



BOSCH

Invented for life

Bosch Heat Pump

SV Model: i Series

The i Series SV Model is a cost-effective single stage water source heat pump that is designed for residential and commercial retrofits as well as new construction applications.





Quality & Innovative Home Comfort

Meet the Bosch SV Model

The i Series Greensource water source heat pump comes equipped with the quality and innovative technology that only Bosch can provide.

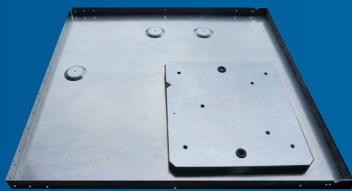
Features

- ▶ Low installation costs – Saving you money
- ▶ Easy to service – Saving you time
- ▶ Energy efficient – Meets ASHRAE 90.1 compliance
- ▶ Space saving technology – Small footprint cabinet
- ▶ Specifically designed for replacement applications
- ▶ Available in Vertical and Horizontal
- ▶ Standard copper or cupro-nickel evaporator coil
- ▶ 1/2", 1 1/2 lb. Dual density fiberglass insulation
- ▶ High and low pressure switches
- ▶ Electronic circuit board with alert display which can also be displayed via a thermostat
- ▶ Tin-plated evaporator with coated fin coil – Providing environmental corrosion protection (DuoGuard)
- ▶ Quiet operation
- ▶ Standard PSC motor
- ▶ 75 VA transformer
- ▶ Galvanized steel cabinet
- ▶ Condensate overflow switch
- ▶ Water coil freeze protection
- ▶ Evaporator coil freeze protection
- ▶ Brownout low voltage protection
- ▶ Standard 1" glass fiber filter and 1" filter rack

Warranty⁽²⁾

- ▶ 1 year parts limited warranty
- ▶ 5 year compressor limited warranty





Standard Basepan



Water Connectors



Hanging Brackets
(Standard for Horizontal units)



ECM Constant Torque
Motor Option

Bosch SV Model Features

Cabinet

The SV unit cabinetry is constructed using galvanized steel. This steel provides superior corrosion protection for units located indoors. All interior surfaces are lined with 1/2" thick, 1.5 lb./cu.ft. density, Micromat insulation for thermal insulation and acoustical attenuation. This insulation is non-combustible, non-hygroscopic and does not support fungal growth. Insulation meets NFPA 90A and 90B for fire protection and is certified to meet the GREENGUARD Indoor Air Quality Standard for Low Emitting Products.

Quiet Operation

Noise reduction is a critical consideration of the unit design. All SV units have a unique floating base compressor that is mounted on a heavy steel plate which rests on a high density rubber pad on the base of the unit. In addition, compressors are mounted on rubber grommets. This double isolation, which is unique to Bosch, is standard in all SV units and helps prevent vibration and noise transmission from the compressor to the unit structure resulting in exceptionally quiet operation.

Serviceability

All units are designed to be serviced from the front of the unit. Schrader valves for high and low pressure gauges and the electrical box components are easily accessible for diagnosing and servicing the unit.

Hanging Brackets

For some applications, hanging brackets may be needed. All horizontal units come standard with hanging bracket kits for suspending the unit from field supplied hanger rods. These kits include heavy duty steel brackets and rubber grommets for sound and vibration isolation from the building structure.

Unit Configurations

All units are available in vertical and horizontal configurations. Additionally, several options of return air and supply air are offered as standard, providing configuration flexibility.

Permanent Split Capacitor Motors (PSC)

The standard motor for all SV model heat pumps is a PSC. This motor utilizes the latest stator technology at low cost. This motor is not available on 041, 060, and 070 models.

ECM Constant Torque Motor⁽³⁾

The SV's ECM constant torque blower motor offers improved efficiency (up to 33%) over the PSC motor. The ECM constant-torque motors are similar in function to a PSC, but can handle up to 1 in.w.g. external static pressure making it a wise choice for high filtration applications. These motors come standard with the 041, 060 and 070 models.

Filter Racks and Unit Options

Units come standard with a 1" filter rack and 1" construction filter. A 1" return duct collar is integral to the filter rack eliminating the need for field mounted duct collars.

