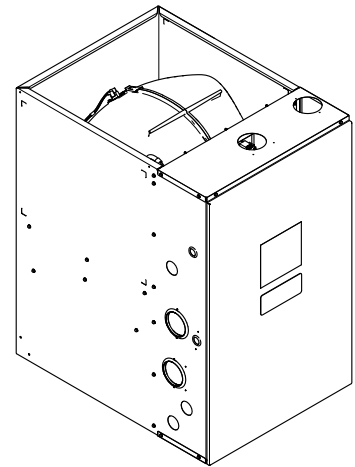


Submittal

Downflow Two Stage Condensing Gas Fired Furnace 100,000 BTUH

Downflow Only
A952V100CD5SAA



TAG: _____

▲ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

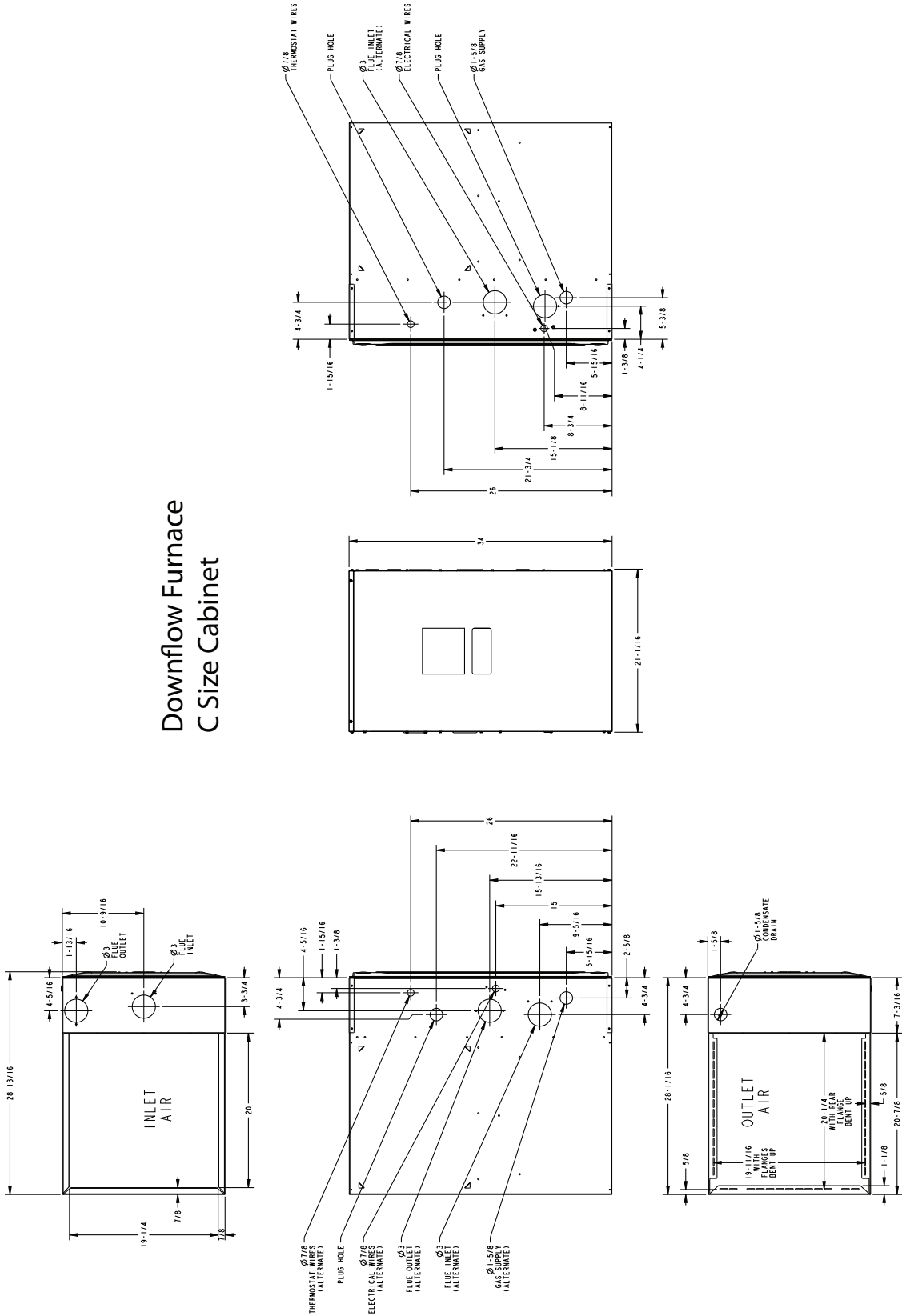
May 2019

A952V100CD5-SUB-1A-EN

IR Ingersoll Rand.

Outline Drawings

Downflow Furnace C Size Cabinet



Product Specification

MODEL	A952V100CD5SAA ^(a)
TYPE	Downflow
RATINGS ^(b)	
1st Stage Input BTUH (ICS)	65,000
1st Stage Capacity BTUH	63,050
2nd Stage Input BTUH	100,000
2nd Stage Capacity BTUH (ICS) ^{(c) (d)}	97,000
1st Stage Temp. Rise (Min.-Max.)	25 - 55
2nd Stage Temp. Rise (Min.-Max.)	30 - 60
AFUE (%)	96.0
BLOWER DRIVE	DIRECT
Diameter — Width (In.)	11 X 10
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	1
RPM	Variable
Volts/Ph/Hz	120 / 1 / 60
FLA	10.5
COMBUSTION FAN — Type	Centrifugal
Drive — No. Speeds	Direct - 2
Motor HP — RPM	3300/2600
Volts/Ph/Hz	120 / 1 / 60
FLA	0.66
FILTER — Furnished?	No
Type recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	2 — 16x20 — 1 in.
VENT PIPE DIAMETER — Min (in.) ^{(e) (f)}	2 Round
HEAT EXCHANGER	
Type — Fired	409 Stainless Steel

MODEL	A952V100CD5SAA ^(a)
— Unfired	29-4C Stainless Steel
Gauge (Fired)	20
ORIFICES — Main	
Nat. Gas Qty. — Drill Size	5 - 45
LP Gas Qty. — Drill Size	5- 56
GAS VALVE	Redundant - Two Stage
PILOT SAFETY DEVICE	
Type	120 V SiNi Igniter
BURNERS — Type	Multiport Inshot
Number	5
POWER CONN. — V/Ph/Hz ^(g)	120 / 1 / 60
Ampacity (In Amps)	13.9
Max. Overcurrent Protection (Amps)	15
PIPE CONN. SIZE (in.)	1/2
DIMENSIONS	H x W x D
