SVP series Screw Vacuum Pump

Variable Pitch Screw Dry Vacuum Pump

swam

• Innovation • Technology • Excellence

SWAM vacuum

World's most innovative design & superior Dry Screw Vacuum Pump
(Highly Energy Efficient)

CIN No. U74899DL1978PTC008921

The Company

Swam a group known for technology, innovation and excellence has acquired exceptional product design & development capabilities to meet stringent quality and performance requirements and to confirm to the customers tough and diversified specifications. At Swam emphasis has been on innovative design, precision engineering, advanced technology, excellence in performance and quick responsiveness to customers.

Swam dry screw technology developed by our technical highly skilled engineers are of advanced design superior performance and of high reliability. The design & construction of the **Swamscrew** Pumps reflect the experience and know-how acquired over the years of product development in the particular field of machine engineering.

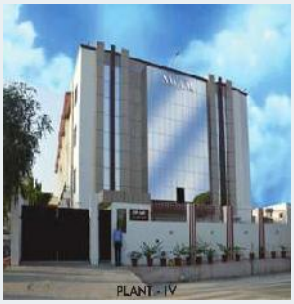
Swam, a leading engineering company and global leader specializing in design, engineering, manufacturing, supply of Rotary Air and Gas Blowers, Truck Blowers, Centrifugal Fans, Multistage Centrifugal Blowers, Turbo Blowers, Liquid Ring Vacuum Pumps and Compressors, Dry Screw Vacuum Pumps, Vacuum Boosters, Acoustic Enclosures, Heat Exchangers and related equipments.

With over three decades of experience the company has adequately matured to execute different projects and is today represented in over 15 countries. Our quality system has been accredited with ISO-9001 quality standards and procedures. The company's head office & works are located at Noida near New Delhi, the capital city of India. The company has FOUR manufacturing plants equipped with CNC Machines and in-house testing facility upto 1000 kw.

Our highly motivated engineers and work force faces, each contract with commitment to meet the client process specification and quality requirement. The company has executed many prestigious projects under the stringent quality compliance.

The company's quality system is as per ISO 9001:2008 and has very high regard for safety and environment and hence has all plants certified to ISO 14001 and OHSAS 18001.

Manufacturing Plants:



Superior Design-
Variable Pitch Screw Dry Pump

The Swam svp series Dry Screw Vacuum Pump are the most advanced design, superior construction pumps with many unique features.

Ultimate Vacuum Developed

· Optimized clearance and continuous compression ensures 0.0075torr vacuum degree with a single pump

Highly Superior Corrision Resistance

· Coating material provides excellent corrosion resistance
· Process specific coatings or platings available
· Enhanced Corrosion Resistance by the gas ballast

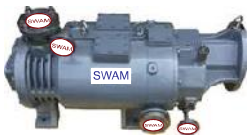
In-Built Cooling Effect

· Hydrodynamic spiral jacket design ensures Excellent heat transfer efficiency
· Maintains optimum pump-inside temperature

Energy Effect Saving on power

· 30% power saving by the variable pitch screw design
· No extra cooling gas required

SVP160



SVP310

SVP410

SVP810

SVP1600

SVH-Series

Hydrodynamic Spiral Jacket Cooling Mechanism

· Cooling alongside screws through Jacket :
Integral heat Exchanger Philosophy for better heat exchange

· No extra cooling gas required in order to get reduced exhaust temperature and to prevented pump seizure.

· Direct cooling as standard
(External heat Exchanger as an Option)

