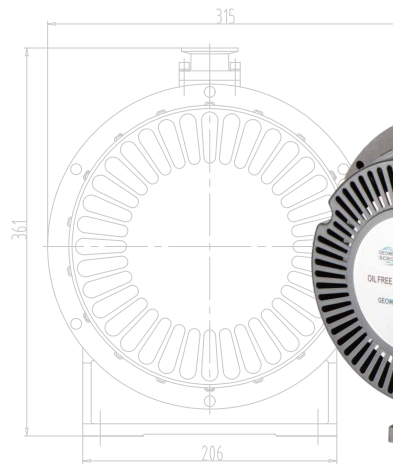
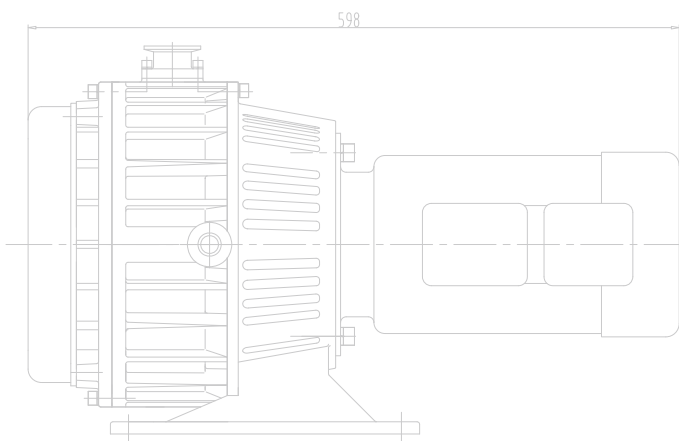


Premium oil free scroll vacuum pump manufacturer



- GWSP Oil free Scroll Vacuum Pump
- GWSPS Oil free Scroll Vacuum Pump
- GWMS Oil free Ultrahigh Vacuum Station
- GWSPC Oil free Scroll Vacuum Compressor
- GWT Foreline Filter
- GWS Exhaust Silencer
- GWMMK Major Maintenance Kit
- GWTSK Tip Seal Kit

**GEOWELL VACUUM CO., LTD.**

[www.geowellscroll.com](http://www.geowellscroll.com)



## GWSP Oil free Scroll Vacuum Pump

### Working principle

GWSP oil free scroll vacuum pump is constructed with a pump head kit, motor kit and bracket kit. There are three scroll plates, one orbiting and two fixed. The orbiting scroll plate is offset and orbiting against the two fixed scroll plates with an offset of 180° to form several crescent-shaped pockets of different sizes.

### Features & Benefits

- Pumping speed from 4.3~72m<sup>3</sup>/h
- Suitable for 100~460V, 1 and 3 phase power supply
- Low noise or vibration
- High efficiency, easy maintenance
- No oil contamination of vacuum chamber or environment



### Specifications

Model			GWSP75	GWSP150	GWSP300	GWSP600	GWSP800	GWSP1000	
Pumping Speed	60Hz	l/s	1.2	2.4	5.2	10.4	14.4	20.0	
		l/min	72.0	144.0	309.6	624.0	864.0	1200.0	
		m³/h	4.3	8.6	18.6	37.4	51.8	72.0	
		cfm	2.5	5.1	10.9	22.0	30.5	42.4	
	50Hz	l/s	1.1	2.0	4.3	8.7	12.0	16.6	
		l/min	66.0	120.0	258.0	522.0	720.0	996.0	
		m³/h	4.0	7.2	15.5	31.3	43.2	59.8	
		cfm	2.3	4.2	9.1	18.4	25.4	35.2	
Ultimate Pressure		Torr	≤6.0*10 <sup>-2</sup>	≤3.8*10 <sup>-2</sup>	≤2.0*10 <sup>-2</sup>	≤7.5*10 <sup>-3</sup>	≤7.5*10 <sup>-3</sup>	≤7.5*10 <sup>-3</sup>	
		psi	≤1.2*10 <sup>-3</sup>	≤7.2*10 <sup>-4</sup>	≤3.8*10 <sup>-4</sup>	≤1.5*10 <sup>-4</sup>	≤1.5*10 <sup>-4</sup>	≤1.5*10 <sup>-4</sup>	
		mbar	≤8.0*10 <sup>-2</sup>	≤5.0*10 <sup>-2</sup>	≤2.6*10 <sup>-2</sup>	≤1.0*10 <sup>-2</sup>	≤1.0*10 <sup>-2</sup>	≤1.0*10 <sup>-2</sup>	
		Pa	≤8	≤5	≤2.6	≤1	≤1	≤1	
Noise Level		dB(A)	≤54	≤57	≤63	≤63	≤65	≤67	
Leakage		mbar·l/s	1*10 <sup>-6</sup>						
Max.Inlet/Exhaust Pressure		atm	1 / 1.3						
Ambient Operation Temp.		°F	41~104						
Motor 1 phase	Power	kW	0.25	0.55	0.55	0.75	1.1	--	
	Voltage	V	110~115(60Hz), 200~230(50Hz)						--
	Speed	rpm	1725(60Hz), 1425(50Hz)						--
	Plug		North America, Europe, UK, Ireland, India						--
Motor 3 phase	Power	kW	0.25	0.55	0.55	0.75	1.1	1.5	
	Voltage	V	200~230 or 460(60Hz), 200~230 or 380~415(50Hz)						
	Speed	rpm	1725 (60Hz), 1425 (50Hz)						
Inlet/Exhaust Flange			KF25/KF16			KF40/KF16		KF40/KF25	
Dimensions		inch	13.0*8.7*10.0	17.7*10.2*11.7	19.4*11.7*13.1	21.2*12.4*13.7	21.7*14.3*15.4	22.7*17.7*15.8	
		mm	330*220*253	450*260*296	493*297*334	538*315*348	550*363*392	576*450*402	
Weight		lbs	33	46	62	79	88	119	
		kg	15	21	28	36	40	54	
Cooling Type			Air cooled						
Others			With air flush						