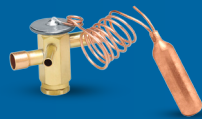
Water Connections

All water connections are heavy duty bronze 3/4" or 1" FPT fittings securely fastened to the unit corner post. This allows connecting to a Bosch Flexible Hose Kit Accessory without the use of a backup wrench making for easier, faster installation.

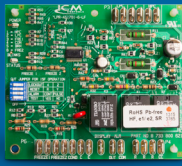
(3) On a Constant Torque ECM it is not necessary to supply a neutral wire on 460 volt units. ECM motor comes standard with the 041, 060, and 070.



Coax Coil



TXV Valve



UPM Control Board



DuoGuard
Evaporator Coil



Blower Housing
(with Removable Inlet Ring)



Compressors

Refrigerant Circuit

SV Model units are designed using the optimum combination of compressor, water and air coils to provide peak performance.

Available heavy duty compressors:

- ▶ Rotary (sizes 007-018)
- ▶ Scroll (sizes 024-070)

Refrigerant to water heat exchangers are coaxial tube-in-tube copper/steel type providing a robust construction, ensuring years of trouble free operation. Optional Cupro-Nickel coils are available for applications where the water is of lower quality.

In geothermal applications where fluid temperatures can drop below the dew point of the surrounding air, optional insulation is available to prevent water coils and refrigerant piping from sweating.

Evaporator coils are state of the art, employing lanced fin and rifled tubing for maximum heat transfer. Large face areas result in lower face velocity, reducing sound while ensuring high latent heat removal for maximum dehumidification in the cooling mode.

Evaporator Coil

Corrosion Protection that comes standard is the tin-plated coil protection (DuoGuard™). Tin Electro-Plated Copper Tubing hair pins with High-Tech Polymer Coated Aluminum Fins will protect the evaporator coil from all forms of corrosive elements in the air stream.

Blower Housing

A removable inlet ring is a standard feature of the blower housing on all unit sizes. In the unlikely event that the motor requires removal, the inlet ring helps facilitate easy removal and installation without having to remove the fan housing from the cabinet.

Unit Protection Module

Each SV unit is factory provided with a Unit Protection Module (UPM) that controls the unit operation and monitors the safety controls that protect the unit. The UPM interfaces with the thermostat. The main purpose of the UPM is to protect the compressor by monitoring the different states of switches and sensors.

This module provides time delays and protects the unit against freezing of the water coil and evaporator coil.

UPM Control Board Features

- ▶ Anti-Short Cycle Timer — 5 minute delay
- ▶ High and low pressure protection
- ▶ Water and evaporator freeze protection
- ▶ Condensate overflow protection
- ▶ Brownout/Surge/Power Interruption Protection
- ▶ The controller has a set of contacts for fault indication
- ▶ With a Bosch Communicating Thermostat alerts can be conveniently displayed without having to go to the unit.

Safety Controls include the following:

- ▶ High pressure switch in the refrigerant discharge line
- ▶ Low pressure switch in the refrigerant suction line
- ▶ Standard low fluid temperature (freeze) protection sensor. The freeze protection sensor is designed to disable compressor operation when the unit is in the heating mode, should the refrigerant temperature fall below either 26°F (-3.3°C) or 15°F (-9.4°C)
- ▶ Condensate overflow protection sensor is standard and factory mounted in the drain pan of the unit
- ▶ Low air coil temperature (freeze) protection sensor disables the compressor when the refrigerant entering the air coil drops below 26°F (-3.3°C)

LED Fault Indication

Two LED indicators are provided on the circuit board:

- ▶ Green: Power
- ▶ Red: Fault indicator with blink codes: High pressure, Low pressure, Freeze protection, Condensate overflow, Brownout condition

