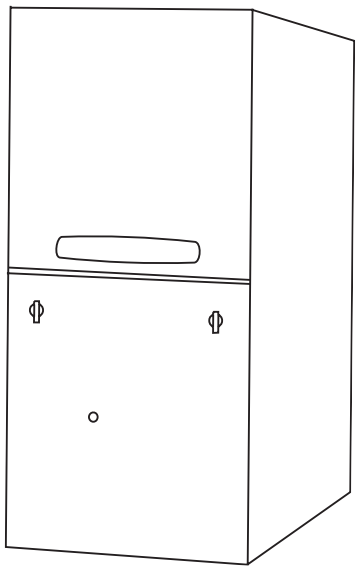
Submittal

Communicating Upflow/Horizontal Left Direct/Non-Direct Vent Modulating Gas Furnace with Variable Speed Inducer

TUHMB080ACV3VB
AUHMB080ACV3VB

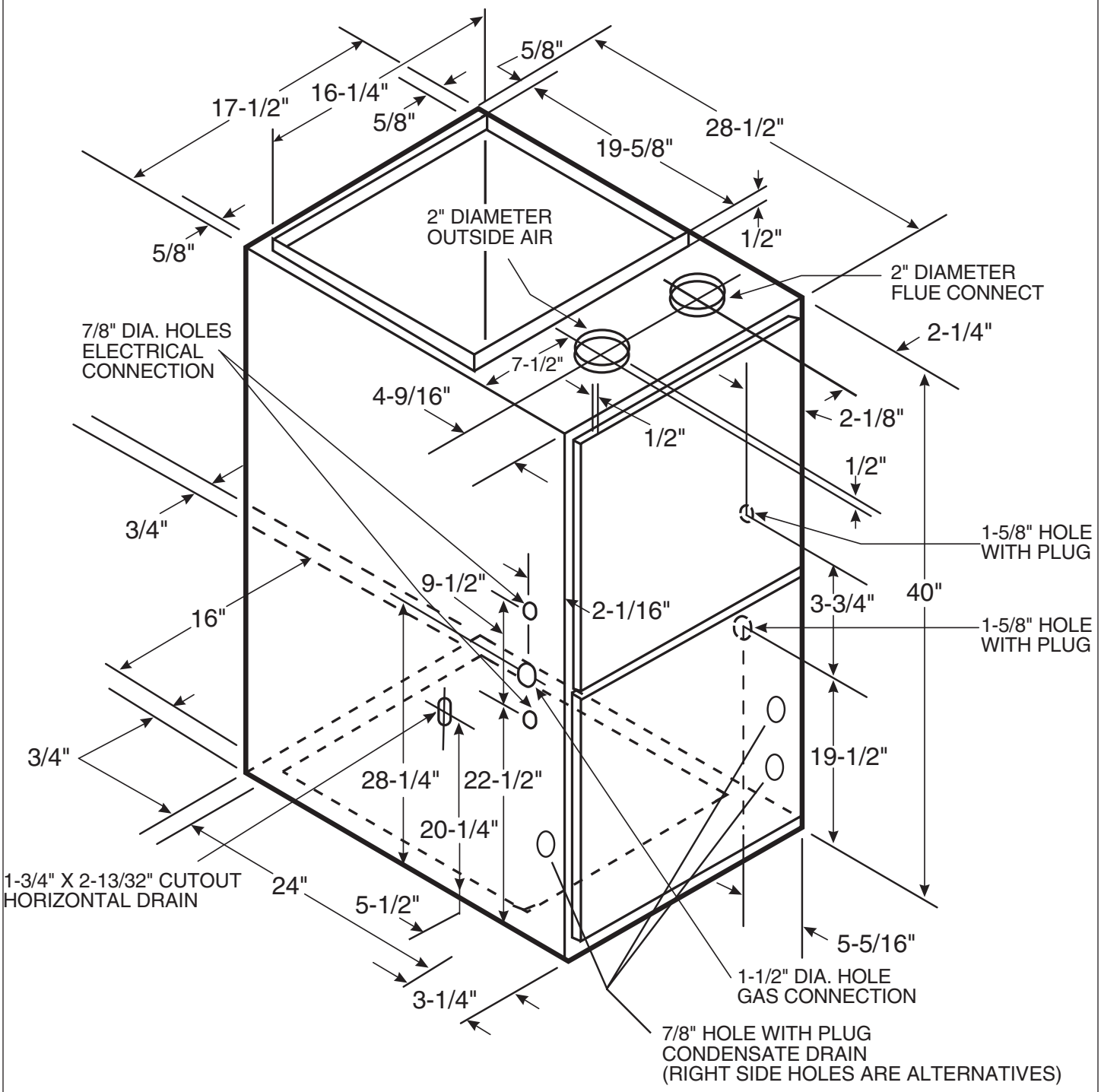
***UHM**



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

March 2020

TUHMB080–SUB–1H–EN


17-1/2"
16-1/4"
5/8"
5/8"
5/8"
19-5/8"
28-1/2"
1/2"
2" DIAMETER
OUTSIDE AIR
2" DIAMETER
FLUE CONNECT
2-1/4"
7/8" DIA. HOLES
ELECTRICAL
CONNECTION
7-1/2"
4-9/16"
1/2"
2-1/8"
1/2"
3/4"
1-5/8" HOLE
WITH PLUG
9-1/2"
2-1/16"
3-3/4"
40"
16"
1-5/8" HOLE
WITH PLUG
3/4"
19-1/2"
28-1/4"
22-1/2"
20-1/4"
1-3/4" X 2-13/32" CUTOUT
HORIZONTAL DRAIN
24"
5-1/2"
5-5/16"
1-1/2" DIA. HOLE
GAS CONNECTION
3-1/4"
7/8" HOLE WITH PLUG
CONDENSATE DRAIN
(RIGHT SIDE HOLES ARE ALTERNATIVES)

TUHMB080 Airflow – Heating

Heating	*UHMB080ACV3VB^ 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	571	CFM	512	564	581	538	572
			Temp. Rise	70	63	62	66	62
			Watts	45	77	112	109	146
	Medium Low	643	CFM	586	634	649	606	634
			Temp. Rise	61	56	55	59	56
