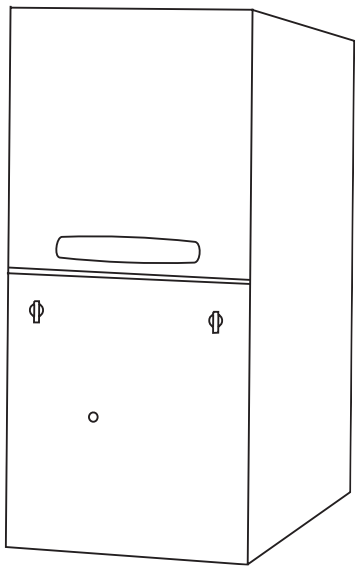
Submittal

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

TUHMD120ACV5VB
AUHMD120ACV5VB

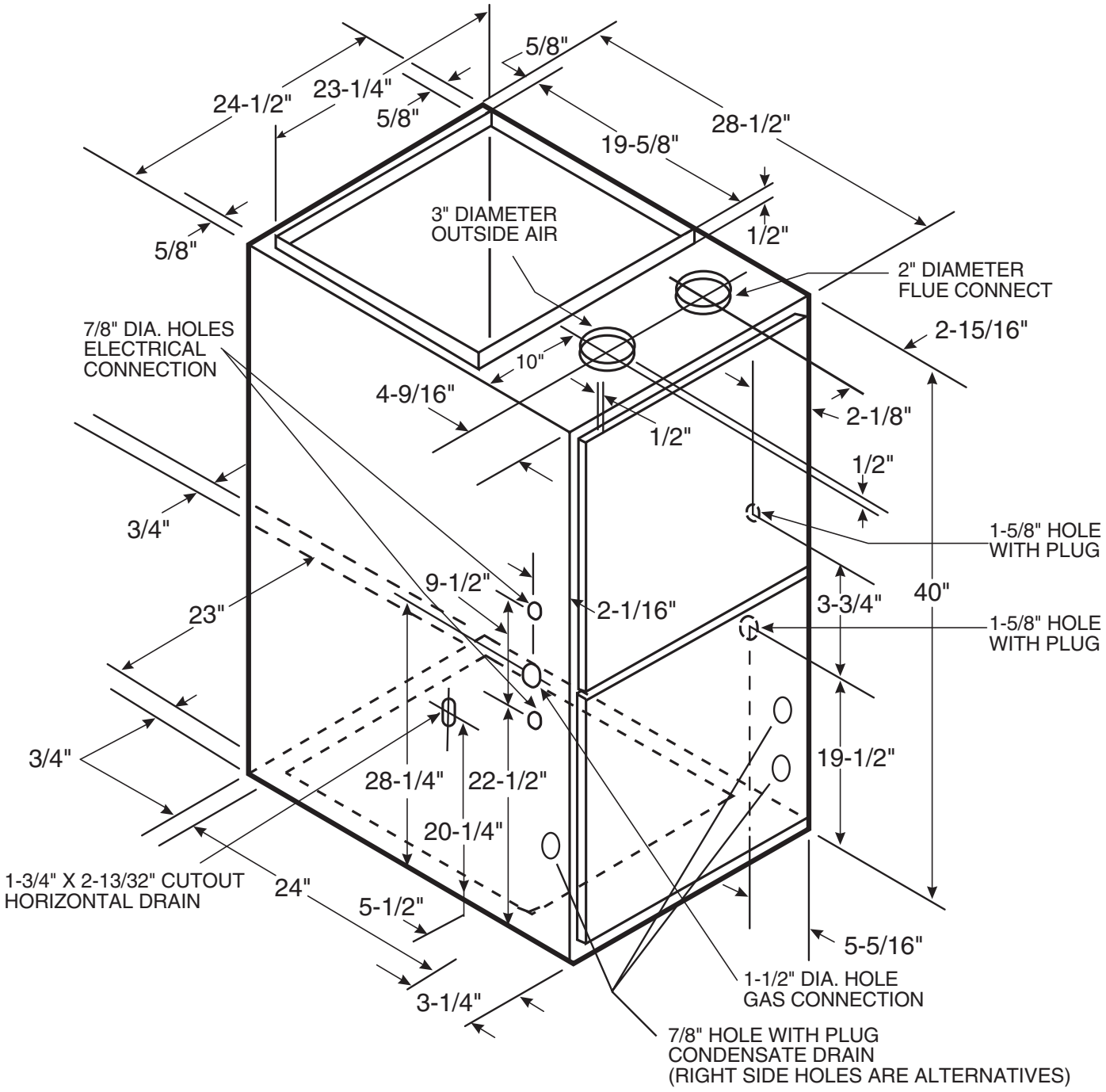
***UHM**



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

March 2020

TUHMD120–SUB–1H–EN


5/8"
24-1/2"
23-1/4"
5/8"
28-1/2"
19-5/8"
5/8"
3" DIAMETER
OUTSIDE AIR
1/2"
2" DIAMETER
FLUE CONNECT
7/8" DIA. HOLES
ELECTRICAL
CONNECTION
2-15/16"
10"
4-9/16"
2-1/8"
1/2"
1/2"
3/4"
1-5/8" HOLE
WITH PLUG
9-1/2"
2-1/16"
3-3/4"
40"
23"
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)

TUHMD120 Airflow – Heating

***UHMD120ACV5VB^** 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
Heating	45% (low) Heat	Low	748	CFM 728	758	785	805	819
			Temp. Rise 62	59	57	56	55	
			Watts 119	107	102	94	108	
		Medium Low	788	CFM 769	797	822	840	853
			Temp. Rise 58	56	54	53	53	
			Watts 113	107	111	113	133	
		Medium**	832	CFM 813	841	864	880	890
			Temp. Rise 55	53	52	51	50	
			Watts 108	107	122	135	160	
