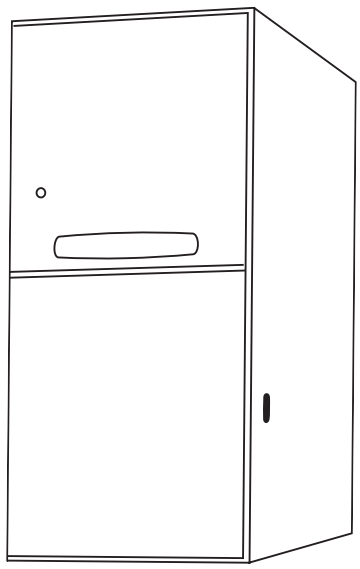
Submittal

Communicating Downflow/Horizontal Right Direct/Non-Direct Vent Modulating Gas Furnace with Variable Speed Inducer

TDHMB080ACV3VB
ADHMB080ACV3VB

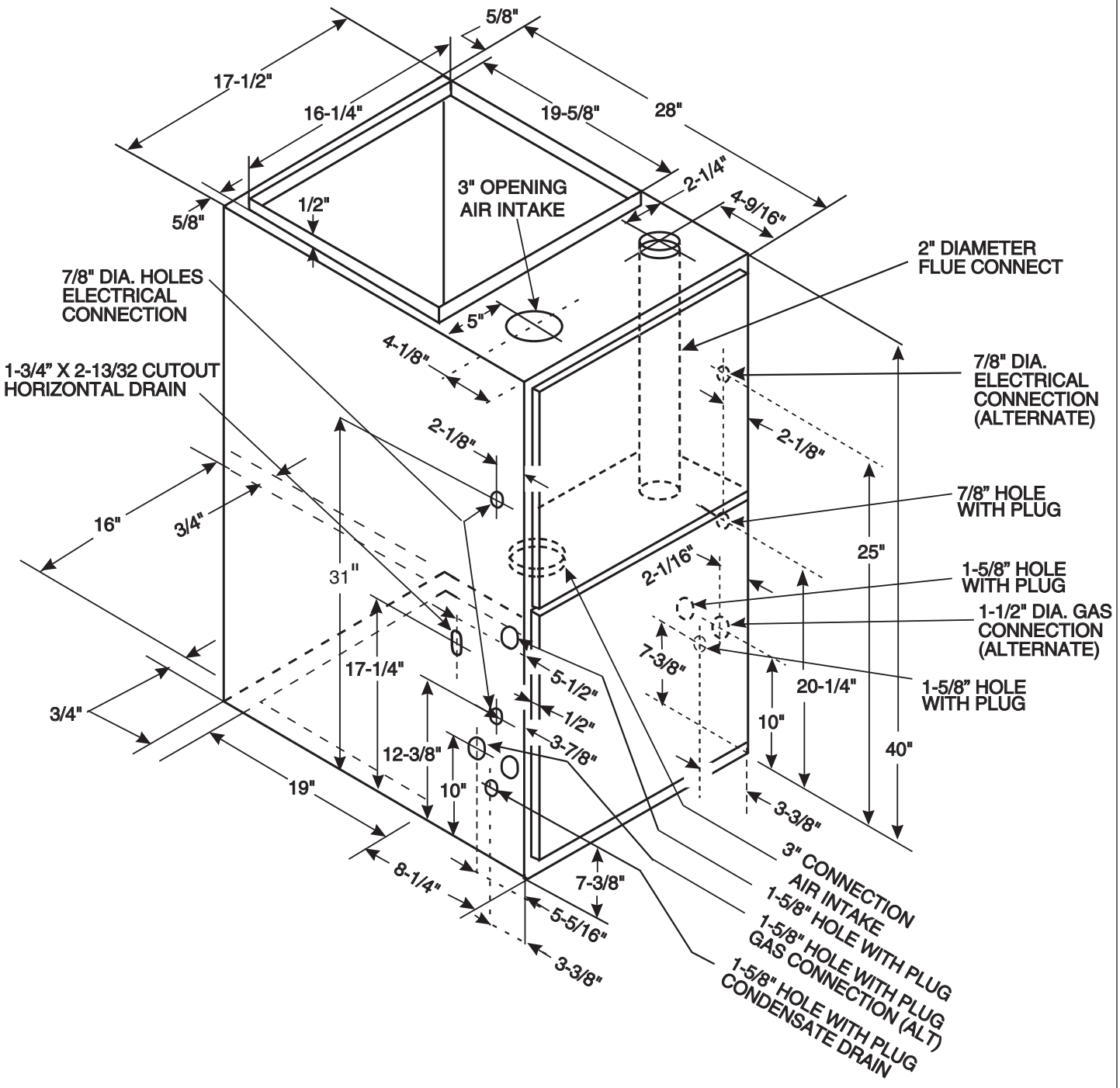
***DHM**



Note: *"Graphics in this document are for representation only. Actual model may differ in appearance."*

March 2020

TDHMB080–SUB–1G–EN


5/8"
17-1/2"
16-1/4"
19-5/8"
28"
3" OPENING
AIR INTAKE
2-1/4"
4-9/16"
1/2"
5/8"
2" DIAMETER
FLUE CONNECT
7/8" DIA. HOLES
ELECTRICAL
CONNECTION
5"
4-1/8"
1-3/4" X 2-13/32 CUTOUT
HORIZONTAL DRAIN
7/8" DIA.
ELECTRICAL
CONNECTION
(ALTERNATE)
2-1/8"
2-1/8"
7/8" HOLE
WITH PLUG
16"
3/4"
31"
25"
2-1/16"
1-5/8" HOLE
WITH PLUG
1-1/2" DIA. GAS
CONNECTION
(ALTERNATE)
7-3/8"
17-1/4"
5-1/2"
1-5/8" HOLE
WITH PLUG
20-1/4"
3/4"
1/2"
10"
3-7/8"
12-3/8"
40"
19"
10"
3-3/8"
3" CONNECTION
AIR INTAKE
8-1/4"
7-3/8"
1-5/8" HOLE WITH PLUG
5-5/16"
1-5/8" HOLE WITH PLUG
GAS CONNECTION (ALT)
3-3/8"
1-5/8" HOLE WITH PLUG
CONDENSATE DRAIN

TDHMB080 Airflow – Heating

Heating	*DHMB080ACV3VB^ Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure With Filter								
	Airflow Setting	Target Airflow (See Note 5)		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
40% (low) Heat	Low	683	CFM	648	670	681	685	687
			Temp. Rise	57	55	54	54	54
			Watts	79	79	148	155	219
	Medium Low	709	CFM	676	698	708	711	712
			Temp. Rise	54	53	52	52	52
			Watts	85	85	156	163	230
	Medium**	735	CFM	705	725	735	737	736