SV Models

Size	Cabinet Configuration	Coax Coil	Return Air	Part Number	Size	Cabinet Configuration	Coax Coil	Return Air	Part Number
007	HZ	C	L	7-735-069-385	036	VT	C	L	7-735-069-438
007			R	7-735-069-386	036			R	7-735-069-439
007		N	L	7-735-069-631	036		L	7-735-069-440	
007			R	7-735-069-632	036		R	7-735-069-441	
007	VT	C	L	7-735-069-388	041	VT	C	L	7-735-069-442
007			R	7-735-069-389	041			R	7-735-069-443
007		N	L	7-735-069-390	041		L	7-735-069-444	
007			R	7-735-069-391	041		R	7-735-069-445	
009	HZ	C	L	7-735-069-392	042	HZ	C	L	7-735-069-446
009			R	7-735-069-393	042			R	7-735-069-447
009		N	L	7-735-069-394	042		L	7-735-069-448	
009			R	7-735-069-395	042		R	7-735-069-449	
009	VT	C	L	7-735-069-396	042	VT	C	L	7-735-069-450
009			R	7-735-069-397	042			R	7-735-069-451
009		N	L	7-735-069-633	042		L	7-735-069-452	
009			R	7-735-069-634	042		R	7-735-069-453	
012	HZ	C	L	7-735-069-398	048	HZ	C	L	7-735-069-454
012			R	7-735-069-399	048			R	7-735-069-455
012		N	L	7-735-069-400	048		L	7-735-069-456	
012			R	7-735-069-401	048		R	7-735-069-457	
012	VT	C	L	7-735-069-402	048	VT	C	L	7-735-069-458
012			R	7-735-069-403	048			R	7-735-069-459
012		N	L	7-735-069-635	048		L	7-735-069-460	
012			R	7-735-069-636	048		R	7-735-069-461	
015	HZ	C	L	7-735-069-404	060	HZ	C	L	7-735-069-462
015			R	7-735-069-405	060			R	7-735-069-463
015		N	L	7-735-069-406	060		L	7-735-069-464	
015			R	7-735-069-407	060		R	7-735-069-465	
015	VT	C	L	7-735-069-408	060	VT	C	L	7-735-069-466
015			R	7-735-069-409	060			R	7-735-069-467
015		N	L	7-735-069-410	060		L	7-735-069-468	
015			R	7-735-069-411	060		R	7-735-069-469	
018	HZ	C	L	7-735-069-412	070	HZ	C	L	7-735-069-470
018			R	7-735-069-413	070			R	7-735-069-471
018		N	L	7-735-069-414	070		L	7-735-069-472	
018			R	7-735-069-415	070		R	7-735-069-473	
018	VT	C	L	7-735-069-416	070	VT	C	L	7-735-069-474
018			R	7-735-069-417	070			R	7-735-069-475
018		N	L	7-735-069-418	070		L	7-735-069-476	
018			R	7-735-069-419	070		R	7-735-069-477	
024	HZ	C	L	7-735-069-420	070	VT	N	L	7-735-069-477
024			R	7-735-069-421	070			R	7-735-069-477
024		N	L	7-735-069-422	070		L	7-735-069-477	
024			R	7-735-069-423	070		R	7-735-069-477	
024	VT	C	L	7-735-069-424	070	VT	C	L	7-735-069-477
024			R	7-735-069-425	070			R	7-735-069-477
024		N	L	7-735-069-426	070		L	7-735-069-477	
024			R	7-735-069-427	070		R	7-735-069-477	
030	HZ	C	L	7-735-069-428	030	VT	C	L	7-735-069-428
030			R	7-735-069-429	030			R	7-735-069-429
030		N	L	7-735-069-430	030		L	7-735-069-430	
030			R	7-735-069-431	030		R	7-735-069-431	
030	VT	C	L	7-735-069-432	030	VT	C	L	7-735-069-432
030			R	7-735-069-433	030			R	7-735-069-433
030		N	L	N/A	030		L	N/A	
030			R	N/A	030		R	N/A	
036	HZ	C	L	7-735-069-434	036	VT	C	L	7-735-069-434
036			R	7-735-069-648	036			R	7-735-069-648
036		N	L	7-735-069-436	036		L	7-735-069-436	
036			R	7-735-069-437	036		R	7-735-069-437	

To Be Released

The following products are currently not available for purchase. These will be available upon the anticipated release date.

