

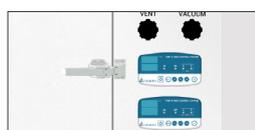
450°C Vacuum Drying Oven -Feature

High temperature Vacuum Drying Oven is effective in drying samples without causing any residue, peeling or oxidation of samples under vacuum condition at high temperature 400°C.

Feature



Each shelves heating control function



Digital PID controller



Stainless steel



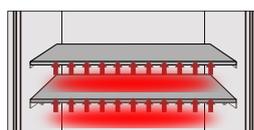
Door sealing gasket



Steel plate with powder heating coated



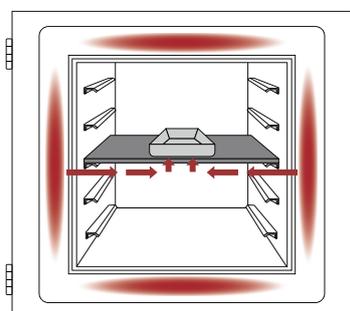
Leveling caster



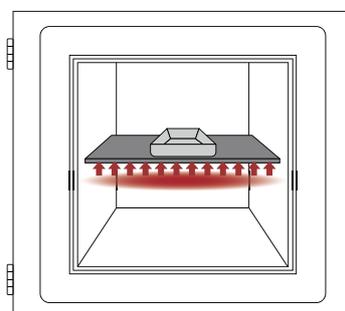
Individual shelf direct heating



Stainless steel Pipe & Connector & Valve

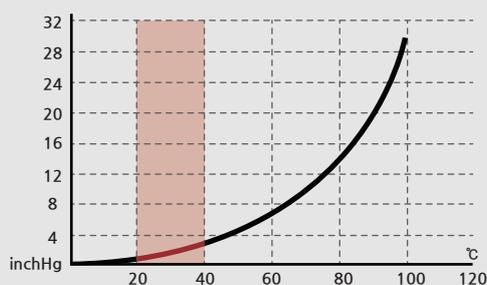


<General Type - Hot air jacketed heating>
NG Series



<New Technology Type - Individual shelf direct heating>
NS Series

Water vapor pressure



450°C Vacuum Drying Oven



Equipped Bullseye(Optional)



Model	SH-VDO-30NS	SH-VDO-70NS	SH-VDO-125NS
Temp Range	Ambient +5°C to 450°C (Ambient + 9°F to 842°F)		
Time Range	00.00 to 99HR 59MIN (MIN SEC) Selectable Digital Counter Timer		
Heating Type	Shelf Individual Direct Heating		
Vacuum Resistance	0 to 76 cmHg (0 to 0.1MPa)		
Temp & Time controller	Microprocess PID Membrane Touch Digital controller		
Controller	2 EA	3 EA	4 EA
Heater Capa	1.6 KW	3.0 KW	5.0 KW
Dimension Internal (W×D×H)	300×300×300mm	400×400×400 mm	500×500×500mm
	11.81×11.81×11.81"	15.75×15.75×15.75"	19.68×19.68×19.68"
Dimension External (W×D×H)	800×580×565mm	900×680×665mm	1000×790×805mm
	31.49×22.83×22.24"	35.43×26.77×26.18"	39.37×31.10×31.69"
Weight	87 Kg	105 Kg	230 Kg
Material Internal	Stainless Steel		
Material External	Steel Plate With Powder Heating Coated		
Material Packing	Silicon Rubber Packing		
View Window	None		
Heating Shelves	2 Supplied	3 Supplied	4 Supplied
Electrical Requirements 120V, 50/60Hz, 1Φ	13.3 A	25.0 A	N/A
Cat. No.	VDO30NS120	VDO70NS120	N/A
Electrical Requirements 230V, 50/60Hz, 1Φ	7.0 A	13.0 A	21.7 A
Cat. No.	VDO30NS230	VDO70NS230	VDO125NS230

• Standard Accessory



KF(NW)25 Hose barb



KF(NW)25 Clamp & O-ring

• Option

- One to multi programmable controller
- Digital Vacuum Meter(Bullseye)



Bullseye(Refer to page 16)

• Safety Device

- Over temperature alarm
- Automatic reset function incoming power cut
- Buzzer on when set Time arrived
- Electric leakage circuit breaker

Digital Vacuum Meter(Bullseye)