Uncrated (In.)	34 x 21 x 28-3/4
Crated (In.)	35-1/2 x 23 x 30-7/8
WEIGHT	
Shipping (Lbs.)/Net (Lbs.)	155/145

- ^(a) Meets Energy Star
- ^(b) 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.
- ^(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.
- ^(d) Based on U.S. government standard tests.
- ^(e) Refer to the Vent Length Table in the Installer's Guide.
- ^(f) All A952V furnace models have a vent outlet diameter that equals 2 in.
- ^(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Heating and Cooling Airflow Tables

Table 1. A952V100CD5SAA Heating Airflow

A952V100CD5SAA Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
				1st Stage Capacity = 63,700				
				2nd Stage Capacity = 98,000				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	1094	CFM	1093	1092	1090	1089	1088
			Temp. Rise	53	53	53	52	52
			Watts	126	183	240	296	353
	Medium Low	1296	CFM	1234	1238	1242	1247	1251
			Temp. Rise	47	47	47	47	47
			Watts	186	243	299	356	413
	Medium	1346	CFM	1279	1268	1256	1245	1234
			Temp. Rise	45	45	46	46	47
			Watts	214	268	321	375	428
	High ^(a)	1512	CFM	1453	1429	1405	1381	1358
			Temp. Rise	40	40	41	41	42
			Watts	277	344	411	478	545
Heating 2nd Stage	Low	1520	CFM	1484	1477	1469	1461	1453
			Temp. Rise	60	60	61	61	61
			Watts	296	370	444	518	592
	Medium Low	1800	CFM	1693	1688	1684	1679	1674
			Temp. Rise	53	53	53	53	53
			Watts	449	533	618	702	786
	Medium	1870	CFM	1768	1772	1775	1778	1781
			Temp. Rise	51	50	50	50	50
			Watts	505	591	678	765	852
	High ^(a)	2100	CFM	1969	1956	1944	1931	1918
			Temp. Rise	45	45	46	46	46
			Watts	723	789	854	920	986