		High	880	CFM 863	889	910	923	930
			Temp. Rise 52	50	49	49	48	
			Watts 104	108	135	160	191	
	65% (medium) Heat	Low	1224	CFM 1213	1232	1237	1232	1220
			Temp. Rise 60	60	59	60	60	
			Watts 131	160	253	345	405	
		Medium Low	1289	CFM 1279	1297	1299	1290	1274
			Temp. Rise 57	57	56	57	58	
			Watts 147	178	281	382	445	
		Medium**	1361	CFM 1353	1369	1367	1355	1335
			Temp. Rise 54	54	54	54	55	
			Watts 168	201	313	423	489	
		High	1440	CFM 1434	1448	1443	1426	1402
			Temp. Rise 51	51	51	51	52	
			Watts 197	229	352	469	538	
	100% (high) Heat	Low	1700	CFM 1699	1707	1690	1659	1621
			Temp. Rise 60	60	60	61	63	
			Watts 325	349	495	628	698	
		Medium Low	1790	CFM 1790	1797	1775	1740	1696
			Temp. Rise 57	57	57	59	60	
			Watts 382	400	551	685	752	
		Medium**	1890	CFM 1892	1896	1870	1830	1781
			Temp. Rise 54	54	54	56	57	
			Watts 453	462	616	750	813	
		High	2000	CFM 2004	2006	1975	1929	1873
			Temp. Rise 51	51	52	53	54	
			Watts 540	538	694	822	880	

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.