- Solid state electronics built into a handheld gauge that operates using AA batteries(4EA) that lasts up to 70 hours
- Keep charged with the integrated Micro USB port for power when operating on a vacuum system
- Rugged design that offers a super-strong magnet for hands-free vacuum measurement
- Delivered pre-calibrated with Agilent 536 KF25 sensor and actual vacuum reading against NIST standard
- See vacuum readings in either numbers or easy-to-read graphs (0.001~800Torr)
- Has 12 measurement units for implementation in almost any vacuum application(Torr, mbar, bar, kPa, inches of Hg, mm Hg, millitorr, microns, inches of water, PSI, Pa)



• Standard Accessory

- Bullseye Gauge & Agilent536 Vacuum Sensor 1SET
- KF(NW)25 Clamp 1EA
- KF(NW)25 Centr Ring & Viton Ring 1EA
- USB C type Charger 1EA

• Option

- KF(NW)25 Hose Barb 10mm
- KF(NW)16, 25, 40 Clamp
- KF(NW)16, 25, 40 Centr Ring & Viton Ring
- KF(NW)25 T Connector
- KF(NW)25 L Connector
- KF(NW)25 Ball Valve
- KF(NW)25 Blank
- KF(NW)40*25 Reducer
- KF(NW)25*16 Reducer
- KF(NW)25&1/4"PT Needle Valve
- KF(NW)16&1/4"PT 3-Way Valve
- Silicon Vacuum Hose 8-15mm(L)5m
- SUS Bellows Hose 1m

Model	Bullseye	
Range	0.001 Torr - 800 Torr	
Power	AA x 4 Batteries	
Sensor	Agilent 536 Sensor	
Accuracy	0.001~0.99 Torr	± 0.002 Torr or 20%
	0.1~2 Torr	± 10%
	2~6 Torr	± 25%
Units	Torr, millitorr, microns, mbar, bar, kPa, Pa, mm, mm of Hg, inches of Hg, inches of water, PSIA	
Mount	Portable Handheld	
Display	LCD	
Certifications	CE, RoHS2	

Vacuum Accessories



Item	Standard	Material
Hose Barb 11mm	KF(NW)25	Aluminum



Item	Standard	Material
Clamp	KF(NW)16	Aluminum
	KF(NW)25	
	KF(NW)40	



Item	Standard	Model
Reducer	KF(NW)40x25	SUS 304
	KF(NW)25x16	



Item	Standard	Material
Ceter Ring&Viton Ring	KF(NW)16	SUS 304 Ceter Ring & Viton Ring
	KF(NW)25	
	KF(NW)40	



