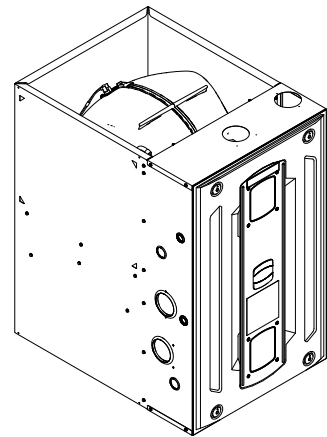


Submittal

Downflow Two Stage Condensing Gas Fired Furnace 60,000 BTUH

Downflow Only
S9V2B060D3PSBA



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

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.

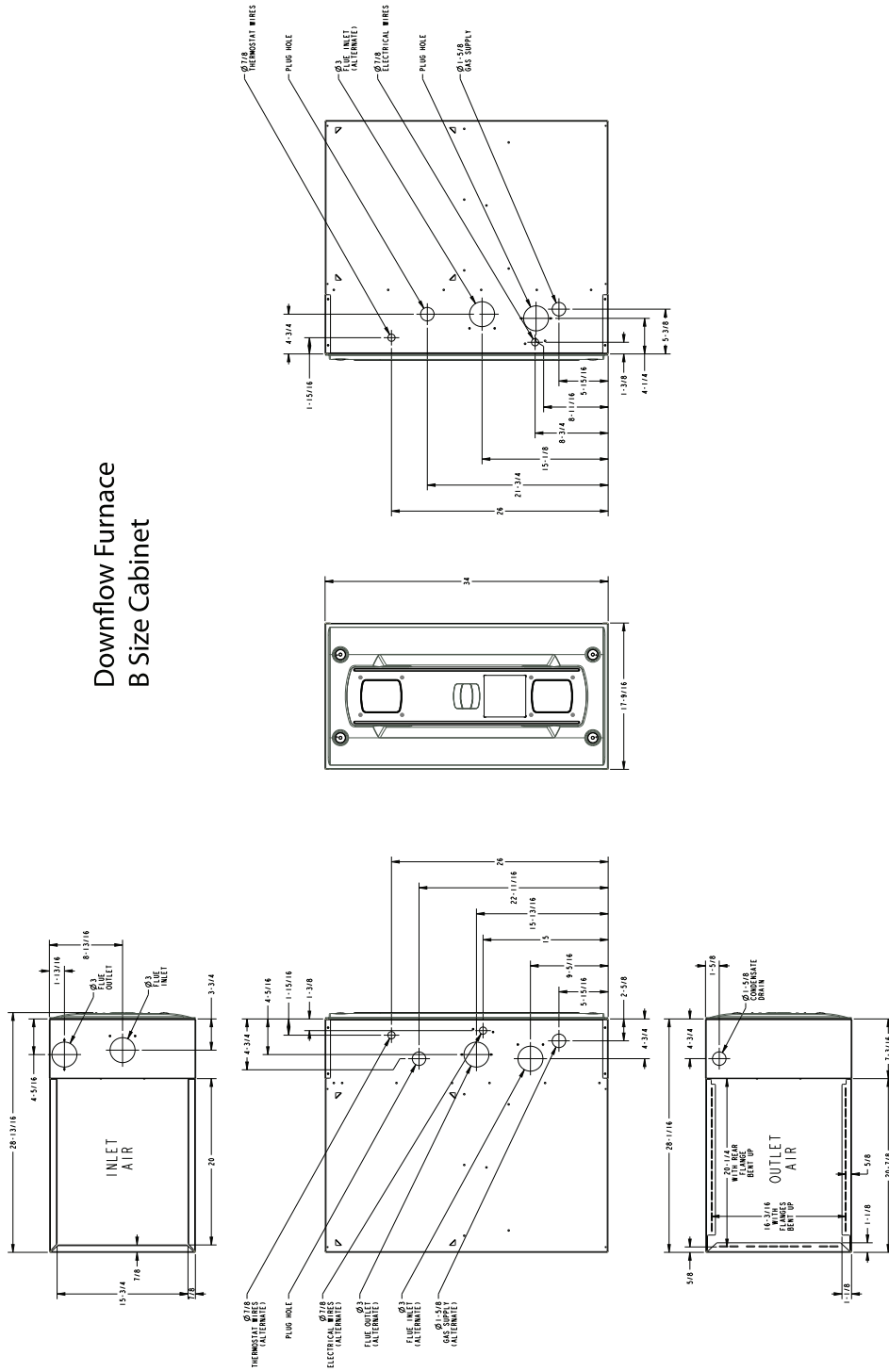
March 2017

S9V2B060D3-SUB-1B-EN

IR Ingersoll Rand.