### Safety Precautions

The GWSP series oil free scroll vacuum pumps are suitable for clean processes only.

Do not pump toxic, explosive, flammable or corrosive substances or substances which contain chemicals, solvents or particles. GEOWELL will not perform maintenance work on pumps which have used special gases or other hazardous substances.

Be sure the inlet gas temperature must be lower than 122 °F.

## Applications



Cutting-Edge Scientific Research



Space Science Research



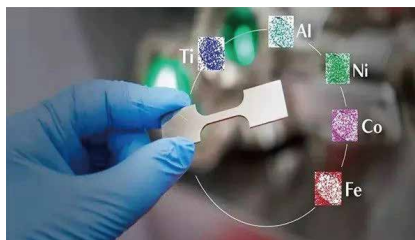
New Energy Industry



Analytical Testing Instruments



Semiconductor Industry



Materials Process Industry



Medical Equipment Industry

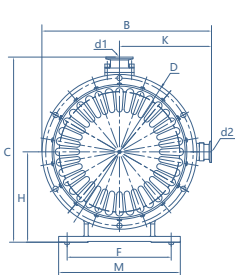
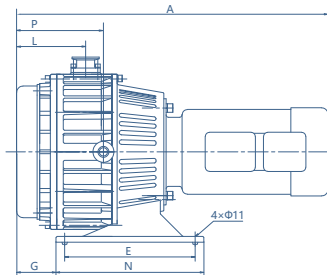


Food and Pharmaceutical Industry

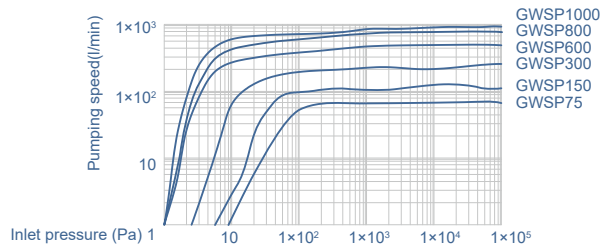


Vacuum Equipment Industry

## Dimensions



## Pumping speed-inlet pressure curve



Pumping speed-inlet pressure curve under 50Hz

	A	B	C	D	E	F	G	H	K	L	M	N	P	d1	d2
GWSP75	330	220	253	185	174	101	61	110	120	87	137	210	103	KF25	KF16
GWSP150	450	260	296	220	214	119	80	130	135	108	155	250	54	KF25	KF16
GWSP300	493	297	334	262	252	156	85	172	155	114	192	288	147	KF25	KF16
GWSP600	538	315	348	291	252	160	108	175	174	135	206	288	168	KF40	KF16
GWSP800	550	363	392	336	267	184	115	195	195	136	224	303	167	KF40	KF16
GWSP1000	576	450	402	357	267	184	124	195	200	136	224	303	66/178	KF40	KF25

## GWSPS Oil free Scroll Vacuum Pump

### Working principle

GWSPS oil free scroll vacuum pump is constructed with a pump head kit, motor kit and bracket kit. There are two scroll plates, one orbiting and the other fixed. The orbiting scroll plate is offset and orbiting against the fixed scroll plate with an offset of 180° to form several crescent-shaped pockets of different sizes.