Item	Standard	Material
L Connector	KF(NW)25	SUS 304



Item	Standard	Material
Bellows Hose 1M	KF(NW)25	SUS 304



Item	Standard	Material
T Connector	KF(NW)25	SUS 304



Item	Standard	Material
Blank	KF(NW)25	SUS 304



Item	Standard	Material
Ball Valve 20A	KF(NW)16	SUS 304
Ball Valve 25A	KF(NW)25	



Item	Standard	Material
Vacuum Hose 8x15mm (IDxOD)	Length 5M	SUS 316



Item	Standard	Material
1/4"PT 3-Way Valve	KF(NW)16	SUS 316

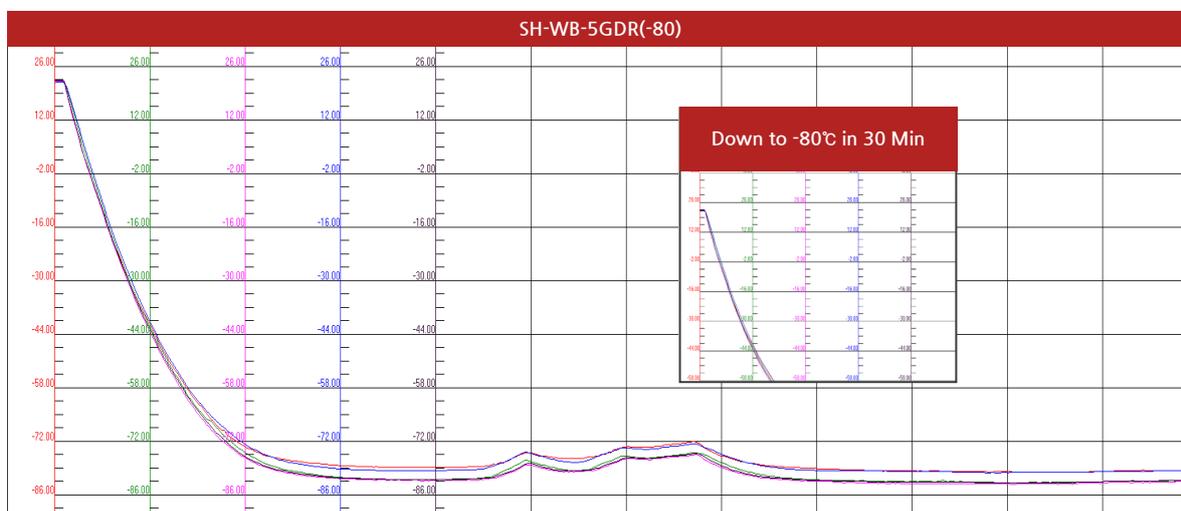
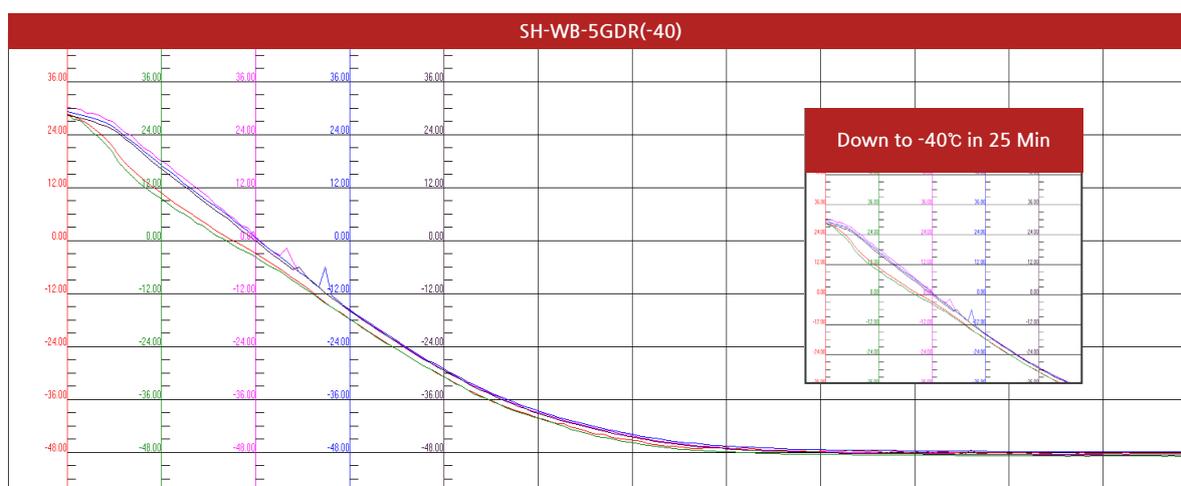


Item	Standard	Material
Connector & Tube Lock	KF(NW)25 1/4"Tube	SUS 316
	KF(NW)25 1/8"Tube	

Cold Trap Bath -Feature

In vacuum applications, a cold trap is a device that condenses all vapors(except the permanent gases) into a liquid or solid. The main purpose is to prevent vapors being produced by an experiment from entering the vacuum pump where they would condense and contaminate it. Cold traps can also cool surfaces or baffles to prevent oil vapors flowing from a pump into a chamber. SH Scientific's Cold Trap Bath is applied with patented technology and protected by Patent no. 10-1928961.