12. Reliable seal design

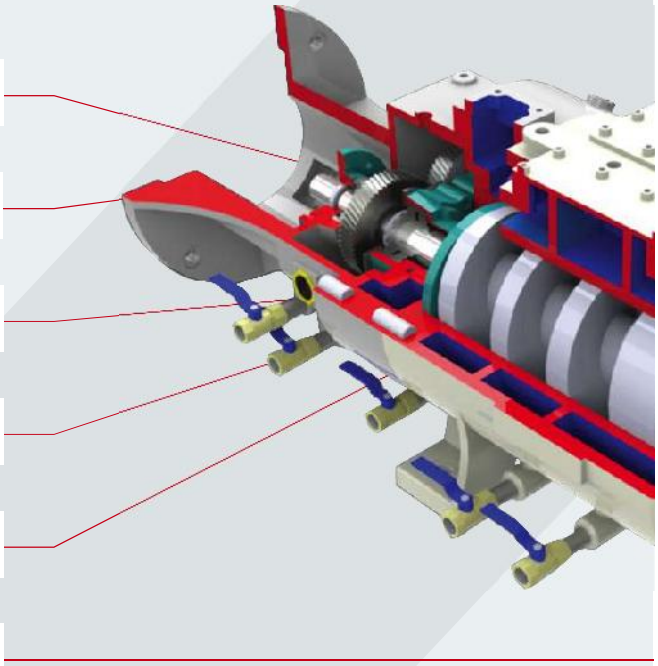
11. IEC Flange Installation

10. Gear Oil Coolant Jacket

9. Smooth emission structure

8. Spiral coolant jacket

7. Reliable structure



1. Gas ballast

- Prevent condensation of corrosive vapor
- Reducing explosive atmosphere

2. Venting nozzle

- Ensures smooth drain of the coolant jacket

3. Vacuum degree

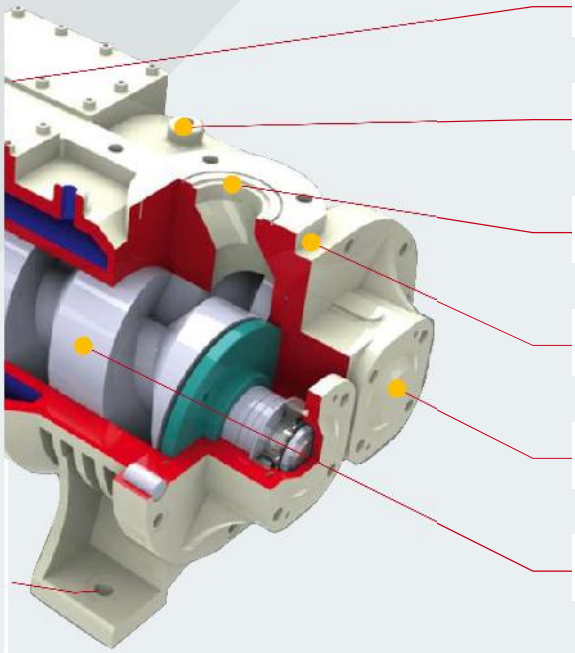
- Reaches the maximum vacuum degree 0.0075torr
- Increase pumping volume from high vacuum

4. Flushing nozzle provision

- Inlet purge nozzle composition
- Steam flushing nozzle composition
- Solvent flushing nozzle composition

5. Applied step-by-step compression

- Maintains stable temperature inside the pump by step-by-step compression
- 30% power saving by the variable pitch screw design
- No extra cooling gas required
- Maintains low oil temperature



1. Gas ballast nozzle installation
2. Vent nozzle installation
3. Vacuum degree improvement
4. Flushing nozzle installation
5. Grease leakage prevention
6. Applied step-by-step compression screw rotor

6. Reliable structure

- Sturdy structure design life for 20 years
- Ensures low vibration with wide space

7. Spiral coolant jacket

- Hydrodynamic spiral jacket design ensures Excellent heat exchange efficiency
- Maintains optimum pump-inside temperature

8. Smooth emission design

- Quick exhaust design Superior liquid handling ability
- Pulsation reduction of gas emission

9. Gear Oil Coolant design

- Maintains low oil temperature
- Oil leakage prevention by low temperature and low pressure
- Maintaining long life time