### Features & Benefits

- 100% oil free
- Pumping speed from 4.2~50m<sup>3</sup>/h
- Suitable for 100~460V, 1 and 3 phase power supply
- Low noise or vibration
- High efficiency, easy maintenance
- No oil contamination of vacuum chamber or environment



### Specifications

Model			GWSPS75	GWSPS150	GWSPS300	GWSPS500	GWSPS900
Pumping Speed	60Hz	l/s	1.2	3.1	5.3	8.1	13.9
		l/min	72.0	186.0	318.0	486.0	834.0
		m³/h	4.2	11.1	19.0	29.1	50.0
		cfm	2.4	6.8	11.2	17.1	30.0
	50Hz	l/s	1.0	2.6	4.4	6.7	11.6
		l/min	60.0	156.0	264.0	402.0	696.0
		m³/h	3.6	9.4	15.8	24.0	41.6
		cfm	2.2	5.5	9.3	14.2	24.6
Ultimate Pressure		Torr	≤1.1*10 <sup>-1</sup>	≤7.5*10 <sup>-2</sup>	≤6.0*10 <sup>-2</sup>	≤3.7*10 <sup>-2</sup>	≤1.5
		psi	≤2.2*10 <sup>-3</sup>	≤1.5*10 <sup>-3</sup>	≤1.2*10 <sup>-3</sup>	≤7.3*10 <sup>-4</sup>	≤2.9*10 <sup>-2</sup>
		mbar	≤1.5*10 <sup>-1</sup>	≤1.0*10 <sup>-1</sup>	≤8.0*10 <sup>-2</sup>	≤5.0*10 <sup>-2</sup>	≤2.0
		Pa	≤15	≤10	≤8	≤5	≤200
Noise Level		dB(A)	≤57	≤57	≤63	≤63	≤67
Leakage		mbar·l/s	1*10 <sup>-6</sup>				
Max.Inlet/Exhaust Pressure		atm	1 / 1.3				
Ambient Operation Temp.		°F	41~104				
Motor 1 phase	Power	kW	0.55			--	--
	Voltage	V	110~115(60Hz), 200~230(50Hz)			--	--
	Speed	rpm	1725(60Hz), 1425(50Hz)			--	--
	Plug		North America, Europe, UK, Ireland, India			--	--
Motor 3 phase	Power	kW	0.55			0.75	1.5
	Voltage	V	200~230 or 460(60Hz), 200~230 or 380~415(50Hz)				
	Speed	rpm	1725 (60Hz), 1425 (50Hz)				
Inlet/Exhaust Flange			KF25/KF16			KF40/KF16	
Dimensions		inch	19.8*9.4*11.3	19.8*9.4*11.3	20.7*10.7*12.4	22.7*12.4*14.0	22.7*12.4*14.0
		mm	502*238*288	502*238*288	526*271*315	578*315*355	578*315*355
Weight		lbs	49	49	71	84	91
		kg	22	22	32	38	41
Cooling Type			Air cooled				

### Safety Precautions

Be sure the inlet gas temperature must be lower than 122 °F.

## Applications



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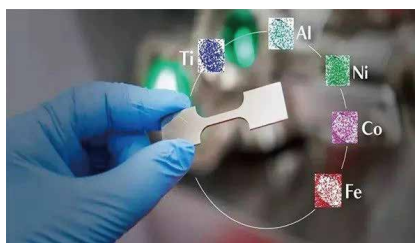
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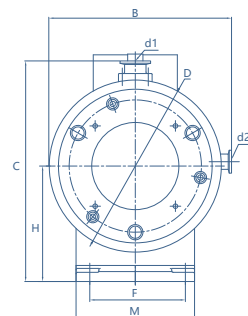
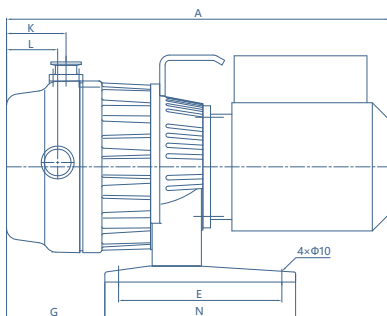