Uniformity sheet



Feature



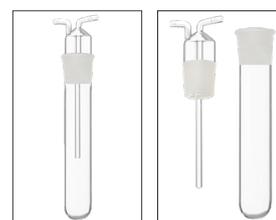
- Digital controller



- Openable 3 glass trap



- Rust-free stainless coil



- Openable glass trap

Cold Trap Bath



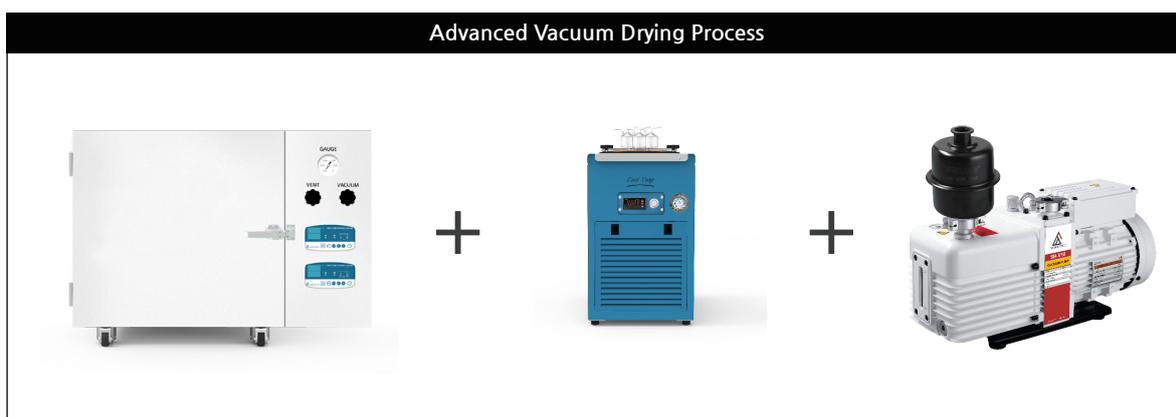
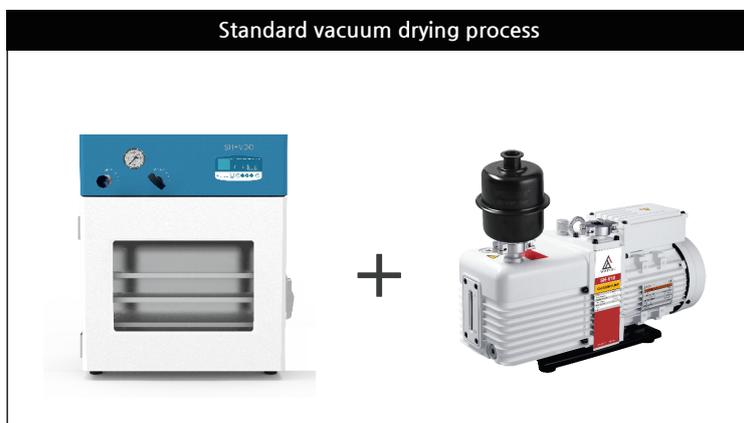
Model	SH-WB-5GDR	
Order Number	SH-WB-5GDR(-40)	SH-WB-5GDR(-80)
Temp Controller	Microprocessor digital controller	
Temp Control Range	Ambient -60°C ~ -20°C (-108°F ~ -40°F) (Low limit -40°C)	Ambient -100°C ~ -60°C (-180°F ~ -76°F) (Low limit -80°C)
Dimension Internal (Φ×H)	180Φ×210Hmm	180Φ×210Hmm
	7.09Φ×8.27H"	7.09Φ×8.27H"
Dimension External (W×D×H)	465×560×710mm	505×620×750mm
	18.18×22.04×27.95"	19.88×24.41×29.52"
Weight	48 Kg	75 Kg
Material Internal	Stainless Steel	
Material External	Steel Plate With Powder Heating Coated	
Trap	Openable glass trap×3EA	
Power	120V, 60Hz, 1Φ	120V, 60Hz, 1Φ
Cat. No.	WB5GDN-40120-60	WB5GDN-80120-60
Power	230V, 60Hz, 1Φ	230V, 60Hz, 1Φ
Cat. No.	WB5GDN-40230-60	WB5GDN-80230-60

• Safety Device

- Automatic reset function incoming power cut
- Electric leakage circuit breaker

• Option

- Stainless steel trap



-40°C
For
Water

-80°C
For
Solvent

Model	Pump Speed
SH-V10	78 L/min
SH-V20	156 L/min
SH-V40	312 L/min
SH-V60	474 L/min

Model	Temp Range
SH-WB-5GDR(-40)	-40°C(-40°F) ~ -20°C(-4°F)
SH-WB-5GDR(-80)	-80°C(-112°F) ~ -60°C (-76°F)

Vacuum Pump

SH-V Series

Perfect design and performance

It is a high-performance SH-V Series V.

It provides stable and strong durability with a cylinder structure and an innovative oil circulation system.

The automatic anti-sucking back valve and 2-shift gas ballast valve function ensure the highest reliability.



- 2-shift gas ballast valve allows condensable vapors to be evacuated out of the pump.
- With oil anti-sucking back prevention function, it provides the vacuum system from being contaminated with oil, it is easy to restart the pump after stopping running.
- Forced oil circulation and supply system ensures stable running of the pump.

Model	SH-V10	SH-V20	SH-V40	SH-V60
Pumping Speed(50/60Hz)	78L/min	156L/min	312L/min	474L/min
Ultimate total pressure gas ballast close	5×10^{-2} Pa (3.7×10^{-4} torr)	5×10^{-2} Pa (3.7×10^{-4} torr)	8×10^{-1} Pa (6×10^{-3} torr)	8×10^{-1} Pa (6×10^{-3} torr)
Ultimate total pressure gas ballast open	3 Pa (2.2×10^{-2} torr)	3 Pa (2.2×10^{-2} torr)	4×10^{-2} Pa (3.0×10^{-2} torr)	4×10^{-2} Pa (3.0×10^{-2} torr)
Power supply	220V,50/60Hz or 110V,50/60Hz			
Power rating(kw)	0.4(1 Phase)	0.4(1 Phase)	0.75(1 Phase)	1.1(1 Phase)
Inlet/Exhaust Flange	KF 16/25	KF 16/25	KF 25	KF 25/40
Oil capacity(L)	0.6~1.0	0.6~1.0	0.9~1.5	1.3~2.0
Ambient temperature(°C)	5~40			
Noise level(dB)	≤56	≤56	≤58	≤58
Weight(kg)	19	21	30	43
Recommended for	Vacuum Drying Ovens (SH-VDO-08NG, SH-VDO-30NG, SH-VDO-70NG, SH-VDO-30NS, SH-VDO-70NS) Tube Furnace All Packages	Vacuum Drying Ovens (SH-VDO-70NG, SH-VDO-125NG, SH-VDO-216NG, SH-VDO-30NS, SH-VDO-70NS, SH-VDO-125NS) Tube Furnace All Packages	Vacuum Drying Ovens (SH-VDO-125NG, SH-VDO-216NG, SH-VDO-125NS)	Vacuum Drying Ovens (SH-VDO-216NG)

