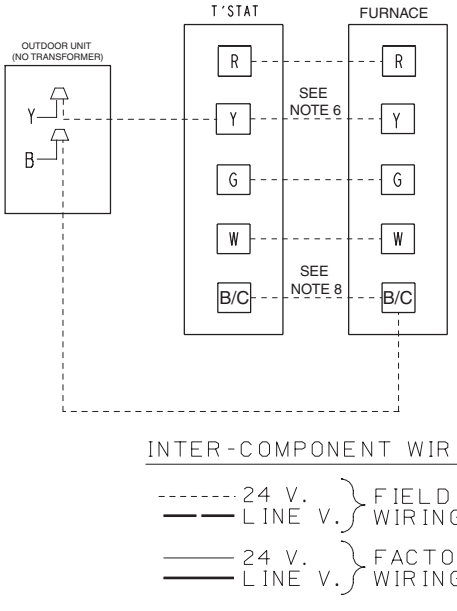


NOTES:
1. BE SURE POWER AGREES WITH EQUIPMENT NAMPLATE(S).
2. LOW VOLTAGE (24V. WIRING) TO BE NO. 18 A.W.G. MIN..
3. GROUNDING OF EQUIPMENT MUST COMPLY WITH LOCAL CODES.
4. SET THERMOSTAT HEAT ANTICIPATOR PER UNIT WIRING DIAGRAM.
5. THESE LEADS PROVIDE 115 V. POWER FOR CONNECTION OF ELECTRONIC AIR CLEANER AND HUMIDIFIER MAX. LOAD 1.0 AMPS EACH.
6. THIS CONNECTION IS ONLY USED FOR THERMOSTATS REQUIRING CONNECTION TO THE 24 V. POWER SUPPLY. (COMMON)
7. SEE TWINNING CONNECTION DIAGRAMS FOR PROPER CONNECTIONS WHEN USING THIS FEATURE.

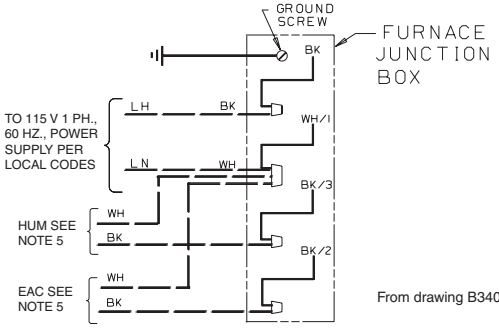


From Dwg. B341437 Rev. 1

FIELD WIRING DIAGRAM FOR 1 STAGE FURNACE
1 STAGE HEATING, 1 STAGE COOLING
USING A 1 STAGE HEATING, 1 STAGE COOLING THERMOSTAT
(OUTDOOR SECTION WITHOUT TRANSFORMER)