Food and Pharmaceutical Industry

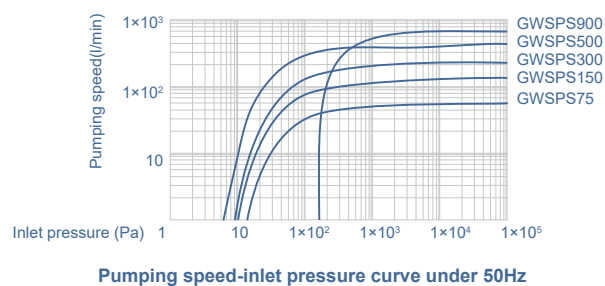


Vacuum Equipment Industry

## Dimensions



## Pumping speed-inlet pressure curve



	A	B	C	D	E	F	G	H	K	L	M	N	d1	d2
GWSPS75	502	238	288	225	214	125	129	151	78	67	155	250	KF25	KF16
GWSPS150	502	238	288	225	214	125	129	151	78	67	155	250	KF25	KF16
GWSPS300	526	271	315	254	252	156	133	173	95	85	192	288	KF25	KF16
GWSPS500	578	315	355	299	252	164	148	172	134	85	204	288	KF40	KF16
GWSPS900	578	315	355	299	252	164	148	172	134	85	204	288	KF40	KF16



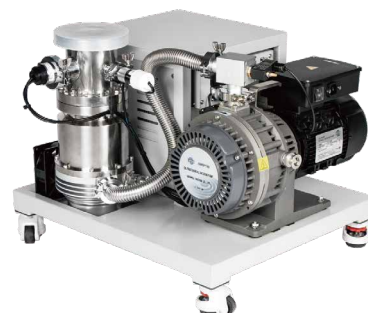
## GWMS Oil free Ultrahigh Vacuum Station

### Working principle

GWMS oil free ultrahigh vacuum station is combined turbo molecular pump, oil free scroll vacuum pump, composite vacuum gauge and measurement hood in an integrated unit for oil free ultrahigh vacuum pumping.

### Features & Benefits

- Oil free ultrahigh vacuum pumping combined with turbopump and oil free scroll vacuum pump
- Air cooled and ready for operation
- Compact construction and cost-effective
- Integrated control unit



### Specifications

Model		GWMS100/150	GWMS300/150	GWMS600/300	GWMS1200/600	GWMS1600/1000
Main pump-turbomolecular pump		GWFB-110	GWFB-300	GWFB-600	GWFB-1200	GWFB-1600
Backing pump-scroll pump		GWSP150	GWSP150	GWSP300	GWSP600	GWSP1000
Pumping Speed Main pump at 50Hz	l/s	110	300	600	1200	1600
	m <sup>3</sup> /h	3.96*10 <sup>2</sup>	1.08*10 <sup>3</sup>	2.16*10 <sup>3</sup>	4.32*10 <sup>3</sup>	5.76*10 <sup>3</sup>
	cfm	2.20*10 <sup>2</sup>	6.36*10 <sup>2</sup>	1.06*10 <sup>3</sup>	2.54*10 <sup>3</sup>	3.39*10 <sup>3</sup>
Pumping Speed Backing pump at 50Hz	l/s	2.0	2.0	4.3	8.7	16.6
	m <sup>3</sup> /h	7.2	7.2	15.5	31.3	59.8
	cfm	4.2	4.2	9.1	18.4	35.2
Ultimate Pressure	Pa	5.00*10 <sup>-5</sup>	2.00*10 <sup>-5</sup>	2.00*10 <sup>-5</sup>	2.00*10 <sup>-5</sup>	2.00*10 <sup>-5</sup>
	Torr	3.75*10 <sup>-7</sup>	1.50*10 <sup>-7</sup>	1.50*10 <sup>-7</sup>	1.50*10 <sup>-7</sup>	1.50*10 <sup>-7</sup>
	psi	7.25*10 <sup>-9</sup>	2.90*10 <sup>-9</sup>	2.90*10 <sup>-9</sup>	2.90*10 <sup>-9</sup>	2.90*10 <sup>-9</sup>
Power Source Type		1 phase/ 3 phase, 220V/ 380V, 50Hz/ 60Hz				
Inlet Flange		CF100/ISO-K100	CF100/ISO-K100	CF150/ISO-K160	CF200/ISO-K200	CF250/ISO-K250
Foreline Flange		--	KF25	KF25	KF40	KF40
Exhaust Flange		KF16	KF16	KF16	KF16	KF16*2
Noise Level	dB(A)	≤57	≤57	≤63	≤63	≤67
Dimensions	inch	19.7*20.1*33.1	27.2*20.7*21.7	33.9*30.6*33.5	33.9*30.6*33.5	33.9*30.6*33.5
	mm	500*510*840	690*526*550	860*776*850	860*776*850	860*776*850
Weight	lbs	119	150	342	360	415
	kg	54	68	155	163	188
Ambient Temp	°F	41~104				
Cooling Type		Air cooled				