• Option



Oil Mist Trap with Filter

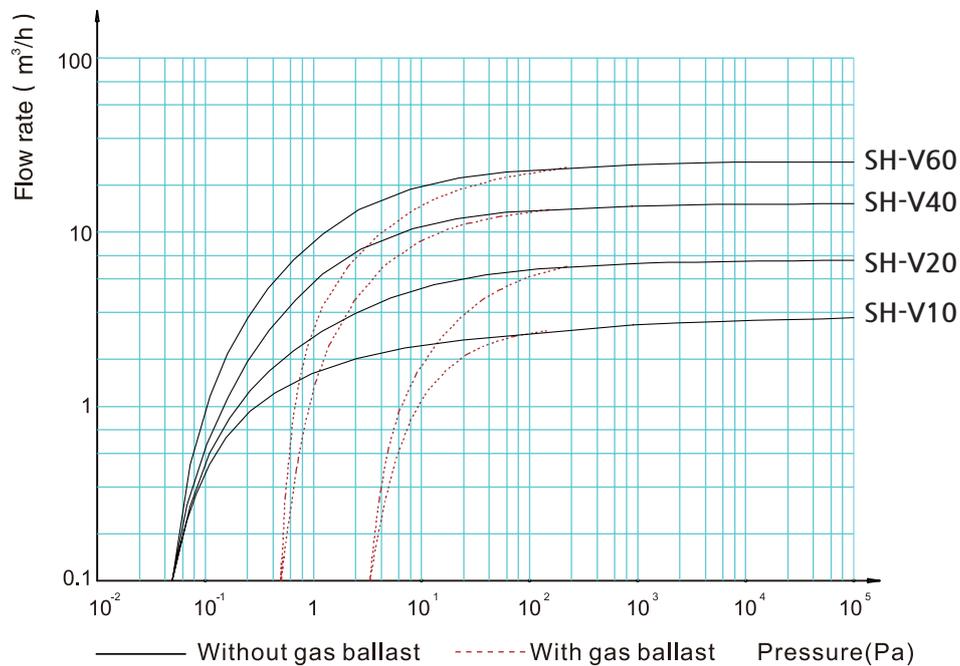
VOT-1020 : V10, V20
VOT-4080 : V40, V60



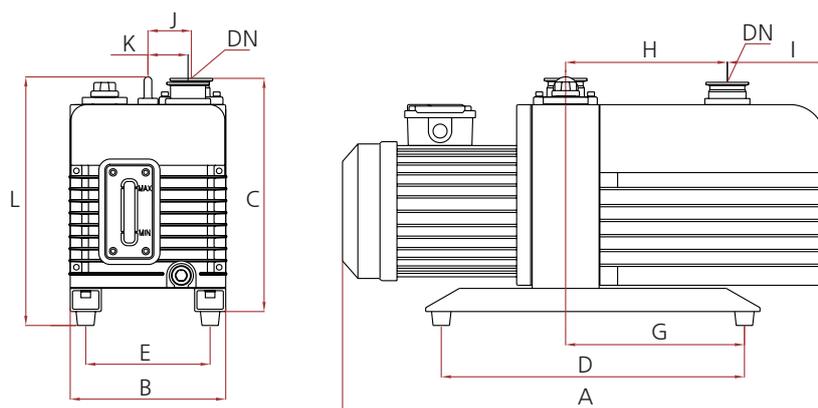
Filter for Oil Mist Trap

VOTF-1020 : VOT-1020
VOTF-4080 : VOT-4080

Flow Rate Characteristic



Dimension



Dimensions												
Model	A	B	C	D	E	G	H	I	J	K	L	DN
SH-V10	460	144	207	210	110	126	154	45	45	34	/	KF16/25
SH-V20	460	144	207	210	110	126	154	45	45	34	/	KF16/25
SH-V40	520	188	272	320	148	160	165	69	59	38	295	KF25
SH-V60	520	188	272	320	148	160	165	69	59	38	295	KF25

SH-VDC (Low noise) Series

Dual stage low noise rotary vacuum pump

It is an energy-saving vacuum pump with a compact DC motor design.