			Watts	57	90	129	127	177
	Medium**	714	CFM	661	704	717	673	696
			Temp. Rise	54	51	50	53	51
			Watts	71	106	148	146	207
	High	821	CFM	772	809	819	774	789
			Temp. Rise	46	44	44	46	45
			Watts	99	136	184	176	253
65% (medium) Heat	Low	806	CFM	757	794	805	760	776
			Temp. Rise	67	63	63	66	65
			Watts	95	132	179	172	246
	Medium Low	907	CFM	862	893	901	855	864
			Temp. Rise	59	56	56	59	58
			Watts	127	165	217	202	289
	Medium**	1008	CFM	967	992	997	951	951
			Temp. Rise	52	51	51	53	53
			Watts	165	205	262	235	332
	High	1159	CFM	1125	1139	1141	1093	1083
			Temp. Rise	45	44	44	46	47
			Watts	233	276	341	288	395
100% (high) Heat	Low	1120	CFM	1084	1101	1104	1056	1048
			Temp. Rise	65	64	63	66	67
			Watts	214	256	319	273	379
	Medium Low	1260	CFM	1230	1238	1237	1188	1170
			Temp. Rise	57	57	57	59	60
			Watts	286	331	401	325	437
	Medium**	1400	CFM	1376	1375	1370	1320	1292
			Temp. Rise	51	51	51	53	54
			Watts	369	418	495	381	496
	High	1610	CFM	1595	1580	1570	1519	1474
			Temp. Rise	44	44	45	46	48
			Watts	398	470	522	522	529

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.