^(a) Factory Setting.

Table 2. A952V100CU5SAA / A952V100CD5SAA Cooling Airflow

A952V100CU5SAA / A952V100CD5SAA Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Cooling	3.5 Ton	Cooling 450 CFM/Ton	CFM	1575	1575	1575	1575	1575
			Watts	263	333	406	481	558
		Cooling 420 CFM/Ton	CFM	1470	1470	1470	1470	1470
			Watts	218	283	352	423	496
		Cooling 400 CFM/Ton	CFM	1400	1400	1400	1400	1400
			Watts	191	254	319	388	458
		Cooling 370 CFM/Ton	CFM	1295	1295	1295	1295	1295
			Watts	155	214	275	340	406
		Cooling 350 CFM/Ton	CFM	1225	1225	1225	1225	1225
			Watts	134	190	249	311	375
		Cooling 330 CFM/Ton	CFM	1155	1155	1155	1155	1155
			Watts	115	168	225	284	346
		Cooling 310 CFM/Ton	CFM	1085	1085	1085	1085	1085
			Watts	98	148	202	259	319
Cooling 290 CFM/Ton	CFM	1015	1015	1015	1015	1015		
	Watts	83	131	182	237	294		
Cooling	4.0 Ton	Cooling 450 CFM/Ton	CFM	1800	1800	1800	1800	1800
			Watts	381	460	542	627	713
		Cooling 420 CFM/Ton	CFM	1680	1680	1680	1680	1680
			Watts	314	388	466	545	627
		Cooling 400 CFM/Ton	CFM	1600	1600	1600	1600	1600
			Watts	275	345	419	496	574
		Cooling 370 CFM/Ton	CFM	1480	1480	1480	1480	1480
			Watts	222	288	357	428	502
		Cooling 350 CFM/Ton	CFM	1400	1400	1400	1400	1400
			Watts	191	254	319	388	458
		Cooling 330 CFM/Ton	CFM	1320	1320	1320	1320	1320
			Watts	163	223	285	351	418
		Cooling 310 CFM/Ton	CFM	1240	1240	1240	1240	1240
			Watts	139	195	254	317	381
Cooling 290 CFM/Ton	CFM	1160	1160	1160	1160	1160		
	Watts	117	170	226	286	348		
Cooling	4.5 Ton	Cooling 450 CFM/Ton	CFM	2025	2025	2025	2025	2025
			Watts	531	620	711	805	901
		Cooling 420 CFM/Ton	CFM	1890	1890	1890	1890	1890
			Watts	437	520	606	694	784
		Cooling 400 CFM/Ton	CFM	1800	1800	1800	1800	1800
			Watts	381	460	542	627	713
		Cooling 370 CFM/Ton	CFM	1665	1665	1665	1665	1665
			Watts	307	380	457	536	616
		Cooling 350 CFM/Ton	CFM	1575	1575	1575	1575	1575
			Watts	263	333	406	481	558
		Cooling 330 CFM/Ton	CFM	1485	1485	1485	1485	1485
			Watts	224	290	359	431	505
		Cooling 310 CFM/Ton	CFM	1395	1395	1395	1395	1395
			Watts	189	252	317	386	456
Cooling 290 CFM/Ton	CFM	1305	1305	1305	1305	1305		
	Watts	158	217	279	344	411		
Cooling	5.0 Ton ^(a)	Cooling 450 CFM/Ton	CFM	2250	2250	2242	2137	2029
			Watts	717	816	909	908	905
		Cooling 420 CFM/Ton	CFM	2100	2100	2100	2100	2029
			Watts	589	681	776	873	905
		Cooling 400 CFM/Ton	CFM	2000	2000	2000	2000	2000
			Watts	512	600	691	784	878
		Cooling 370 CFM/Ton	CFM	1850	1850	1850	1850	1850
			Watts	411	492	577	663	752
		Cooling 350 CFM/Ton	CFM	1750	1750	1750	1750	1750
			Watts	352	429	509	592	676
		Cooling 330 CFM/Ton	CFM	1650	1650	1650	1650	1650
			Watts	299	372	448	526	606
		Cooling 310 CFM/Ton	CFM	1550	1550	1550	1550	1550
			Watts	252	320	392	467	543
Cooling 290 CFM/Ton	CFM	1450	1450	1450	1450	1450		
	Watts	210	275	342	413	485		