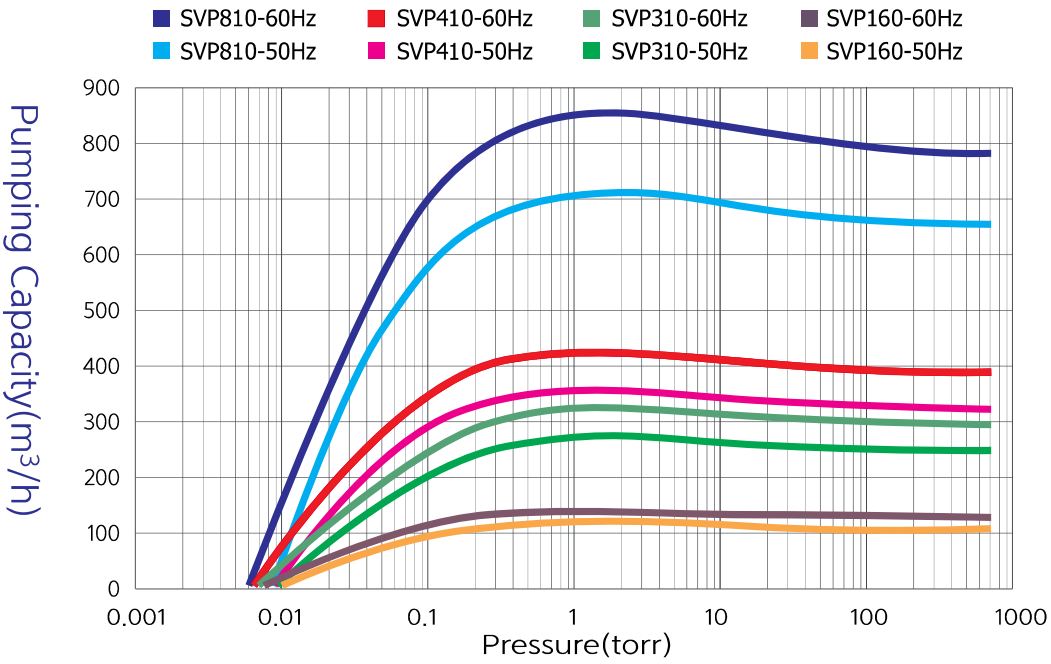
10. IEC Flange Installation

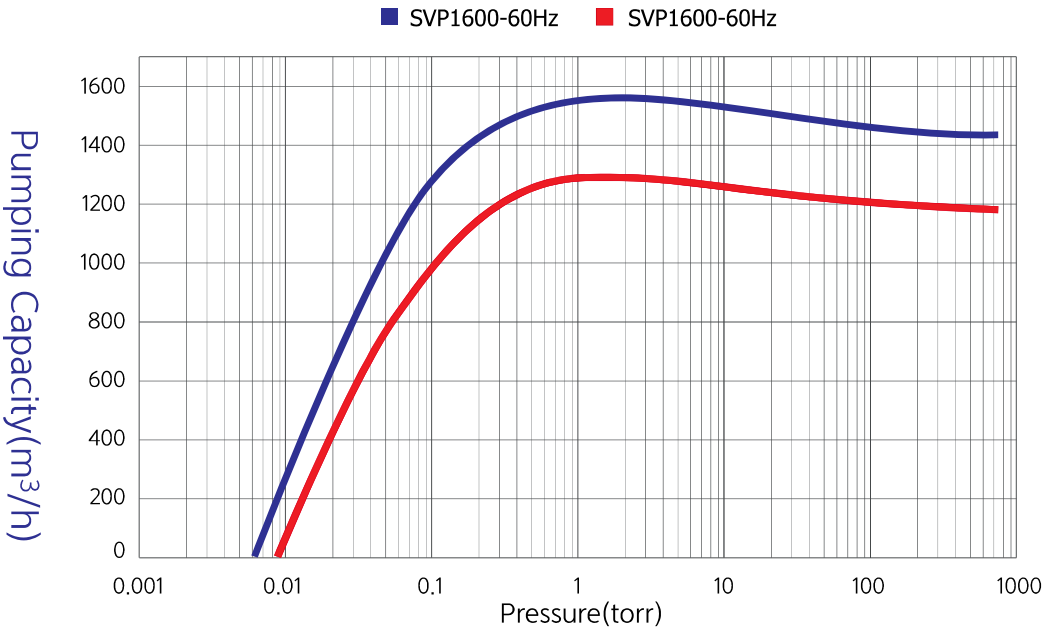
- Easy installation and replacement
- Rib enhancement for deformation and vibration prevention