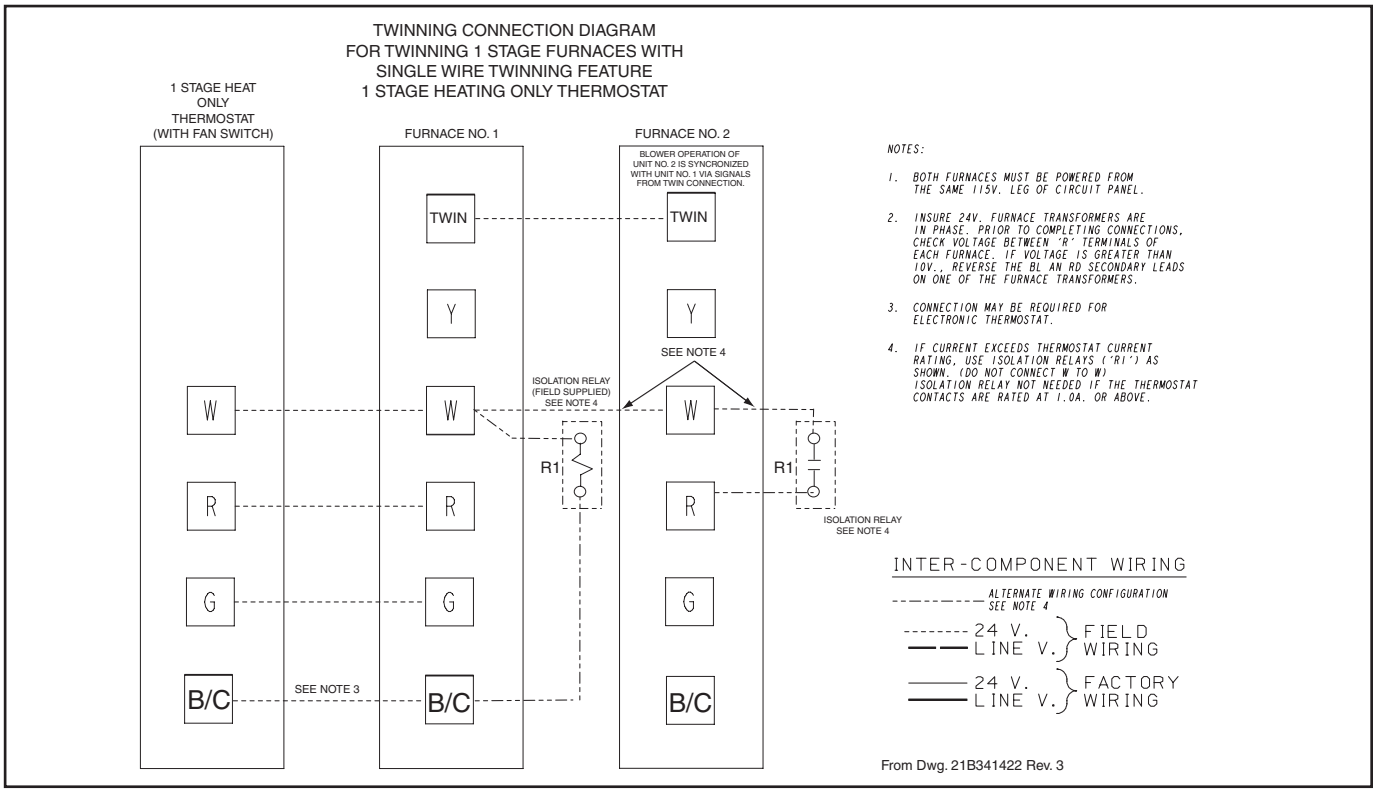


NOTES:
1. BE SURE POWER AGREES WITH EQUIPMENT NAMEPLATE(S)
2. LOW VOLTAGE(24 V. WIRING) TO BE NO. 18 A.W.G. MIN.
3. GROUNDING OF EQUIPMENT MUST COMPLY WITH LOCAL CODES.
4. SET THERMOSTAT HEAT ANTICIPATOR PER UNIT WIRING DIAGRAM.
5. THESE LEADS PROVIDE 115 V. POWER FOR CONNECTION OF ELECTRONIC AIR CLEANER AND HUMIDIFIER MAX. LOAD 1.0 AMPS EACH.
6. THE "Y" TERMINAL FROM THE THERMOSTAT MUST BE WIRED TO THE "Y" TERMINAL OF THE FURNACE CONTROL FOR PROPER BLOWER OPERATION DURING COOLING.
7. IGNITION CONTROL IS POLARITY SENSITIVE. HOT LEG OF 120 VOLT POWER SUPPLY MUST BE CONNECTED TO THE BLACK LINE POWER LEAD AS INDICATED ON THE WIRING DIAGRAM OR IGNITION LOCKOUT WILL OCCUR.
8. THIS CONNECTION IS ONLY USED FOR THERMOSTATS REQUIRING CONNECTION TO THE 24 V. POWER SUPPLY. (COMMON)