			Temp. Rise	52	51	50	50	50
			Watts	93	90	165	170	241
	High	845	CFM	824	841	849	846	838
			Temp. Rise	45	44	43	43	44
			Watts	129	119	207	206	291
65% (medium) Heat	Low	936	CFM	923	937	943	936	923
			Temp. Rise	55	54	54	54	55
			Watts	166	148	249	241	336
	Medium Low	972	CFM	962	974	980	972	956
			Temp. Rise	52	52	51	52	53
			Watts	183	161	268	256	355
	Medium**	1008	CFM	1001	1012	1017	1008	990
			Temp. Rise	50	50	50	50	51
			Watts	201	174	288	272	374
	High	1159	CFM	1165	1171	1173	1158	1130
			Temp. Rise	43	43	43	44	45
			Watts	286	240	382	348	460
100% (high) Heat	Low	1300	CFM	1318	1319	1319	1297	1261
			Temp. Rise	53	53	53	54	56
			Watts	382	314	485	431	549
	Medium Low	1350	CFM	1372	1372	1370	1347	1307
			Temp. Rise	51	51	51	52	54
			Watts	420	343	526	463	582
	Medium**	1400	CFM	1426	1424	1422	1396	1354
			Temp. Rise	49	49	49	50	52
			Watts	460	373	569	497	617
	High	1610	CFM	1654	1645	1639	1605	1549
			Temp. Rise	42	43	43	44	45
			Watts	650	518	770	655	772

Notes:
1. * First letter may be "A" or "T".
2. ** Factory setting.
3. Continuous Fan Setting: Heating or cooling airflow is approximately 50% of selected cooling value.
4. LOW 350 cfm/ton is recommended for variable speed application for COMFORT & HUMID CLIMATE setting; NORMAL is 400 cfm/ton; HIGH 450 cfm/ton is for DRY CLIMATE setting.
5. Target airflow is field selectable for third stage heating. Target airflow for first and second stage heating are percentages of third stage target and are not field selectable.