11. Reliable seal structure

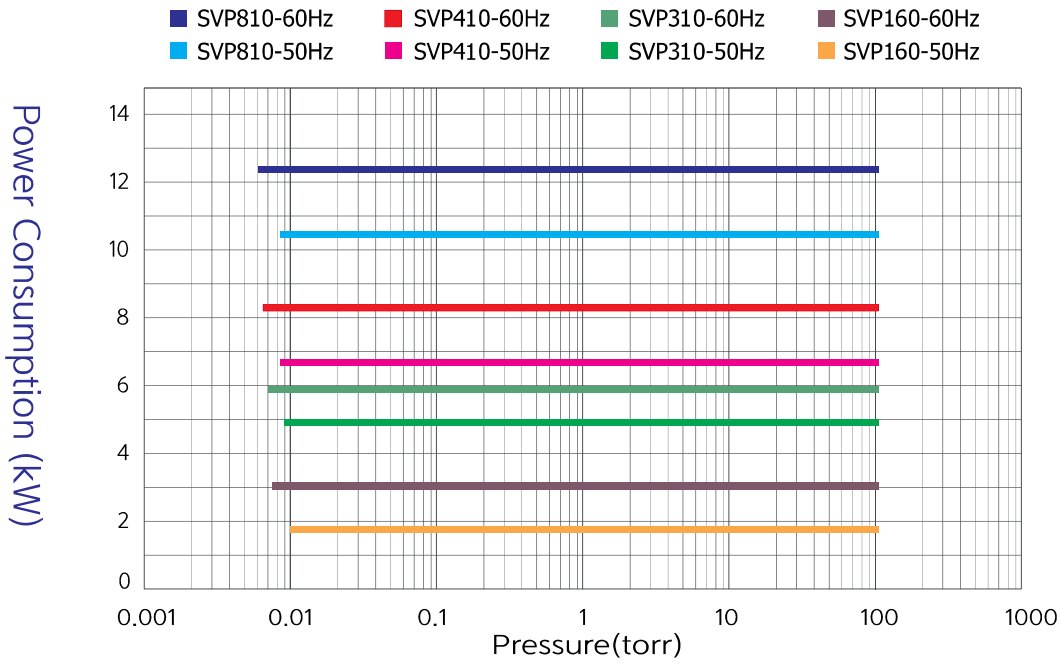
- Mechanical seal and lip seal + gas purge applied
- Mounted with a dry vacuum pump dedicated mechanical seal
- Helps to maintain gear oil, process materials and gas tight by applying gas purge with appropriate pressure