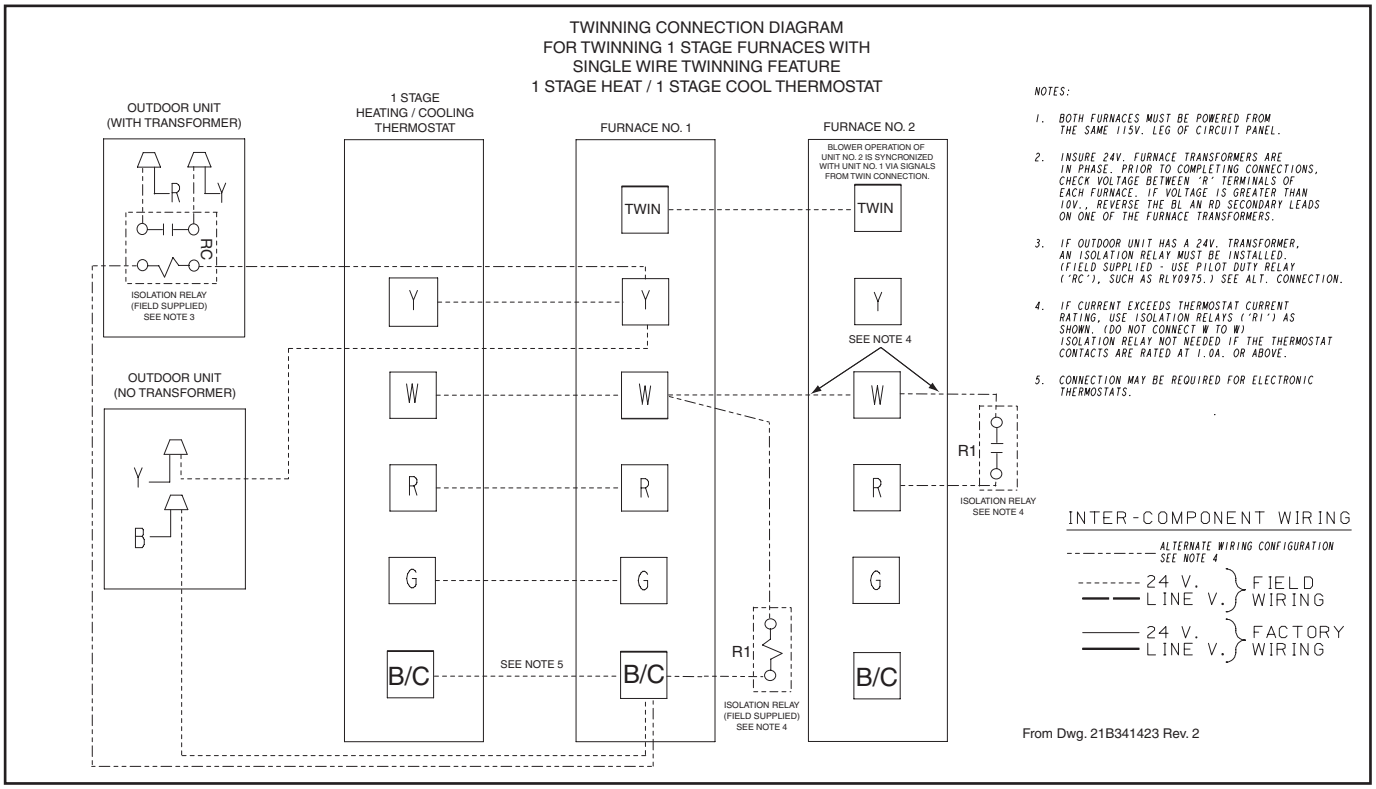


From drawing B340388 Rv 2

Twinning Field Wiring



From Dwg. 21B341422 Rev. 3

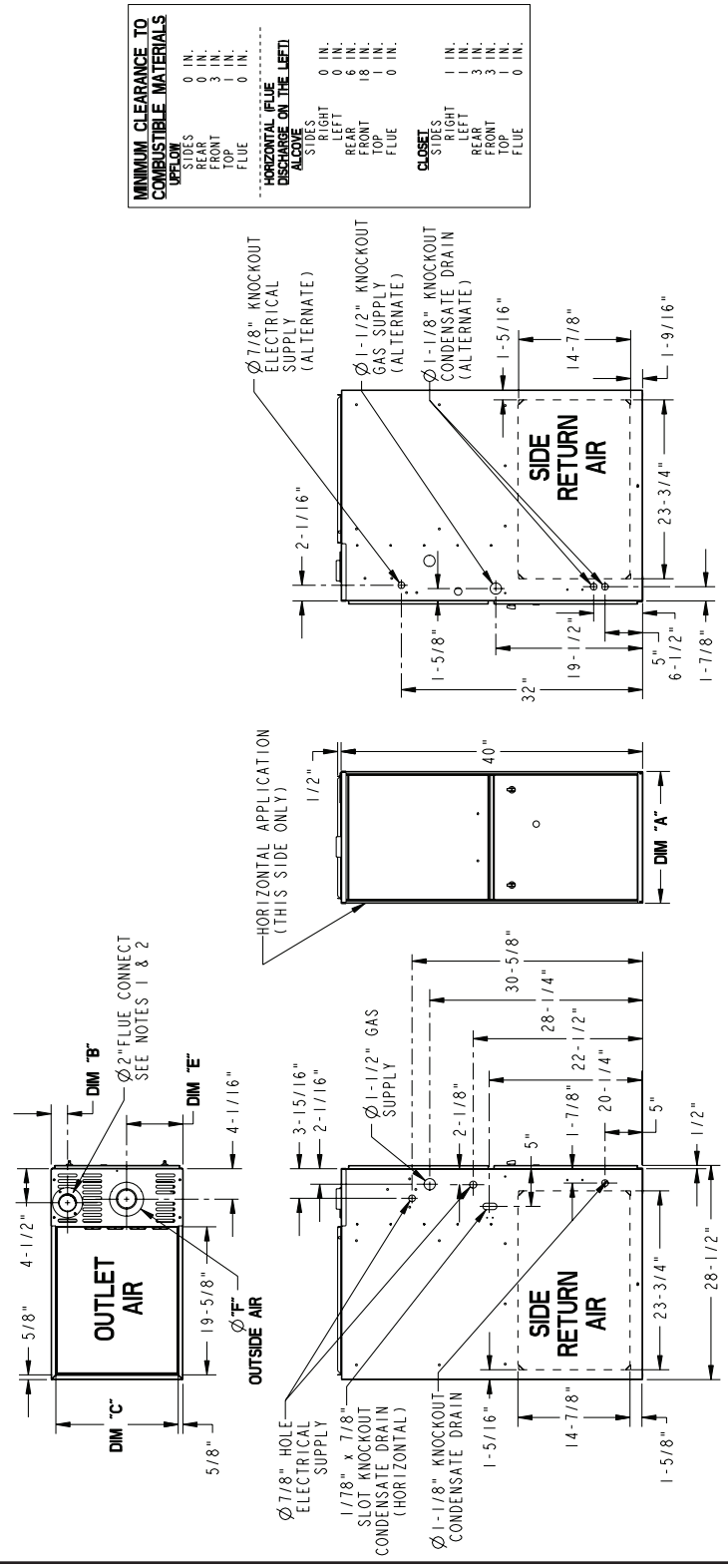


From Dwg. 21B341423 Rev. 2

Dimensions

TUH1-H OUTLINE DRAWING

(ALL DIMENSIONS ARE IN INCHES)