TUHMD120 Airflow – Cooling

***UHMD120ACV5VB^** 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
Cooling	3.5	290 CFM/ton	CFM	1000	1024	1028	1022	1011
			Watts	122	168	209	251	300
		310 CFM/ton	CFM	1072	1094	1097	1089	1076
			Watts	140	188	234	281	331
		330 CFM/ton	CFM	1143	1164	1165	1157	1141
			Watts	160	211	261	313	364
		350 CFM/ton	CFM	1214	1233	1234	1224	1207
			Watts	182	236	291	347	400
		370 CFM/ton	CFM	1286	1303	1302	1291	1272
			Watts	207	264	323	384	438
		400 CFM/ton	CFM	1393	1408	1405	1392	1370
			Watts	250	311	377	444	500
		430 CFM/ton	CFM	1500	1513	1508	1492	1468
			Watts	300	365	437	509	565
		450 CFM/ton	CFM	1571	1582	1576	1559	1533
			Watts	337	406	481	555	611
	4	290 CFM/ton	CFM	1148	1169	1170	1161	1146
			Watts	161	213	263	315	367
		310 CFM/ton	CFM	1230	1248	1248	1238	1221
			Watts	187	242	297	355	408
		330 CFM/ton	CFM	1311	1328	1327	1315	1295
			Watts	217	274	335	398	452
		350 CFM/ton	CFM	1393	1408	1405	1392	1370
			Watts	250	311	377	444	500
		370 CFM/ton	CFM	1474	1488	1483	1468	1445
			Watts	287	352	422	493	549
		400 CFM/ton	CFM	1597	1607	1601	1583	1556
			Watts	352	421	497	572	628
		430 CFM/ton	CFM	1719	1727	1718	1699	1668
			Watts	427	503	581	655	711
		450 CFM/ton	CFM	1801	1807	1797	1775	1743
			Watts	483	563	642	712	768
	5	290 CFM/ton	CFM	1444	1458	1454	1440	1417
			Watts	273	336	405	475	530
		310 CFM/ton	CFM	1546	1557	1552	1535	1510
			Watts	324	391	465	538	594
		330 CFM/ton	CFM	1648	1657	1650	1631	1603
			Watts	381	454	531	606	662
		350 CFM/ton	CFM	1750	1757	1748	1727	1696
			Watts	447	525	603	676	732
		370 CFM/ton	CFM	1852	1857	1845	1823	1790
			Watts	522	604	682	749	804
		400 CFM/ton	CFM	2004	2006	1992	1967	1947
			Watts	651	742	811	863	966
		430 CFM/ton	CFM	2157	2156	2140	2050	1947
			Watts	803	902	966	966	966
		450 CFM/ton	CFM	2259	2255	2140	2050	1947
			Watts	966	966	966	966	966

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	TUHMD120ACV5VB ⑥ AUHMD120ACV5VB
TYPE	Upflow/Horizontal Left
RATINGS ②	
45% (low) heat Input BTUH	54,000
45% (low) heat Capacity BTUH (ICS) ③	52,000
100% (high) heat Input BTUH	120,000
100% (high) heat Capacity BTUH (ICS) ③⑥	114,000
Temp. rise (Min.-Max.) °F.	40 - 70
AFUE (Upflow / Horizontal)	97.0 / 96.2
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	1
R.P.M.	Variable
Volts/Ph/Hz	115/1/60
FLA	10.0
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.)	1 - 24x25 - 1 in.
VENT — Size (in.)	3 Round
HEAT EXCHANGER	
Type -Fired	Aluminized Steel - Type I
-Unfired	
Gauge (Fired)	20
ORIFICES — Main	
Nat. Gas. Qty. — Drill Size	6 — 45
L.P. Gas Qty. — Drill Size ⑤	6 — 56
GAS VALVE	Redundant - Three Stage
PILOT SAFETY DEVICE	
Type	Hot Surface Igniter
BURNERS — Type	Multiport Inshot
Number	6
POWER CONN. — V/Ph/Hz ④	115/1/60
Ampacity (In Amps)	13.7
Max. Overcurrent Protection (Amps)	15
PIPE CONN. SIZE (IN.)	1/2
DIMENSIONS	H x W x D
Crated (In.)	41-3/4 x 26-1/2 x 30-1/2
WEIGHT	
Shipping (Lbs.)/Net (Lbs)	206 / 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 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.

TUHMD120-SUB-1H-EN 30 Mar 2020
Supersedes TUHMD120-SUB-1G (November 2016)