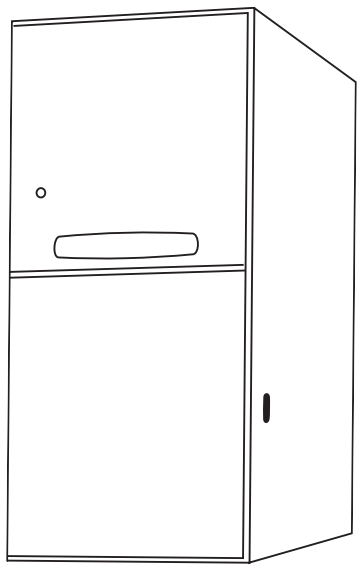
Submittal

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

TDHMC100ACV4VB
ADHMC100ACV4VB

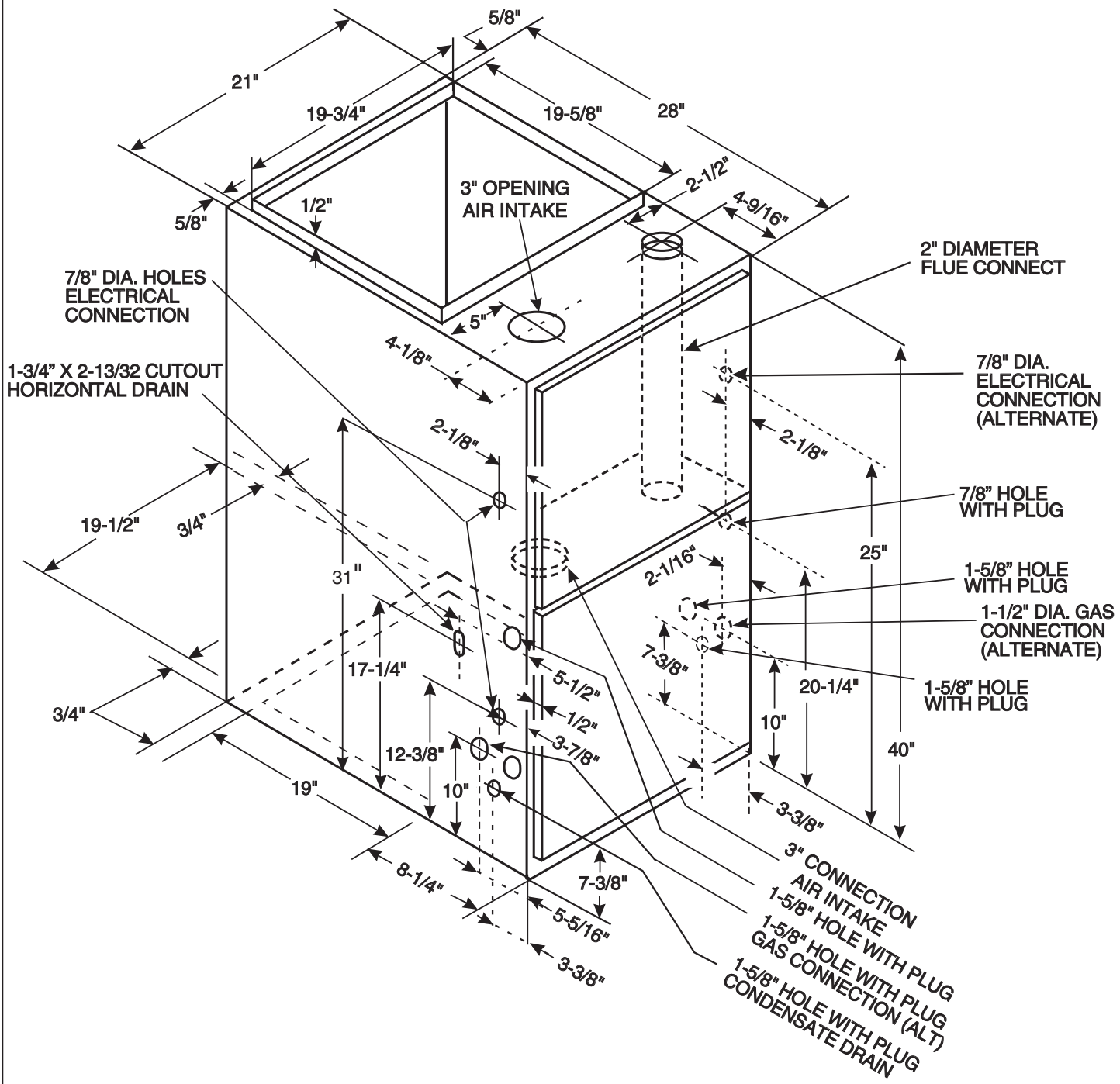
***DHM**



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

March 2020

TDHMC100–SUB–1H–EN


5/8"
21"
19-3/4"
19-5/8"
28"
3" OPENING
AIR INTAKE
1/2"
5/8"
2-1/2"
4-9/16"
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"
19-1/2"
3/4"
7/8" HOLE
WITH PLUG
25"
31"
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"
1/2"
3-7/8"
20-1/4"
1-5/8" HOLE
WITH PLUG
3/4"
10"
40"
12-3/8"
10"
19"
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

TDHMC100 Airflow – Heating

Heating

***DHMC100ACV4VB^** 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	668	CFM	666	657	643	628	609
			Temp. Rise	59	59	61	62	64
			Watts	24	92	116	206	206
	Medium Low	712	CFM	710	701	686	670	650
			Temp. Rise	55	56	57	58	60
			Watts	32	105	128	220	227
	Medium**	734	CFM	732	723	708	690	670
			Temp. Rise	53	54	55	56	58