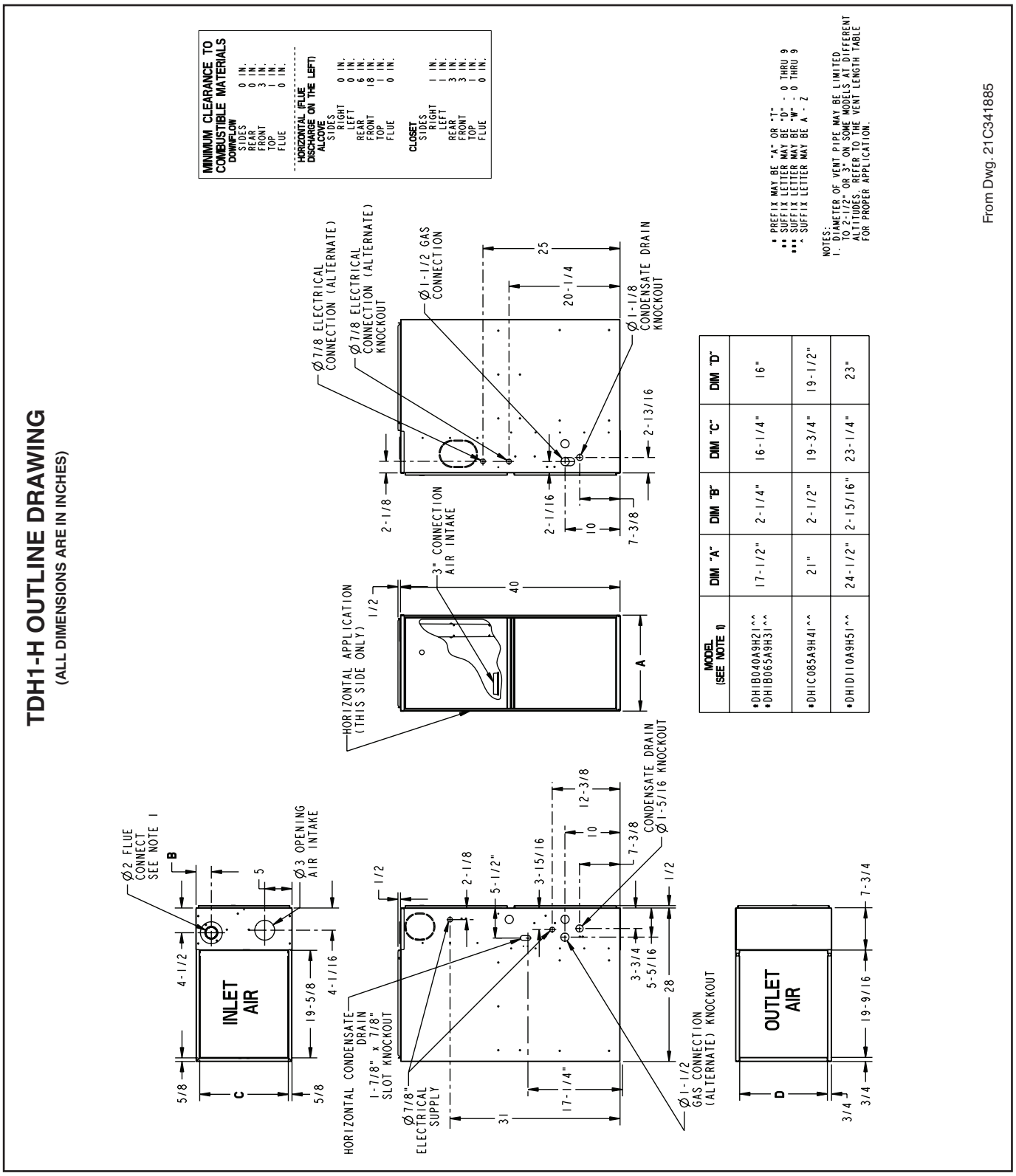


MODEL (SEE NOTE 1 &2)	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"	DIM "F"
*UH1B040A9H21^^ *UH1B060A9H31^^ *UH1B080A9H31^^	17-1/2"	2-1/4"	16-1/4"	16"	7-1/2"	2"
*UH1C100A9H41^^	21"	2-1/2"	19-3/4"	19-1/2"	9"	3"
*UH1D120A9H51^^	24-1/2"	2-15/16"	23-1/4"	23"	10"	3"

NOTES:
1. *UH1B080A9H31, *UH1C100A9H41, & *UH1D120A9H51 REQUIRE 3" DIAMETER VENT PIPE.
2. DIAMETER OF VENT PIPE MAY BE LIMITED TO 2-1/2" OR 3" ON SOME MODELS AT DIFFERENT ALTITUDES. REFER TO THE VENT LENGTH TABLE FOR PROPER APPLICATION.

From Dwg. 21C341884

Dimensions


TDH1-H OUTLINE DRAWING
(ALL DIMENSIONS ARE IN INCHES)
MINIMUM CLEARANCE TO COMBUSTIBLE MATERIALS
DOWNFLOW
SIDES 0 IN.
REAR 0 IN.
FRONT 3 IN.
TOP 1 IN.
FLUE 0 IN.
HORIZONTAL (FLUE DISCHARGE ON THE LEFT)
ALCOVE
SIDES
RIGHT 0 IN.
LEFT 0 IN.
REAR 6 IN.
FRONT 18 IN.
TOP 1 IN.
FLUE 0 IN.
CLOSET
SIDES
RIGHT 1 IN.
LEFT 3 IN.
REAR 3 IN.
FRONT 3 IN.
TOP 1 IN.
FLUE 0 IN.
* PREFIX MAY BE "A" OR "T"