Size	Cabinet Configuration	Coax Coil	Return Air	Part Number	Release Date
007	HZ	N	L	7-735-069-631	Coming Soon
			R	7-735-069-632	
009	VT	N	L	7-735-069-633	
			R	7-735-069-634	
012	VT	N	L	7-735-069-635	
			R	7-735-069-636	
012	HZ	N	L	7-735-069-400	
			R	7-735-069-401	

System & Technical Information

VERTICAL TOP DISCHARGE WATER SOURCE HEAT PUMP DIMENSIONS									
Model	Unit Overall Dimensions			Supply Air Duct Connection		Return Air Duct Connection		Condenser Water Connections	Recommended Replacement Nominal Filter Size
	Height	Width	Depth	Discharge Width	Discharge Height	R/A Duct Flange Height	R/A Duct Width		
SV007	24.25	19.0	19.0	8.0	10.0	8.0	16.0	3/4" FPT	10 × 16 × 1
SV009	24.25	19.0	19.0	8.0	10.0	8.0	16.0	3/4" FPT	10 × 16 × 1
SV012	24.25	19.0	19.0	8.0	10.0	8.0	16.0	3/4" FPT	10 × 16 × 1
SV015	32.25	21.5	21.5	14.0	14.0	14.0	20.0	3/4" FPT	16 × 20 × 1
SV018	32.25	21.5	21.5	14.0	14.0	14.0	20.0	3/4" FPT	16 × 20 × 1
SV024	39.25	21.5	21.5	14.0	14.0	18.0	20.0	3/4" FPT	20 × 20 × 1
SV030	39.25	21.5	21.5	14.0	14.0	18.0	20.0	3/4" FPT	20 × 20 × 1
SV036	44.25	21.5	26.0	14.0	16.0	22.0	24.0	3/4" FPT	24 × 24 × 1
SV041	39.25	21.5	21.5	14.0	16.0	18.0	20.0	3/4" FPT	20 × 20 × 1
SV042	44.25	21.5	26.0	14.0	16.0	22.0	24.0	3/4" FPT	24 × 24 × 1
SV048	45.25	24.0	32.5	14.0	18.0	22.0	30.0	1" FPT	24 × 30 × 1
SV060	45.25	24.0	32.5	14.0	18.0	22.0	30.0	1" FPT	24 × 30 × 1
SV070	58.25	26.0	33.25	16	18.0	30.0	30.0	1" FPT	16 × 30 × 1 (2)

HORIZONTAL WATER SOURCE HEAT PUMP DIMENSIONS									
Model	Unit Overall Dimensions			Supply Air Duct Connection		Return Air Duct Connection		Condenser Water Connections	Recommended Replacement Nominal Filter Size
	Height	Width	Depth	Discharge Width	Discharge Height	R/A Duct Flange Width	R/A Duct Height		
SV007	11.5	19.0	33.0	6.3	4.1	16.2	8.6	3/4" FPT	10 × 16 × 1
SV009	11.5	19.0	33.0	6.3	4.1	16.2	8.6	3/4" FPT	10 × 16 × 1
SV012	11.5	19.0	33.0	6.4	4.1	16.2	8.6	3/4" FPT	10 × 16 × 1
SV015	17.0	22.0	43.0	9.1	9.7	20.2	15.0	3/4" FPT	16 × 20 × 1
SV018	17.0	22.0	43.0	9.1	9.7	20.2	15.0	3/4" FPT	16 × 20 × 1
SV024	17.0	22.0	43.0	9.1	9.7	25.0	15.0	3/4" FPT	16 × 25 × 1
SV030	17.0	22.0	43.0	9.1	9.7	25.0	15.0	3/4" FPT	16 × 25 × 1
SV036	19.0	22.0	54.5	9.1	10.3	30.2	17.0	3/4" FPT	18 × 30 × 1
SV042	19.0	22.0	54.5	10.5	11.3	30.2	17.0	3/4" FPT	18 × 30 × 1
SV048	21.0	25.0	54.5	10.5	11.4	34.6	19.0	1" FPT	20 × 34.5 × 5 × 1
SV060	21.0	25.0	54.5	11.8	12.5	34.6	19.0	1" FPT	20 × 34.5 × 5 × 1
SV070	21.0	25.0	65.0	11.8	12.5	48.1	19.0	1" FPT	20 × 24 × 1 (2)

Notes: All dimensions within ± 0.125". All condensate drain connections are 3/4" FPT. Horizontal models can be field converted between end blow and straight through supply air configurations. Specifications subject to change without notice. 1" filter rack extends 1.23" beyond the side of the unit.