### Applications



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## GWSPC Oil free Scroll Vacuum Compressor

### Applications

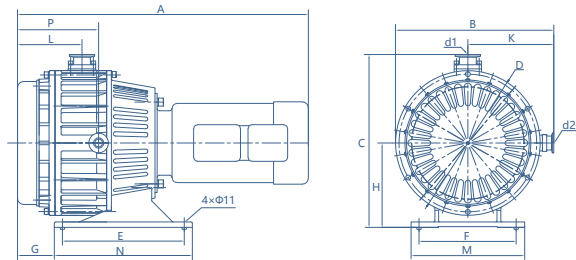
SF6 recovery and recirculating  
Special gas recovery



### Specifications

Model			GWSPC75	GWSPC150	GWSPC300	GWSPC600	GWSPC1000
Pumping Speed	60Hz	m³/h	4.3	8.6	18.3	37.4	71.6
		cfm	2.5	5.1	10.8	22	42.1
	50Hz	m³/h	3.6	7.2	15.5	31.3	59.8
		cfm	2.2	4.3	9.1	18.5	35.2
Ultimate Pressure		mbar	≤3.0*10 <sup>-1</sup>	≤3.0*10 <sup>-1</sup>	≤2.0*10 <sup>-1</sup>	≤1.0*10 <sup>-1</sup>	≤1.0*10 <sup>-1</sup>
		Torr	≤2.3*10 <sup>-1</sup>	≤2.3*10 <sup>-1</sup>	≤1.5*10 <sup>-1</sup>	≤7.5*10 <sup>-2</sup>	≤7.5*10 <sup>-2</sup>
Noise Level		dB(A)	≤57	≤57	≤63	≤63	≤67
Max.Inlet/Exhaust Pressure		atm	1/3				
Ambient Operation Temp.		°F	41~104				
Motor 3 phase	Power	kW	0.55		1.5	2.2	3.0
	Voltage	V	200~230 or 460(60Hz), 200~230 or 380~415(50Hz)				
	Speed	rpm	1725(60Hz), 1425(50Hz)				
Inlet/Exhaust Flange			KF25/KF16			KF40/KF16	KF40/KF16*2
Dimensions		inch	17.7*10.2*11.7	17.9*10.2*11.7	21.3*11.3*13.1	22.8*12.4*13.7	25.8*17.9*15.8
		mm	450*260*296	455*260*296	540*287*334	578*315*348	655*455*402
Weight		lbs	46	49	86	117	141
		kg	21	22	39	53	64
Cooling Type			Air cooled				

### Dimensions



	A	B	C	D	E	F	G	H	K	L	M	N	P	d1	d2
GWSPC75	450	260	296	220	214	119	80	151	135	108	155	250	50	KF25	KF16
GWSPC150	455	260	296	220	214	119	85.5	151	135	112	155	250	128	KF25	KF16
GWSPC300	540	287	334	262	252	156	84.5	171.5	155	124	192	288	147	KF25	KF16
GWSPC600	578	315	348	291	302	160	108	175	175	129	206	338	165	KF40	KF16
GWSPC1000	655	455	402	357	303	160	115	195	200	139	206	338	120/65	KF40	KF16*2

## GWT Foreline Filter

### Specifications

Model		GWT25	GWT40
Operating Pressure	Pa	1~10 <sup>5</sup>	1~10 <sup>5</sup>
Efficiency	%	≥99	≥99
Particle Size Filtered	μm	≥2~5	≥2~5
Filter Element		Paper, or polyester	Paper, or polyester
Inlet/Exhaust Flange		KF25/KF25	KF40/KF40
Weight	lbs	2.98	5.41
	kg	1.35	2.45

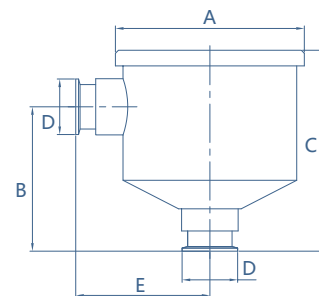


### Applications

Coating, pharmaceutical, food, ceramic and glass, vacuum furnace, vacuum packing.