** SUFFIX LETTER MAY BE "D" - 0 THRU 9
*** SUFFIX LETTER MAY BE "W" ; 0 THRU 9
^ SUFFIX LETTER MAY BE A - Z
NOTES:
1. DIAMETER OF VENT PIPE MAY BE LIMITED TO 2-1/2" OR 3" ON SOME MODELS AT DIFFERENT ALTITUDES. REFER TO THE VENT LENGTH TABLE FOR PROPER APPLICATION.
MODEL (SEE NOTE 1) | DIM "A" | DIM "B" | DIM "C" | DIM "D"
*DHIB040A9H21^^ *DHIB065A9H31^^ | 17-1/2" | 2-1/4" | 16-1/4" | 16"
*DHIC085A9H41^^ | 21" | 2-1/2" | 19-3/4" | 19-1/2"
*DHID110A9H51^^ | 24-1/2" | 2-15/16" | 23-1/4" | 23"
Ø2 FLUE CONNECT SEE NOTE 1
Ø3 OPENING AIR INTAKE
INLET AIR
OUTLET AIR
HORIZONTAL CONDENSATE DRAIN 1-7/8" x 7/8" SLOT KNOCKOUT
Ø7/8" ELECTRICAL SUPPLY
Ø1-1/2 GAS CONNECTION (ALTERNATE) KNOCKOUT
CONDENSATE DRAIN Ø1-5/16 KNOCKOUT
HORIZONTAL APPLICATION (THIS SIDE ONLY)
3" CONNECTION AIR INTAKE
Ø7/8 ELECTRICAL CONNECTION (ALTERNATE)
Ø7/8 ELECTRICAL CONNECTION (ALTERNATE) KNOCKOUT
Ø1-1/2 GAS CONNECTION
Ø1-1/8 CONDENSATE DRAIN KNOCKOUT
From Dwg. 21C341885

TRANE®

TRANE®

Literature Order Number	22-1859-01
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