Outline Drawings

Downflow Furnace B Size Cabinet



Product Specification

| MODEL | S9V2B060D3PSBA |
|--|---------------------------|
| TYPE | Downflow |
| RATINGS (a) | |
| 1st Stage Input BTUH (ICS) | 39,000 |
| 1st Stage Capacity BTUH | 37,830 |
| 2nd Stage Input BTUH | 60,000 |
| 2nd Stage Capacity BTUH (ICS) (b)(c) | 58,200 |
| 1st Stage Temp. Rise (Min.-Max.) | 25 - 55 |
| 2nd Stage Temp. Rise (Min.-Max.) | 35 - 65 |
| AFUE (%) | 96.0 |
| BLOWER DRIVE | DIRECT |
| Diameter — Width (In.) | 11 X 8 |
| No. Used | 1 |
| Speeds (No.) | Variable |
| CFM vs. in. w.g. | See Fan Performance Table |
| Motor HP | 1/2 |
| RPM | Variable |
| Volts/Ph/Hz | 120 / 1 / 60 |
| FLA | 5.7 |
| 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 — 14x20 — 1 in. |
| VENT PIPE DIAMETER — Min (in.) (d) (e) | 2 Round |
| HEAT EXCHANGER | |

| MODEL | S9V2B060D3PSBA |
|------------------------------------|--------------------------|
| Type — Fired | 409 Stainless Steel |
| — Unfired | 29-4C Stainless Steel |
| Gauge (Fired) | 20 |
| ORIFICES — Main | |
| Nat. Gas Qty. — Drill Size | 3 - 45 |
| LP Gas Qty. — Drill Size | 3 - 56 |
| GAS VALVE | Redundant - Two Stage |
| PILOT SAFETY DEVICE | |
| Type | 120 V SiNi Igniter |
| BURNERS — Type | Multiport Inshot |
| Number | 3 |
| POWER CONN. — V/Ph/Hz (f) | 120 / 1 / 60 |
| Ampacity (In Amps) | 7.9 |
| Max. Overcurrent Protection (Amps) | 15 |
| PIPE CONN. SIZE (in.) | 1/2 |
| DIMENSIONS | H x W x D |
| Uncrated (In.) | 34 x 17-1/2 x 28-3/4 |
| Crated (In.) | 35-1/2 x 19-1/2 x 30-7/8 |
| WEIGHT | |
| Shipping (Lbs.)/Net (Lbs.) | 127/119 |

(a) 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.

(b) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

(c) Based on U.S. government standard tests.

(d) Refer to the Vent Length Table in the Installer's Guide.

(e) All S9V2 furnace models have a vent outlet diameter that equals 2 in.

(f) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Heating and Cooling Airflow Tables