### Dimensions

Model		A	B	C	D	E
GWT25	inch	Ø5.8	3.8	5.4	KF25	4.3
	mm	Ø147	96	138	KF25	109
GWT40	inch	Ø7.4	5.6	7.8	KF40	5.2
	mm	Ø187	142	199	KF40	132



## GWS Exhaust Silencer

### Specifications

Model		GWS16	GWS25
Operating Pressure	Pa	1~10 <sup>5</sup>	1~10 <sup>5</sup>
Efficiency	%	≥99	≥99
Particle Size Filtered	μm	≥2~5	≥2~5
Filter Element		Paper, or polyester	Paper, or polyester
Inlet Flange		KF16	KF25
Weight	lbs	0.55	0.88
	kg	0.25	0.40

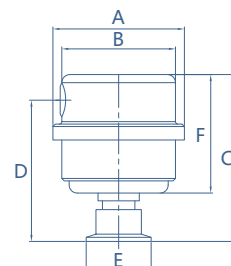


### Applications

Coating, pharmaceutical, food, ceramic and glass, vacuum furnace, vacuum packing.

### Dimensions

Model		A	B	C	D	E	F
GWS16	inch	Ø2.5	Ø2.1	3.7	3.2	KF16	2.2
	mm	Ø63	Ø53	94	82	KF16	55
GWS25	inch	Ø3.2	Ø2.8	4.1	3.4	KF25	2.9
	mm	Ø81	Ø70	103	87	KF25	74





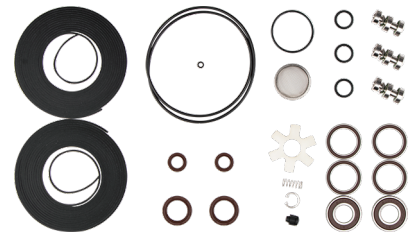
## GWMMK Major Maintenance Kit

### Specifications

Model	Unit	GWMMK75	GWMMK150	GWMMK300	GWMMK600	GWMMK800	GWMMK1000
Working temperature	°F	-4~194					
Working pressure	Pa	$1 \times 10^{-1} \sim 10^6$					
Working life	Hour	8,000~16,000					
Weight	lbs	0.9	0.9	1.1	1.1	1.1	2.1
	kg	0.4	0.4	0.5	0.5	0.5	0.95
Product suited		GWSP75	GWSP150	GWSP300	GWSP600	GWSP800	GWSP1000
		GWSPC75	GWSPC150	GWSPC300	GWSPC600	--	GWSPC1000

### Features & Benefits

- Super wear proof
- High temperature resistance
- Excellent abrasion resistance
- Working life 1~2 year
- Clean and quiet
- Improve limited vacuum
- Decrease noise
- 24 hours per day continues operation



### Applications

For the major maintenance of oil free scroll vacuum pumps and oil free scroll vacuum compressors.

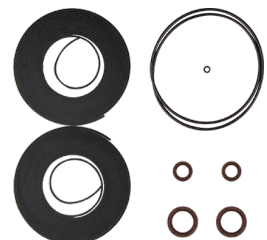
## GWTSK Tip Seal Kit

### Specifications

Model	Unit	GWTSK75	GWTSK150	GWTSK300	GWTSK600	GWTSK800	GWTSK1000
Working temperature	°F	-4~194					
Working pressure	Pa	$1 \times 10^{-1} \sim 10^6$					
Working life	Hour	8,000~16,000					
Weight	lbs	0.2	0.3	0.3	0.3	0.3	0.3
	kg	0.1	0.15	0.15	0.15	0.15	0.15
Product suited		GWSP75	GWSP150	GWSP300	GWSP600	GWSP800	GWSP1000
		GWSPC75	GWSPC150	GWSPC300	GWSPC600	--	GWSPC1000

### Features & Benefits

- Super wear proof
- High temperature resistance
- Excellent abrasion resistance
- Working life 1~2 year
- Clean and quiet
- Improve limited vacuum
- Decrease noise
- 24 hours per day continues operation



### Applications

For the major maintenance of oil free scroll vacuum pumps and oil free scroll vacuum compressors.

## Vacuum Pump Selection Formula

$$T = (V/S) * 2.303 * \log(P1/P2)$$

T: exhaust time (s), V: volume (L), S: pumping speed (l/s), P1: initial pressure (Pa), P2: final pressure (Pa)

Example:

1.100 liters chamber, within 10 minutes from the atmosphere evacuated to 20Pa, how to do pump selection?

$S = (V/T) * 2.303 * \log(P1/P2) = (100/600) * 2.303 * \log(100,000/20) = (1/6) * 2.303 * 3.699 = 1.42(l/s)$ , the maximum choice of 2l/s vacuum pump.