^(a) Factory Setting

General Features

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.

SAFE OPERATION

The Integrated System Control is a solid state device which continuously monitors 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 **tubular stainless steel primary 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** with LP conversion kit.

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 dry contacts for EAC and HUM.

ENERGY EFFICIENT OPERATION

Furnace is certified by the manufacturer to leak 1% or less of nominal air conditioning CFM delivered when pressurized to .5" water column with all inlets, outlets, and drains sealed.

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.

SECONDARY HEAT EXCHANGER

The Ameristar 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. Every orientation has at least two venting options. There are no knockouts on cabinet.

FEATURES AND GENERAL OPERATION

The Ameristar furnace utilizes 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 switches.

Features and Benefits

96.0% AFUE ACROSS ALL MODELS

Meets utility rebates

Lowers utility bills

ELECTRICALLY EFFICIENT

Efficient airflow design reduces electrical energy use

34 INCH TALL

Lighter, easier to move and fit into tight spaces like short basements or tight closets

Works great with larger, high-efficiency coils

No knockouts

3-WAY MULTI-POISE / DEDICATED DOWNFLOW

8 SKU's — Upflow / Horizontal Left / Horizontal Right

6 SKU's — Downflow

Added application flexibility and reduction in specification errors

AIRFLOW

At least 400 CFM/ton at 0.5 in. H₂O external static pressure; setup airflow options down to 290 CFM/ton

REGULATORY

All models are air tight; 1.4% or less air leakage as per ASHRAE 193

Open vestibule design provides a full 34" high open vestibule

DIMENSIONS

Widths are industry standard: 17.5", 21", and 24.5"

Depth remains approximately 28"

Cabinet will be compatible with industry standard coils, as well as, other accessories

INTEGRATED FURNACE CONTROL

Setup / Status / Diagnostics / Digital Display

No dip switches

Last six errors stored

Dry contact EAC and HUM connections

All Molex connections; no spade terminals

Low voltage labeled above and below

Rain shield over IFC keeps condensate off the control

TUBULAR STAINLESS STEEL PRIMARY HEAT EXCHANGER

29-4C STAINLESS STEEL SECONDARY HEAT EXCHANGER

Stainless steel is a more durable, corrosive-resistant material than aluminized steel

Integrated rail system for easy access if required

Reduces or eliminates need for baffles

VORTICA II BLOWER, DESIGNED EXCLUSIVELY FOR THE S-SERIES FURNACE

Improved airflow efficiency

Durable, easy to clean, two piece housing

Single piece belly band/ motor arm assembly

Blower deck has full-length rails for easy removal and replacement, regardless of poise

THREE-WAY MULTI-POISE (UPFLOW, HORIZONTAL LEFT AND RIGHT) PLUS DEDICATED DOWNFLOW

Easier to specify

Shipped ready to install (no kits required)

Every model has at least two venting options

When in horizontal, trap extends only about 2"

Barbed fitting on trap at hose connection and on cabinet transition for hose has barbed fitting and clamps at both ends for leak resistance.

Vent table improvements including longer vent lengths; 2" pipe can be used up to 100K



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