			Watts	36	111	134	227	237
	High	757	CFM	755	744	729	711	690
			Temp. Rise	52	52	53	55	56
			Watts	40	118	140	235	247
65% (medium) Heat	Low	1080	CFM	1077	1063	1041	1016	985
			Temp. Rise	59	59	61	62	64
			Watts	128	237	237	368	398
	Medium Low	1152	CFM	1149	1134	1110	1083	1051
			Temp. Rise	55	56	57	58	60
			Watts	153	270	262	404	432
	Medium**	1188	CFM	1185	1169	1145	1117	1084
			Temp. Rise	53	54	55	56	58
			Watts	166	286	275	422	449
	High	1224	CFM	1221	1205	1180	1151	1117
			Temp. Rise	52	52	53	55	56
			Watts	180	304	288	441	466
100% (high) Heat	Low	1500	CFM	1496	1476	1446	1410	1368
			Temp. Rise	59	59	61	62	64
			Watts	304	455	396	604	596
	Medium Low	1600	CFM	1596	1575	1542	1504	1460
			Temp. Rise	55	56	57	58	60
			Watts	356	517	438	670	643
	Medium**	1650	CFM	1646	1624	1590	1551	1505
			Temp. Rise	53	54	55	56	58
			Watts	384	550	461	705	667
	High	1700	CFM	1696	1673	1639	1598	1551
			Temp. Rise	52	52	53	55	56
			Watts	413	583	483	726	726

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.