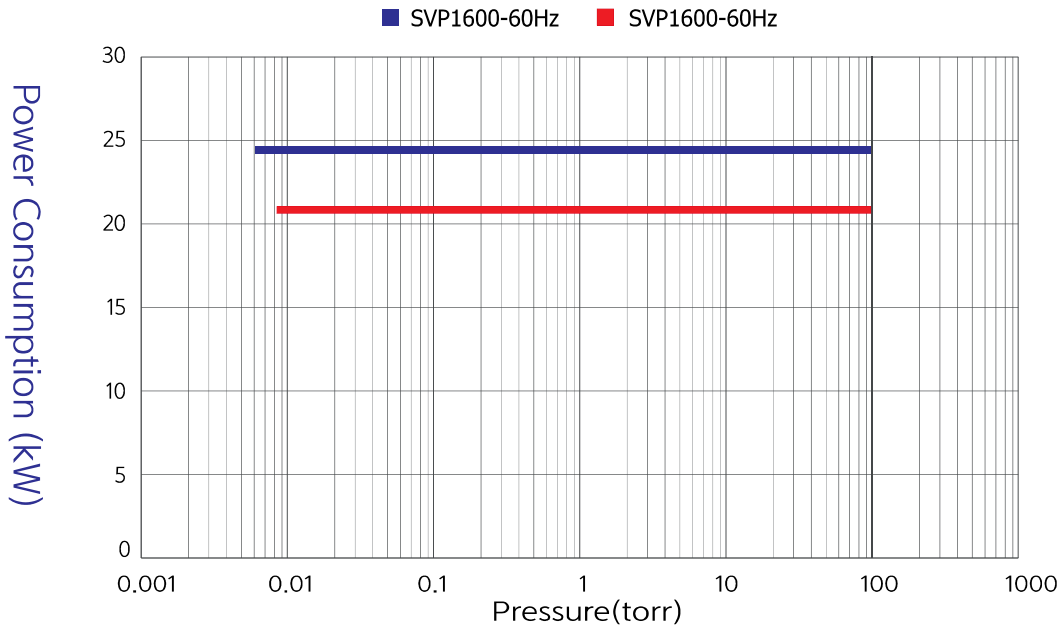
Pumping Capacity





Power Consumption





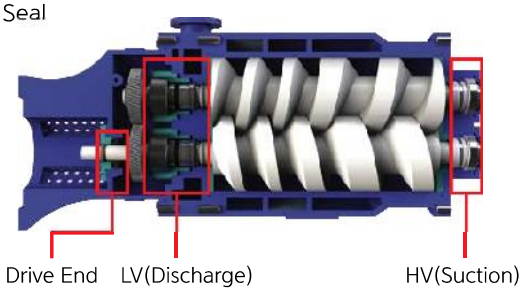
Technical Data

Model		SVP160	SVP310	SVP410	SVP810	SVP1600
	m3/hr	110/130	250/300	330/400	660/800	1250/1500
Ultimate pressure						
without Gas Ballast	torr	7.5 X 10-3	7.5 X 10-3	7.5 X 10-3	7.5 X 10-3	with Gas Ballast
	torr	0.01	0.01	0.01	0.01	0.01
Motor power(50/60Hz)						
Power Requirement	kW	3.7	7.5	11	15	30
Power Consumption	kW	1.8/3.0	5.0/6.0	7.0/8.6	10.2/12.8	22.5/25.5
Rotation(50Hz/60Hz)	rpm	2,900/3,500	2,900/3,500	2,900/3,500	2,900/3,500	2,900/3,500
Process Connection						
Inlet Connection	JIS(ASME)	40A(1 ½")	50A(2")	65A(2 ½")	100A(4")	125A(5")
Outlet Connection	JIS(ASME)	40A(1 ½")	40A(1 ½")	50A(2")	65A(2 ½")	80A(3")
Cooling water						
Max. Supply Pressure	Barg	7	7	7	7	7
Pressure Drop	Bar	1.0	1.0	1.0	1.0	1.0
Flow Rate	Liter/min	5~10	10~15	10~15	15~20	36~40
Temperature	℃	5~35	5~35	5~35	5~35	5~35
Connection	PT(JIS)	½"(15A)	½"(15A)	½"(15A)	½"(15A)	1"(25A)
Lubricant						
Gear Oil Type		Shell T-68	Shell T-68	Shell T-68	Shell T-68	Shell T-68
Bearing Grease Type		Mobil 1	Mobil 1	Mobil 1	Mobil 1	Mobil 1
Seal Type						
High Vacuum(HV) Seal		Single Lip Seal + Single Lip Seal + Single Lip Seal				
Low Vacuum(LV) Seal		Lip Seal & Mechanical Seal + Gas Purge Seal				
Noise Level(50/60Hz)	dB	79/85	79/85	79/85	79/85	79/85
Vibration (max.)	mm/s	1.8 (4.5)	1.8 (4.5)	1.8 (4.5)	2.8 (4.5)	2.8 (4.5)
Weight(Bare Shaft)	kg	190	290	370	580	900

- **HV(Suction)** : Single Lip Seal + Single Lip Seal + Single Lip Seal
- **LV(Discharge)** : Lip Seal & Mechanical Seal + Gas Purge Seal
- **Drive End** : Oil Seal

Bearings

- **HV(Suction)** : Roller Bearing
- **LV(Discharge)** : Angular Double Ball Bearing
- **Drive End** : Single Ball Bearing