In particular, the low-noise feature is very suitable for a quiet laboratory room or for analysis laboratory room. ($\leq 48\text{db}$)



Low Noise

- No work disturbance in laboratory room with the low-noise feature
- Energy saving with low power consumption
- Simple and easy maintenance

Model	SH-VDC7	SH-VDC10	SH-VDC20
Pumping Speed(50/60Hz)	66L/min	96L/min	183L/min
Ultimate total pressure gas ballast close	5×10^{-2} Pa (3.7×10^{-4} torr)	5×10^{-2} Pa (3.7×10^{-4} torr)	5×10^{-2} Pa (3.7×10^{-4} torr)
Ultimate total pressure gas ballast open	10 Pa (7.5×10^{-2} torr)	10 Pa (7.5×10^{-2} torr)	10 Pa (7.5×10^{-2} torr)
Power supply	220V,50/60Hz or 110V,50/60Hz		
Power rating(kw)	0.37(1 Phase)	0.37(1 Phase)	0.37(1 Phase)
Inlet/Exhaust Flange	KF 16/25	KF 16/25	KF 16/25
Oil capacity(L)	0.6~1	0.6~1	0.6~1
Ambient temperature($^{\circ}\text{C}$)	5~40		
Noise level(dB)	≤ 48	≤ 48	≤ 50
Weight(kg)	14.5	14.5	15.5
Recommended for	Vacuum Drying Ovens (SH-VDO-08NG, SH-VDO-30NG, SH-VDO-30NS) Tube Furnace All Packages	Vacuum Drying Ovens (SH-VDO-08NG, SH-VDO-30NG, SH-VDO-70NG, SH-VDO-30NS, SH-VDO-70NS) Tube Furnace All Packages	Vacuum Drying Ovens (SH-VDO-70NG, SH-VDO-125NG, SH-VDO-216NG, SH-VDO-70NS, SH-VDO-125NS) Tube Furnace All Packages