Performance Data

AHRI/ANSI 13256-1 CAPACITY AND EFFICIENCY DATA – PSC MOTOR										
Models	Water Loop Heat Pump				Ground Loop Heat Pump				CFM	GPM
	Cooling 86 °F		Heating 68 °F		Cooling 77 °F		Heating 32 °F			
	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP		
SV007	6,100	13.20	7,800	5.10	6,800	15.10	4,900	3.40	300	2
SV009	8,200	12.40	9,900	4.70	N/A				330	2.5
SV012	10,900	12.20	13,000	4.30	11,800	14.10	8,700	3.20	375	3
SV015	14,200	12.80	16,100	4.40	14,200	14.60	11,300	3.30	500	4
SV018	18,200	14.10	20,200	4.60	19,200	16.15	14,300	3.50	600	5
SV024	24,300	14.20	27,400	5.00	25,400	16.90	18,100	3.55	800	6
SV030	28,200	13.40	32,600	4.70	29,500	15.60	21,500	3.40	950	7
SV036	36,900	14.30	38,800	4.65	38,500	16.65	27,100	3.55	1200	9
SV042	49,600	13.65	42,800	4.45	41,200	15.90	30,000	3.25	1380	10
SV048	46,200	13.95	58,600	4.65	48,400	16.35	39,300	3.40	1640	12

AHRI/ANSI 13256-1 CAPACITY AND EFFICIENCY DATA – CONSTANT TORQUE										
Models	Water Loop Heat Pump				Ground Loop Heat Pump				CFM	GPM
	Cooling 86 °F		Heating 68 °F		Cooling 77 °F		Heating 32 °F			
	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP		
SV041	40,500	14.35	38,200	4.70	38,400	16.45	26,500	3.45	1240	9
SV060	59,000	14.30	77,000	4.95	62,200	16.55	52,400	3.90	2000	15
SV070	65,200	14.60	71,800	4.60	67,600	16.60	50,000	3.50	2100	16

GLHP ratings require an extended range option.
 Ratings based upon A HRI/ANSI 13256-1 with 1" disposable filter.

About **Bosch**

Bosch Group

The Bosch Group is a leading global supplier of technology and services in the areas of Automotive, Industrial Technology, Consumer Goods and Building Technology. The company was founded in Stuttgart, Germany, in 1886 and presently has more than 440 subsidiaries and is represented in over 150 countries.

In the U.S., Canada and Mexico, the Bosch Group manufactures and markets automotive original equipment and aftermarket solutions, industrial drives and control technology, power tools, security and communication systems, packaging technology, thermotechnology, household appliances and software solutions. The Bosch Group's products and services are designed to improving quality of life by providing innovative and beneficial solutions. In this way, the company offers technology worldwide that is "Invented for life." Additional information is available online at boschheatingandcooling.com and bosch.ca.

Bosch Thermotechnology in North America

Bosch Thermotechnology is a leading source of high quality water heating and comfort systems. The company offers gas tankless, electric whole house and point-of-use water heaters, Bosch and Buderus floor-standing and wall mounted boilers, Bosch and FHP geothermal, water-source and air-source systems as well as controls and accessories for all product lines. Bosch Thermotechnology is committed to being Simply Smart by offering products that work together as integrated systems that enhance quality of life in an ultra-efficient and environmentally friendly manner. For more information, visit boschheatingandcooling.com.

Bosch Water-Source Heat Pumps: Made in the U.S.A.

Bosch and FHP water-source and geothermal heat pumps are made by highly trained and skilled workers in our factory based in Fort Lauderdale, Florida. They are manufactured with rigorous standards and factory testing ensuring high efficient operation over the life of the unit. Bosch's ISO 9001 and ISO 14001 certified facilities provide consistent quality in every unit built.



Heating



Cooling



Hot Water



Controls

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