TDHMB080 Airflow – Cooling

Cooling	*DHMB080ACV3VB^ Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure With Filter							
	Unit Outdoor	Airflow Setting		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
	2	290 CFM/ton	CFM	535	558	572	580	580
			Watts	44	74	108	142	175
		310 CFM/ton	CFM	579	601	614	620	619
			Watts	51	82	118	152	187
		330 CFM/ton	CFM	622	643	655	660	659
			Watts	58	92	128	163	199
		350 CFM/ton	CFM	665	697	705	697	694
			Watts	67	104	141	175	214
		370 CFM/ton	CFM	709	728	738	741	737
			Watts	76	113	151	187	225
		400 CFM/ton	CFM	779	802	809	797	793
			Watts	90	131	169	207	250
		430 CFM/ton	CFM	839	854	863	862	855
			Watts	110	152	192	231	272
		450 CFM/ton	CFM	903	917	916	906	891
			Watts	125	168	208	248	287
	2.5	290 CFM/ton	CFM	692	712	723	726	722
			Watts	72	109	146	182	220
		310 CFM/ton	CFM	747	765	774	776	771
			Watts	85	123	162	199	238
		330 CFM/ton	CFM	801	817	826	827	820
			Watts	99	140	179	217	257
		350 CFM/ton	CFM	855	870	878	877	869
			Watts	115	157	198	237	278
		370 CFM/ton	CFM	909	923	930	927	918
			Watts	132	177	218	259	301
		400 CFM/ton	CFM	1005	1014	1014	1003	993
			Watts	164	211	252	295	337
		430 CFM/ton	CFM	1072	1082	1086	1078	1065
			Watts	196	246	291	336	381
		450 CFM/ton	CFM	1126	1134	1137	1129	1114
			Watts	221	272	319	366	411
	3	290 CFM/ton	CFM	849	865	873	872	864
			Watts	113	156	196	235	276
		310 CFM/ton	CFM	915	928	935	932	923
			Watts	134	179	221	261	303
		330 CFM/ton	CFM	980	992	997	993	982
			Watts	158	205	248	290	333
		350 CFM/ton	CFM	1045	1055	1060	1053	1041
			Watts	184	233	278	322	366
		370 CFM/ton	CFM	1110	1119	1122	1114	1100
			Watts	213	264	311	357	402
		400 CFM/ton	CFM	1211	1208	1209	1202	1195
			Watts	260	312	366	418	465
		430 CFM/ton	CFM	1305	1309	1309	1295	1242
			Watts	319	373	428	482	502
		450 CFM/ton	CFM	1370	1372	1371	1320	1242
			Watts	360	415	473	502	502

Notes:
1. * First letter may be "A" or "T".
2. ^ Letter may be "A" through "Z"
3. ** Factory setting.
4. Continuous Fan Setting: Heating or cooling airflow is approximately 50% of selected cooling value.
5. LOW 350 cfm/ton is recommended for variable speed application for COMFORT & HUMID CLIMATE setting; NORMAL is 400 cfm/ton; HIGH 450 cfm/ton is for DRY CLIMATE setting.

NOTE:
CONTINUOUS fan mode during COOLING operation may not be appropriate in humid climates. If the indoor air exceeds 60% relative humidity or simply feels uncomfortably humid, it is recommended that the fan only be used in the AUTO mode.

Airflow Adjustment

Check inlet and outlet air temperatures to make sure they are within the range specified on the Furnace rating nameplate. If the airflow needs to be increased or decreased, see the Airflow Label on the Furnace or the unit's Service Facts for information on changing the speed of the Blower Motor for your specific model. Blower speed changes are made on the User Interface.