• Option



Oil Mist Trap with Filter

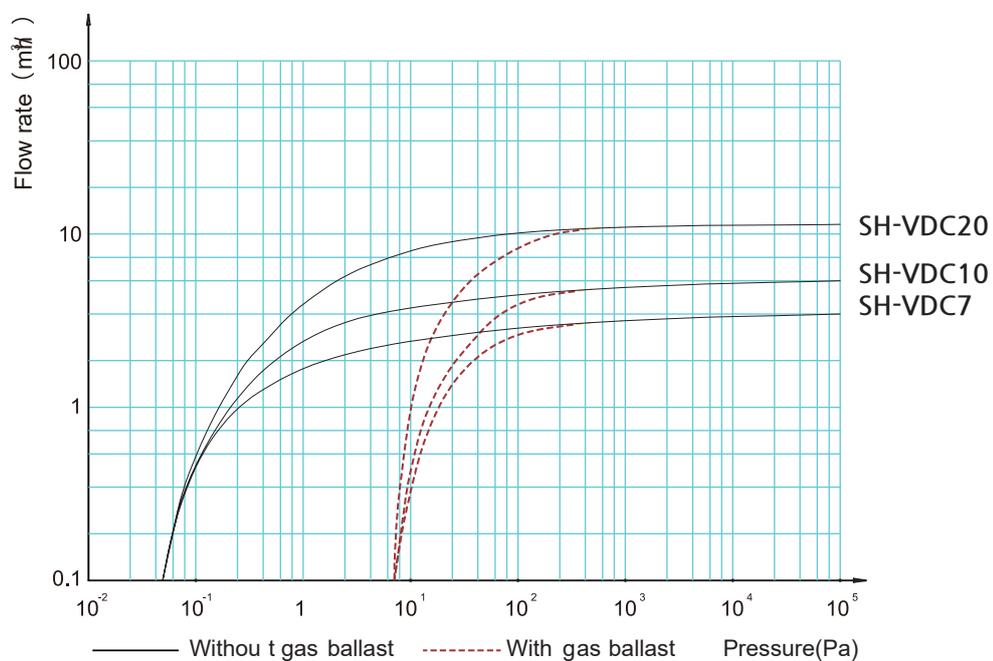
VOT-1020 : V10, V20
VOT-4080 : V40, V60



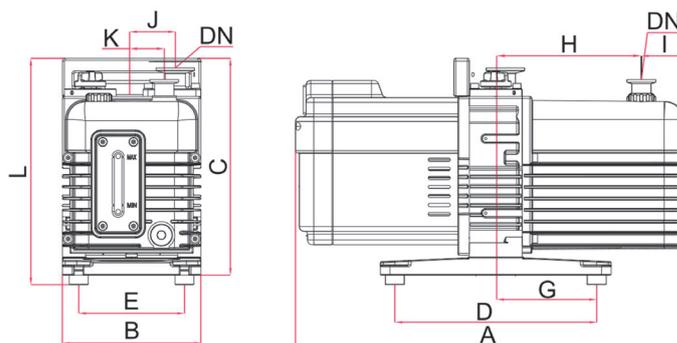
Filter for Oil Mist Trap

VOTF-1020 : VOT-1020
VOTF-4080 : VOT-4080

Flow Rate Characteristic



Dimension



Dimensions												
Model	A	B	C	D	E	G	H	I	J	K	L	DN
SH-VDC7	420	144	207	210	110	126	154	45	45	34	/	KF16/25
SH-VDC10	420	144	207	210	110	126	154	45	45	34	/	KF16/25
SH-VDC20	420	144	207	210	110	126	154	45	45	34	/	KF16/25

SH-DV (Oil free) Series

Introduction of Oil free Scroll Vacuum Pump

- Wide product line up.
- No oil back diffusion or exhaust.
- Can be repeatedly continuous operated between atmospheric and vacuum.
- Low vibration, low noise and high efficiency.
- Ease of maintenance.



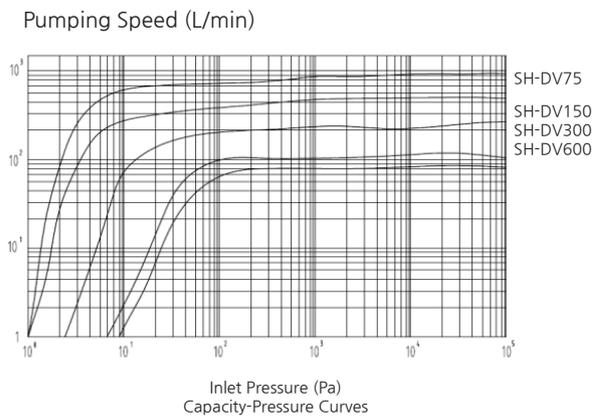
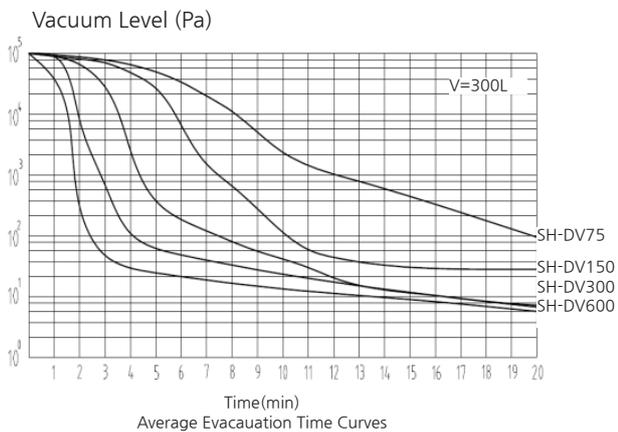
〈SH-DV150〉