2.100 liters chamber, use 8l/s vacuum pump, pumping from atmosphere to 200Pa, how long time will be spent?

$T = (V/S) * 2.303 * \log(P1/P2) = (100/8) * 2.303 * \log(100,000/200) = 77s$ , need 77 seconds.

## Evacuation Time Estimates Empirical Formula

$$T = 8V/S$$

V: volume (L), S: pumping speed (l/s). This formula is suitable for the pressure scale of atmospheric pressure to estimate 133Pa.

Example:

100 liters chamber, with 8l/s vacuum pump, pumping from atmosphere to 133Pa, how long time will be spent?

$T = 8V/S(\text{empirical formula}) = 8 * 100 / 8 = 100s$ , need 100 seconds.

## Unit Conversion Table of Vacuum Degree

	Pa (N/m <sup>2</sup> )	bar	mbar	Torr (mmHg)	micron (mTorr)	atm	psi (lbf/inch <sup>2</sup> )
1 Pa=	1	1*10 <sup>-5</sup>	1*10 <sup>-2</sup>	7.5*10 <sup>-3</sup>	7.5	9.87*10 <sup>-6</sup>	1.45*10 <sup>-4</sup>
1 bar=	1*10 <sup>5</sup>	1	1*10 <sup>3</sup>	7.5*10 <sup>2</sup>	7.5*10 <sup>5</sup>	9.87*10 <sup>-1</sup>	1.45*10 <sup>1</sup>
1 mbar=	1*10 <sup>2</sup>	1*10 <sup>-3</sup>	1	7.5*10 <sup>-1</sup>	7.5*10 <sup>2</sup>	9.87*10 <sup>-4</sup>	1.45*10 <sup>-2</sup>
1 Torr=	1.33*10 <sup>2</sup>	1.33*10 <sup>-3</sup>	1.33	1	1*10 <sup>3</sup>	1.32*10 <sup>-3</sup>	1.93*10 <sup>-2</sup>
1 micron=	1.33*10 <sup>-1</sup>	1.33*10 <sup>-6</sup>	1.33*10 <sup>-3</sup>	1*10 <sup>-3</sup>	1	1.32*10 <sup>-6</sup>	1.93*10 <sup>-5</sup>
1 atm=	1.01*10 <sup>5</sup>	1.01	1.01*10 <sup>3</sup>	7.6*10 <sup>2</sup>	7.6*10 <sup>5</sup>	1	1.47*10 <sup>1</sup>
1 psi=	6.89*10 <sup>3</sup>	6.89*10 <sup>-2</sup>	6.89*10 <sup>1</sup>	5.17*10 <sup>1</sup>	5.17*10 <sup>4</sup>	6.8*10 <sup>-2</sup>	1

## Unit Conversion of Pumping Speed

	l/s	l/min	m <sup>3</sup> /h	cft/min
1 l/s=	1	60	3.6	2.12
1 l/min=	1.67*10 <sup>-2</sup>	1	6*10 <sup>-2</sup>	3.53*10 <sup>-2</sup>
1 m <sup>3</sup> /h=	2.8*10 <sup>-1</sup>	1.67*10 <sup>1</sup>	1	5.9*10 <sup>-1</sup>
1 cft/min=	4.7*10 <sup>-1</sup>	2.83*10 <sup>1</sup>	1.69	1

## Unit Conversion of Conductance & Leakage

	Pa·m <sup>3</sup> /s	mbar·l/s	Torr·l/s	sccm
1 Pa·m <sup>3</sup> /s=	1	10	7.5	5.92*10 <sup>2</sup>
1 mbar·l/s=	1*10 <sup>-1</sup>	1	7.5*10 <sup>-1</sup>	5.92*10
1 Torr·l/s=	1.33*10 <sup>-1</sup>	1.33	1	7.89*10
1 sccm=	1.69*10 <sup>-3</sup>	1.69*10 <sup>-2</sup>	1.27*10 <sup>-2</sup>	1

## Unit Conversion of Temperature

	K	°C	°F
1 K=	1	°C+273.15	5/9(°F+459.67)
1°C=	K-273.15	1	5/9(°F-32)
1°F=	9/5K-459.67	9/5°C+32	1

## Unit Conversion of Length

	m	ft	in
1 m=	1	3.28	39.37
1 ft=	0.30	1	12.00
1 in=	0.025	0.083	1

## Unit Conversion of Weight

	kg	lb	oz
1 kg=	1	2.20	35.27
1 lb=	0.45	1	16.00
1 oz=	0.028	0.06	1

## Average free Path of Molecules in 70°F Air under Different Pressures

1 P(Torr)	1	1*10 <sup>-3</sup>	1*10 <sup>-4</sup>	1*10 <sup>-5</sup>	1*10 <sup>-6</sup>	1*10 <sup>-9</sup>
1 λ(cm)	4.72*10 <sup>-3</sup>	4.72	4.72*10	4.72*10 <sup>2</sup>	4.72*10 <sup>3</sup>	4.72*10 <sup>6</sup>