TUHMB080 Airflow – Cooling

Cooling	*UHMB080ACV3VB^ 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	504	565	586	521	540
		Watts	34	70	104	138	172
	310 CFM/ton	CFM	547	604	624	559	579
		Watts	40	77	112	147	182
	330 CFM/ton	CFM	590	644	663	597	617
		Watts	47	85	121	157	193
	350 CFM/ton	CFM	656	695	701	703	694
		Watts	54	93	130	167	204
	370 CFM/ton	CFM	676	724	740	674	694
		Watts	62	102	140	179	217
	400 CFM/ton	CFM	764	792	801	795	789
		Watts	75	116	157	197	238
	430 CFM/ton	CFM	806	844	856	788	810
		Watts	89	133	175	216	259
	450 CFM/ton	CFM	877	899	901	895	886
		Watts	102	145	188	230	275
2.5	290 CFM/ton	CFM	660	709	726	659	680
		Watts	59	99	136	174	212
	310 CFM/ton	CFM	740	768	772	769	764
		Watts	70	109	149	189	229
	330 CFM/ton	CFM	768	809	822	755	776
		Watts	81	123	164	205	246
	350 CFM/ton	CFM	848	869	871	868	858
		Watts	94	138	179	220	265
	370 CFM/ton	CFM	875	909	918	850	872
		Watts	107	153	197	240	284
	400 CFM/ton	CFM	978	994	992	989	980
		Watts	130	179	224	270	316
	430 CFM/ton	CFM	1037	1058	1063	994	1017
		Watts	157	209	258	305	354
	450 CFM/ton	CFM	1093	1096	1082	1065	1051
		Watts	174	227	276	324	378
3	290 CFM/ton	CFM	816	854	865	798	819
		Watts	92	136	178	220	262
	310 CFM/ton	CFM	881	914	923	855	877
		Watts	108	155	199	242	286
	330 CFM/ton	CFM	945	974	981	912	935
		Watts	127	176	222	266	313
	350 CFM/ton	CFM	1029	1043	1043	1035	1028
		Watts	148	199	246	292	340
	370 CFM/ton	CFM	1074	1093	1097	1027	1050
		Watts	170	224	274	322	372
	400 CFM/ton	CFM	1170	1181	1184	1180	1174
		Watts	206	262	317	370	423
	430 CFM/ton	CFM	1268	1276	1270	1199	1224
		Watts	254	314	372	430	484
	450 CFM/ton	CFM	1321	1321	1306	1295	1251
		Watts	287	351	415	477	518
3.5	290 CFM/ton	CFM	972	998	1005	936	959
		Watts	135	185	232	277	324
	310 CFM/ton	CFM	1047	1068	1073	1003	1026
		Watts	161	213	262	310	359
	330 CFM/ton	CFM	1123	1138	1140	1070	1094
		Watts	189	244	296	347	398
	350 CFM/ton	CFM	1195	1204	1208	1205	1195
		Watts	215	275	329	383	437
	370 CFM/ton	CFM	1273	1278	1275	1204	1228
		Watts	257	317	376	433	488
	400 CFM/ton	CFM	1375	1385	1384	1383	1305
		Watts	316	383	444	513	513
	430 CFM/ton	CFM	1499	1487	1491	1392	1303
		Watts	389	457	513	513	513
	450 CFM/ton	CFM	1513	1512	1508	1418	1341
		Watts	398	470	529	524	522

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	TUHMB080ACV3VB ⑥ AUHMB080ACV3VB
TYPE	Upflow/Horizontal Left
RATINGS ②	
40% (low) heat Input BTUH	32,000
40% (low) heat Capacity BTUH (ICS) ③	31,000
100% (high) heat Input BTUH	80,000
100% (high) heat Capacity BTUH (ICS) ③	76,000
Temp. rise (Min.-Max.) °F.	35 - 65
AFUE (Upflow / Horizontal)	97.0 / 96.2
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.)	1 - 17x25 - 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 / 156

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.

TUHMB080-SUB-1H-EN 30 Mar 2020
Supersedes TUHMB080-SUB-1G (November 2016)