S9V2B060D3PSBA

Table 1. S9V2B060D3PSBA Heating Airflow

| S9V2B060D3PSBA Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter | | | | | | | | |
|---|---------------------------|----------------|------------|--|------|------|------|------|
| | | | | 1st Stage Capacity = 37,830 2nd Stage Capacity = 58,200 | | | | |
| Heating | Airflow Setting | Target Airflow | | External Static Pressure | | | | |
| | | | | 0.1 | 0.3 | 0.5 | 0.7 | 0.9 |
| Heating 1st Stage | Low | 632 | CFM | 701 | 683 | 664 | 646 | 627 |
| | | | Temp. Rise | 51 | 52 | 54 | 55 | 57 |
| | | | Watts | 33 | 79 | 125 | 171 | 217 |
| | Medium Low ^(a) | 814 | CFM | 799 | 812 | 825 | 838 | 851 |
| | | | Temp. Rise | 45 | 44 | 43 | 42 | 42 |
| | | | Watts | 56 | 109 | 163 | 217 | 270 |
| | Medium | 893 | CFM | 887 | 895 | 903 | 910 | 918 |
| | | | Temp. Rise | 40 | 40 | 40 | 39 | 39 |
| | | | Watts | 77 | 128 | 180 | 231 | 283 |
| | High | 1153 | CFM | 1075 | 1087 | 1099 | 1111 | 1122 |
| | | | Temp. Rise | 33 | 33 | 33 | 32 | 32 |
| | | | Watts | 163 | 227 | 291 | 355 | 419 |
| Heating 2nd Stage | Low | 800 | CFM | 833 | 825 | 816 | 808 | 800 |
| | | | Temp. Rise | 64 | 65 | 66 | 67 | 67 |
| | | | Watts | 48 | 109 | 170 | 231 | 292 |
| | Medium Low ^(a) | 1030 | CFM | 987 | 991 | 995 | 1000 | 1004 |
| | | | Temp. Rise | 55 | 55 | 55 | 54 | 54 |
| | | | Watts | 117 | 109 | 237 | 298 | 358 |
| | Medium | 1130 | CFM | 1054 | 1071 | 1088 | 1105 | 1122 |
| | | | Temp. Rise | 51 | 50 | 49 | 48 | 48 |
| | | | Watts | 165 | 211 | 256 | 302 | 348 |
| | High | 1460 | CFM | 1336 | 1337 | 1338 | 1339 | 1340 |
| | | | Temp. Rise | 40 | 40 | 40 | 40 | 40 |
| | | | Watts | 375 | 402 | 429 | 456 | 483 |

^(a) Factory Setting.

S9V2B060U3PSBA / S9V2B060D3PSBA

Table 2. S9V2B060U3PSBA / S9V2B060D3PSBA Cooling Airflow

| S9V2B060U3PSBA / S9V2B060D3PSBA 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 | 1.5 Ton | Cooling 450 CFM/Ton | CFM | 675 | 675 | 675 | 675 | 675 | | |
| | | | Watts | 46 | 81 | 121 | 165 | 212 | | |
| | | Cooling 420 CFM/Ton | CFM | 630 | 630 | 630 | 630 | 630 | | |
| | | | Watts | 40 | 72 | 111 | 153 | 200 | | |
| | | Cooling 400 CFM/Ton | CFM | 600 | 600 | 600 | 600 | 600 | | |
| | | | Watts | 36 | 67 | 105 | 146 | 192 | | |
| | | Cooling 370 CFM/Ton | CFM | 555 | 555 | 555 | 555 | 555 | | |
| | | | Watts | 30 | 60 | 96 | 137 | 182 | | |
| | | Cooling 350 CFM/Ton | CFM | 525 | 525 | 525 | 525 | 525 | | |
| | | | Watts | 27 | 56 | 91 | 131 | 175 | | |
| | | Cooling 330 CFM/Ton | CFM | 495 | 495 | 495 | 495 | 495 | | |
| | | | Watts | 24 | 52 | 86 | 126 | 170 | | |
| | | Cooling 310 CFM/Ton | CFM | 465 | 465 | 465 | 465 | 465 | | |
| | | | Watts | 21 | 48 | 82 | 121 | 164 | | |
| | | Cooling 290 CFM/Ton | CFM | 435 | 435 | 435 | 435 | 435 | | |
| | | | Watts | 19 | 45 | 78 | 116 | 160 | | |
| | | Cooling | 2.0 Ton | Cooling 450 CFM/Ton | CFM | 900 | 900 | 900 | 900 | 900 |
| | | | | | Watts | 92 | 135 | 184 | 236 | 291 |
| Cooling 420 CFM/Ton | CFM | | | 840 | 840 | 840 | 840 | 840 | | |
| | Watts | | | 78 | 118 | 164 | 214 | 267 | | |
| Cooling 400 CFM/Ton | CFM | | | 800 | 800 | 800 | 800 | 800 | | |
| | Watts | | | 69 | 108 | 153 | 201 | 253 | | |
| Cooling 370 CFM/Ton | CFM | | | 740 | 740 | 740 | 740 | 740 | | |
| | Watts | | | 57 | 94 | 136 | 183 | 232 | | |
| Cooling 350 CFM/Ton | CFM | | | 700 | 700 | 700 | 700 | 700 | | |
| | Watts | | | 50 | 86 | 126 | 171 | 220 | | |
| Cooling 330 CFM/Ton | CFM | | | 660 | 660 | 660 | 660 | 660 | | |
| | Watts | | | 44 | 78 | 117 | 161 | 208 | | |
| Cooling 310 CFM/Ton | CFM | | | 620 | 620 | 620 | 620 | 620 | | |
| | Watts | | | 38 | 71 | 109 | 151 | 197 | | |
| Cooling 290 CFM/Ton | CFM | | | 580 | 580 | 580 | 580 | 580 | | |
| | Watts | | | 33 | 64 | 101 | 142 | 187 | | |
| Cooling | 2.5 Ton | | | Cooling 450 CFM/Ton | CFM | 1125 | 1125 | 1125 | 1125 | 1125 |
| | | | | | Watts | 164 | 216 | 273 | 334 | 399 |
| | | Cooling 420 CFM/Ton | CFM | 1050 | 1050 | 1050 | 1050 | 1050 | | |