## Molecular Density at Different Pressures

1 P(Torr)	1	10 <sup>-3</sup>	10 <sup>-4</sup>	10 <sup>-5</sup>	10 <sup>-6</sup>	10 <sup>-9</sup>
1 n <sub>0</sub> (psc/cm)	4*10 <sup>16</sup>	4*10 <sup>13</sup>	4*10 <sup>12</sup>	4*10 <sup>11</sup>	4*10 <sup>10</sup>	4*10 <sup>7</sup>

## Why Choose GEOWELL Oil free Scroll Vacuum Pump?

GEOWELL is a leading professional manufacturer of oil free scroll vacuum pumps with over 20 years of field experience, the longest performance hours and largest sales in China, GEOWELL's oil free scroll vacuum pumps are the premium choice for clean pumping technology.

Oil free scroll vacuum pump, also refer to as vortex pump, scroll pump, dry pump, dry scroll pump, oil free scroll pump, oil less scroll pump, dry scroll vacuum pump, oil free vortex vacuum pump, etc, is perfectly used in semiconductor equipment, photoelectric equipment, materials equipment, medical and food equipment, energy, aerospace, analyzing instruments and vacuum systems, with the advantages of compact structure, small size, light weight and low vibration, low noise, low energy consumption, suitable for global power supply, one button start, can be frequently started and stop between atmospheric pressure and vacuum.

Oil free scroll vacuum pumps are constructed with one or two fixed scrolls and orbiting scroll. The orbiting scroll is driven by motor through an eccentric shaft driven by electric motor. The movement of the orbiting scroll, meshed with the fixed scroll, forms successive crescent shaped volumes in the pump body. Gas which enters the pump through the inlet is compressed by the movement of the orbiting scroll and swept towards the center of the fixed scroll. The compressed gas enters the exhaust port near the center of the fixed scroll and is exhausted from the pump through the exhaust port as shown below:



0°(360°) gas suction



90° gas pressing



180° further compressing



270° discharging

## LEADING MANUFACTURING TECHNOLOGY AND RELIABLE INFRASTRUCTURE



## SERVICE CENTERS





Premium oil free scroll vacuum pump manufacturer

## PROFILE

GEOWELL VACUUM CO., LTD. is a HI-TECH enterprise dedicating in manufacturing of oil free scroll vacuum pumps and compressors. For over 20 years, we GEOWELL have been providing users and partners with premium quality products that are efficient and dependable. Now we have more than 100 patents and proprietary technologies for oil free scroll vacuum pumps and compressors, and have met multiple international technical standards, including ISO9001 certification, CE and RoHS certification, annual output excess of 10,000. All these helping GEOWELL rank among the top scroll vacuum pump manufacturer in the world. We believe the integration of high performance and high reliability product and service will bring the highest value to both our customer and ourselves. For this goal, we have contributed our complete effort.

**CE RoHS ISO9001 certified manufacturer** **100+ intellectual properties**

**China top sales 10,000+ per year** **Users from 60+ countries** **OEM available**

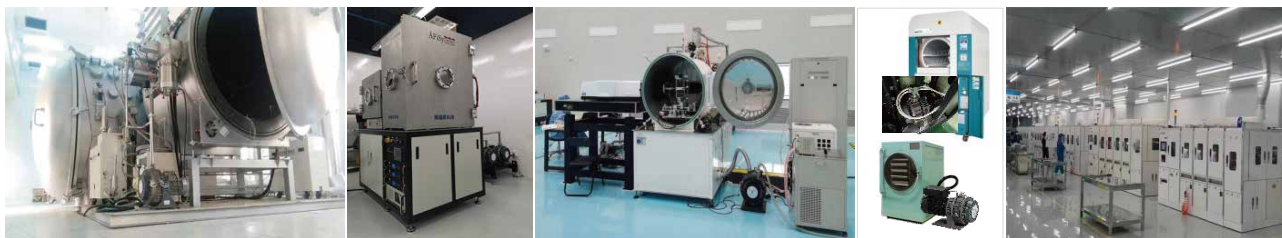
## CERTIFICATES



## FACILITIES



## APPLICATION CASES



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