TDHMC100 Airflow – Cooling

Cooling

***DHMC100ACV4VB^** 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
2.5	290 CFM/ton	CFM	723	713	699	682	661
		Watts	58	109	157	204	234
	310 CFM/ton	CFM	773	763	747	729	707
		Watts	72	125	174	222	256
	330 CFM/ton	CFM	823	812	795	776	753
		Watts	87	141	182	241	279
	350 CFM/ton	CFM	873	861	842	823	798
		Watts	103	158	210	260	302
	370 CFM/ton	CFM	923	910	892	870	844
		Watts	120	177	229	279	325
	400 CFM/ton	CFM	998	984	964	940	912
		Watts	148	206	258	309	360
	430 CFM/ton	CFM	1072	1058	1036	1011	981
		Watts	179	238	290	341	396
	450 CFM/ton	CFM	1122	1107	1084	1058	1026
		Watts	201	260	312	362	420
3	290 CFM/ton	CFM	868	856	839	818	794
		Watts	101	157	208	258	299
	310 CFM/ton	CFM	928	915	896	874	849
		Watts	122	179	231	281	327
	330 CFM/ton	CFM	988	974	954	931	903
		Watts	144	202	254	305	356
	350 CFM/ton	CFM	1047	1033	1012	987	958
		Watts	169	227	279	330	384
	370 CFM/ton	CFM	1107	1092	1070	1044	1013
		Watts	195	253	305	356	413
	400 CFM/ton	CFM	1197	1181	1157	1128	1095
		Watts	237	296	346	395	455
	430 CFM/ton	CFM	1287	1269	1243	1213	1177
		Watts	284	341	390	436	498
	450 CFM/ton	CFM	1347	1329	1301	1269	1232
		Watts	317	373	420	465	526
3.5	290 CFM/ton	CFM	1013	999	978	954	926
		Watts	154	212	265	315	367
	310 CFM/ton	CFM	1082	1068	1048	1020	990
		Watts	184	242	294	345	401
	330 CFM/ton	CFM	1152	1137	1113	1086	1054
		Watts	215	274	325	375	434
	350 CFM/ton	CFM	1222	1206	1181	1152	1118
		Watts	250	308	358	406	467
	370 CFM/ton	CFM	1292	1274	1248	1218	1182
		Watts	286	344	392	439	500
	400 CFM/ton	CFM	1397	1378	1349	1316	1277
		Watts	346	401	446	489	548
	430 CFM/ton	CFM	1501	1481	1451	1415	1373
		Watts	411	463	503	541	595
	450 CFM/ton	CFM	1571	1550	1518	1481	1437
		Watts	457	507	543	577	625
4	290 CFM/ton	CFM	1157	1142	1118	1091	1058
		Watts	218	276	328	377	436
	310 CFM/ton	CFM	1237	1220	1195	1166	1131
		Watts	257	315	365	413	474
	330 CFM/ton	CFM	1317	1299	1272	1241	1204
		Watts	300	357	405	450	512
	350 CFM/ton	CFM	1397	1378	1349	1316	1277
		Watts	346	401	446	489	548
	370 CFM/ton	CFM	1476	1456	1426	1392	1350
		Watts	395	448	489	529	584
	400 CFM/ton	CFM	1596	1575	1542	1504	1460
		Watts	474	523	558	591	636
	430 CFM/ton	CFM	1716	1693	1658	1617	1569
		Watts	560	604	631	726	726
	450 CFM/ton	CFM	1796	1771	1735	1693	1642
		Watts	622	661	682	726	726

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	TDHMC100ACV4VB ⑥ ADHMC100ACV4VB
TYPE	Downflow/Horizontal Right
RATINGS ②	
40% (low) heat Input BTUH	40,000
40% (low) heat Capacity BTUH (ICS) ③	39,000
100% (high) heat Input BTUH	100,000
100% (high) heat Capacity BTUH (ICS) ③	96,000
Temp. rise (Min.-Max.) °F.	35 - 65
AFUE	96.0
BLOWER DRIVE	DIRECT
Diameter - Width (In.)	10 x 10
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	3/4
R.P.M.	Variable
Volts/Ph/Hz	115/1/60
FLA	8.0
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 - 16x20 - 1 in.
VENT Size Min. (in.)	2.5 Round
HEAT EXCHANGER	
Type -Fired	Aluminized Steel - Type I
-Unfired	
Gauge (Fired)	20
ORIFICES — Main	
Nat. Gas. Qty. — Drill Size	5 — 45
L.P. Gas Qty. — Drill Size ⑤	5 — 56
GAS VALVE	Redundant - Three Stage
PILOT SAFETY DEVICE	
Type	Hot Surface Igniter
BURNERS — Type	Multiport Inshot
Number	5
POWER CONN. — V/Ph/Hz ④	115/1/60
Ampacity (In Amps)	11.2
Max. Overcurrent Protection (Amps)	15
PIPE CONN. SIZE (IN.)	1/2
DIMENSIONS	H x W x D
Crated (In.)	41-3/4 x 23 x 30-1/2
WEIGHT	
Shipping (Lbs.)/Net (Lbs)	185 / 175

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

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.

TDHMC100-SUB-1H-EN 30 Mar 2020
Supersedes TDHMC100-SUB-1G (February 2018)