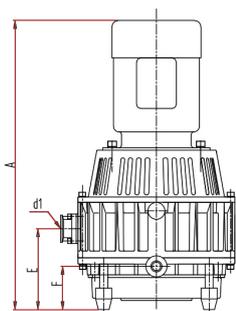
〈SH-DV300, 600〉

Model		SH-DV150	SH-DV300	SH-DV600
Pumping Speed(50/60Hz)		144L/min	305L/min	623L/min
Ultimate Pressure		6Pa ($\leq 4.5 \times 10^{-2}$ torr)	2.5 Pa ($\leq 1.9 \times 10^{-2}$ torr)	0.9 Pa ($\leq 7.5 \times 10^{-3}$ torr)
Inlet/Exhaust Flange		KF 25/16	KF 25/16	KF 40/16
Motor 1 phase	Motor Power(kW)	0.55	0.75	0.75
	Voltage (VAC)	220V,50/60Hz or 110V,50/60Hz		
	Speed (rpm)	50Hz /1425; 60Hz /1725		
Motor 3 phase	Motor Power(kW)	0.37	0.55	0.75
	Voltage (VAC)	50 Hz/200~230 or 380~415; 60 Hz/200~230 or 460		
	Speed (rpm)	50Hz/1425; 60Hz/1725		
Ambient temperature(°C)		5~40		
Noise Level (dB)		≤ 52	≤ 60	≤ 61
Net Weight	1phase(kg)	22	27	31
	3phase(kg)	21	31	38
Others		With air flush		
Recommended for		Vacuum Drying Ovens (SH-VDO-30NG, SH-VDO-70NG, SH-VDO-125NG, SH-VDO-216NG, SH-VDO-30NS, SH-VDO-70NS,SH-VDO-125NS) Tube Furnace All Packages	Vacuum Drying Ovens (SH-VDO-125NG, SH-VDO-216NG, SH-VDO-175NG, SH-VDO-252NG, SH-VDO-125NS)	Vacuum Drying Ovens (SH-VDO-125NG,SH-VDO-216NG, SH-VDO-175NG, SH-VDO-252NG, SH-VDO-125NS)

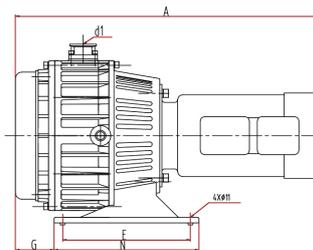
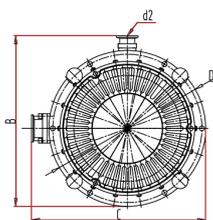
Performance curves



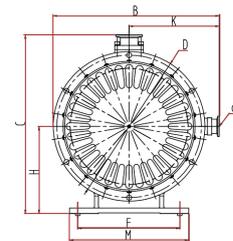
Dimension



<SH-DV150>



<SH-DV300, 600>



Dimensions													
Model	A	B	C	D	E	F	G	H	M	N	K	d1	d2
SH-DV150	460	265	270	200	112	74	-	-	-	-	-	KF25	KF16
SH-DV300	492	268	324	226	252	163	87	174	192	288	140	KF25	KF16
SH-DV600	530	312	343	275	252	170	115	178	206	288	165	KF40	KF16

Programmable Controller Options



- High Accuracy($\pm 0.1\%$) with excellent Function
- Multi Input : TC, RTD, DCV
- Simultaneous and Multi output available in Max 4 Points
- Easy parameter and value setting
- Function to protect over shoot
- RUN/STOP Function in the external Input contact point
- Display of Running status in Auxiliary Output
- Large Program Capacity : 2 Patterns / 30 Segments
- Variety of Auxiliary Output available (ex IS, TS, PEND etc)
- Input Piece Bias Function(Max 4 zone)
- Automatic PID Parameter Calculation
- Variety of communication Protocols
- Reliable quality(CE, CUL, ISO applied)

Display	Size(WxHxL)	96x96x68mm(3.8x3.8x2.68") / 72x72x68mm(2.83x2.83x2.68")
	PV/SP Display	4 Digit
Operation Mode		Program / Reset, 2 Zone PID
Control Mode		1CH Control
Max Channel		-
Pattern & Segments		2 Pattern / Max 30 segments
Input	TC	K, J, E, T, R, B, S, L, N, U, W, C, Platinel II
	RTD	Pt100 Ω , JPt100 Ω
	Analog Voltage Input	-10~20mV, 0~100mV, 0.4~2.0V DC, 1~5V DC, 0~10V DC
Output	Control Output	RELAY, SSR(Voltage Pulse)
	Current Output	4 ~ 20mA DC
	Voltage Output	-
	Transmission Output	4 ~ 20mA (PV, SP, MV)
Digital Input	Contact Type	2 Points / 4 Types(RUN, HOLD, STEP, RESET)
	Contact capacity	-
Digital Output	Relay	Normal Open 30V DC A, 250V AC 1A Normal Close 30V DC3A 250V AC 3A
	Open Collector	ON voltage across contacts at less than 2V, the leakage current less than 100 μ A
Sampling Time		250ms
Accuracy		$\pm 0.1\%$ $\pm 1\%$ digit of Full Scale
Event	Alarm	1 Point / Max 3 Points(20 Types)
	Inner Signal	2 Points (PV, SP, TSP)
	Time Signal	1 Point
	Other	1 Point (RUN, Pattern END, UP, DOWN, SOAK)
Communication	Interface	RS485
	Protocol	PC-Link, MODBUS(ASCII, RTU), SYNC(Master, Slave)
	Speed	Max 115,200 bps
Power	Power	100 ~ 240V AC, 50 ~ 60Hz
	Power Consumption	Max 10W
Operating environment		-
Weight		-