INDOOR BLOWER TIMING

Heating: The Integrated Furnace Control module controls the Indoor Blower. The Blower start is fixed at 45 seconds after ignition. The FAN-OFF period is field selectable by the User Interface at 60, 100, 140, or 180 seconds. The factory setting is 100 seconds.

MODEL	**TDHMB080ACV3VB** ⑥ **ADHMB080ACV3VB**
TYPE	Downflow/Horizontal Right
RATINGS ②	
40% (low) heat Input BTUH	32,000
40% (low) heat Capacity BTUH (ICS) ③	32,000
100% (high) heat Input BTUH	80,000
100% (high) heat Capacity BTUH (ICS) ③	76,000
Temp. rise (Min.-Max.) °F.	35 - 65
AFUE	96.0
BLOWER DRIVE	DIRECT
Diameter - Width (In.)	10 x 8
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	1/2
R.P.M.	Variable
Volts/Ph/Hz	115/1/60
FLA	6.4 ⑦
COMBUSTION FAN – Type	Centrifugal
Drive - No. Speeds	Direct - Variable
Motor HP - RPM	1/50 - 5000
Volts/Ph/Hz	115/3/60
FLA	1.0
FILTER — Furnished?	Yes
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	2 - 14x20 - 1 in.
VENT — Size (in.)	2 Round
HEAT EXCHANGER	
Type -Fired	Aluminized Steel - Type I
-Unfired	
Gauge (Fired)	20
ORIFICES — Main	
Nat. Gas. Qty. — Drill Size	4 — 45
L.P. Gas Qty. — Drill Size ⑤	4 — 56
GAS VALVE	Redundant - Three Stage
PILOT SAFETY DEVICE	
Type	Hot Surface Igniter
BURNERS — Type	Multiport Inshot
Number	4
POWER CONN. — V/Ph/Hz ④	115/1/60
Ampacity (In Amps)	9.2
Max. Overcurrent Protection (Amps)	15
PIPE CONN. SIZE (IN.)	1/2
DIMENSIONS	H x W x D
Crated (In.)	41-3/4 x 19-1/2 x 30-1/2
WEIGHT	
Shipping (Lbs.)/Net (Lbs)	168 / 158

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 Furnace ships in natural gas configuration. The LP conversion kit used with the modulating furnace is BAYLPSS220B or BAYLPKT220B.
⑥ Energy Star
⑦ Check motor nameplate for actual FLA

Mechanical Specifications

MODULATING OPERATION
The modulating gas valve provides longer heating cycles for more consistent heating comfort. Modulates from 40% to 100% in less than 1% increments of the furnace's heating capacity saving energy, while at the same time providing maximum homeowner comfort.

COMMUNICATING MODE
Furnace is shipped ready to be connected in communicating mode using three wire hook-up using A/TCONT900 comfort control.

ALTERNATE 24V MODE
Furnace is field configurable to 24V non-communicating mode.

COMFORT CONTROL
Communicating furnace design, offers plug and play – walk away installation. Assures the entire heating and air conditioning system is set up in the proper modes to optimize the engineered performance of the matched system installed. The furnace can also be connected in 24V mode.

NATURAL GAS MODELS
Central Heating furnace designs are certified by the American Gas Association 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.

ENERGY EFFICIENT OPERATION
Furnace is certified to leak 2% or less of nominal air conditioning CFM delivered when pressurized to .5" water column with all inlets, outlets, and drains sealed.

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 additional 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
Multi-port In-shot 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 EAC and Humidifier.

AIR DELIVERY
The variable speed blower motor has sufficient airflow for most heating and cooling requirements and 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.

SECONDARY HEAT EXCHANGER
The furnace has a special type 29-4C™ stainless steel secondary heat exchanger to reclaim heat from flue gases which would normally be lost.

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 High Efficiency Gas Furnaces utilize an Adaptive Heat Up 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.

About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit www.trane.com or www.americanstandardair.com

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The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

TDHMB080-SUB-1G-EN 30 Mar 2020
Supersedes TDHMB080-SUB-1F (May 2015)