Heating and Cooling Airflow Tables

Table 2. S9V2B060U3PSBA / S9V2B060D3PSBA Cooling Airflow (continued)

| S9V2B060U3PSBA / S9V2B060D3PSBA 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 |
| | | | Watts | 137 | 186 | 240 | 298 | 359 |
| | | Cooling 400 CFM/Ton | CFM | 1000 | 1000 | 1000 | 1000 | 1000 |
| | | | Watts | 121 | 168 | 220 | 276 | 335 |
| | | Cooling 370 CFM/Ton | CFM | 925 | 925 | 925 | 925 | 925 |
| | | | Watts | 99 | 143 | 192 | 245 | 302 |
| | | Cooling 350 CFM/Ton | CFM | 875 | 875 | 875 | 875 | 875 |
| | | | Watts | 86 | 128 | 175 | 227 | 281 |
| | | Cooling 330 CFM/Ton | CFM | 825 | 825 | 825 | 825 | 825 |
| | | | Watts | 74 | 115 | 160 | 209 | 262 |
| | | Cooling 310 CFM/Ton | CFM | 775 | 775 | 775 | 775 | 775 |
| | | | Watts | 64 | 102 | 146 | 193 | 244 |
| | | Cooling 290 CFM/Ton | CFM | 725 | 725 | 725 | 725 | 725 |
| | | | Watts | 54 | 91 | 133 | 178 | 228 |
| | | Cooling | 3.0 Ton ^(a) | Cooling 450 CFM/Ton | CFM | 1350 | 1350 | 1350 |
| Watts | 267 | | | | 329 | 395 | 431 | 452 |
| Cooling 420 CFM/Ton | CFM | | | 1260 | 1260 | 1260 | 1260 | 1218 |
| | Watts | | | 222 | 279 | 342 | 409 | 452 |
| Cooling 400 CFM/Ton | CFM | | | 1200 | 1200 | 1200 | 1200 | 1200 |
| | Watts | | | 195 | 250 | 310 | 374 | 441 |
| Cooling 370 CFM/Ton | CFM | | | 1110 | 1110 | 1110 | 1110 | 1110 |
| | Watts | | | 158 | 210 | 266 | 327 | 390 |
| Cooling 350 CFM/Ton ^(a) | CFM | | | 1050 | 1050 | 1050 | 1050 | 1050 |
| | Watts | | | 137 | 186 | 240 | 298 | 359 |
| Cooling 330 CFM/Ton | CFM | | | 990 | 990 | 990 | 990 | 990 |
| | Watts | | | 118 | 164 | 216 | 272 | 330 |
| Cooling 310 CFM/Ton | CFM | | | 930 | 930 | 930 | 930 | 930 |
| | Watts | | | 100 | 145 | 194 | 247 | 304 |
| Cooling 290 CFM/Ton | CFM | 870 | 870 | 870 | 870 | 870 | | |
| | Watts | 85 | 127 | 174 | 225 | 279 | | |

^(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 S-Series 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 S-Series 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

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

7 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% 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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