SVP series
Screw Vacuum Pump

Salient Design features

Superior & Reliable seal design

- Triple Sealing System with Lip seal + Gas Purge + Mechanical Seal
- High performance mechanical seal specifically designed for dry vacuum pump
- Optimum gas purge operation enhanced leak tightness

Vacuum System for Harsh Process

Excellent discharge performance

- Quick exhaust structure
- Superior liquid handling ability
- Pulsation reduction of gas emission

Gas ballast nozzle installation

- Prevent condensation of corrosive vapor
- Reducing explosive atmosphere

Vacuum Pump for Chemical Process

Gear Oil Coolant Jacket

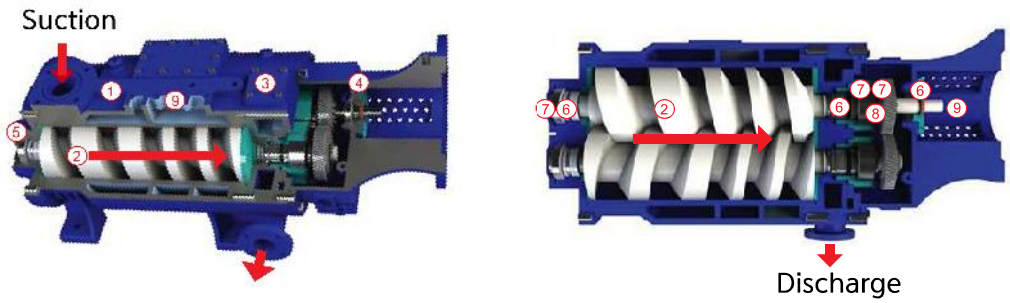
- Maintains low oil temperature
- Oil leakage prevention by low temperature and low pressure
- Maintaining long life time

Benefits & Advantages

- No Contamination of Process Stream
- Deeper Vacuum and More Flexible Operation
- No Effluent, No Pollution, No Waste Disposal Costs
- Lower Maintenance Costs
- Immediate Solvent Recovery at Pump Exhaust
- Lower Total Cost of Ownership – Lower Utility Costs
- No variation in vacuum resulting from the changing of seasons and Utility

Vacuum Pump for Corrosive Gas

Material of Construction



1. Casing
2. Screw
3. Front End Plate
4. Front End Cover
5. Rear End Plate
6. Seals
7. Bearings
8. Timing Gears
9. Shaft

①Casing, ③Front End Plate : Ductile Iron(FCD 400)
Internal : Teflon Coating
External : Painting

②Screws : Ductile Iron(FCD 400)
External : Teflon Coating

Coatings :
PTFE Coating : 15μm Thickness
PFA Coating : 40μm Thickness
NIFA (Nickel Plated + Teflon Coating)

④Front End Cover : Ductile Iron(FCD 400)
+ External Painting

⑤Rear End Plate : Ductile Iron(FCD 400)
+ External Painting

Check Valve : Stainless steel body + Teflon Seat

Seal Material

- Lip Seal : PTFE & Graphite(or Polyamide)
  Mix in Stainless Steel
- Mechanical Seal :
  Rotor : Stainless Steel Bellows with Carbon #5 Face
  Stator : Stainless Steel with Tungsten Carbide Coating
  O-ring : Viton or Kalrez
- Oil Seal : Viton

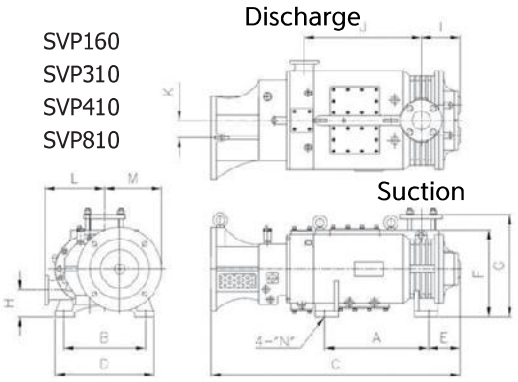
Lubrication

- Protecting Seals, Bearings & Gears
  Gear Box : Shell Turbo Oil T68
  Rear end bearing : Mobile 1 Grease

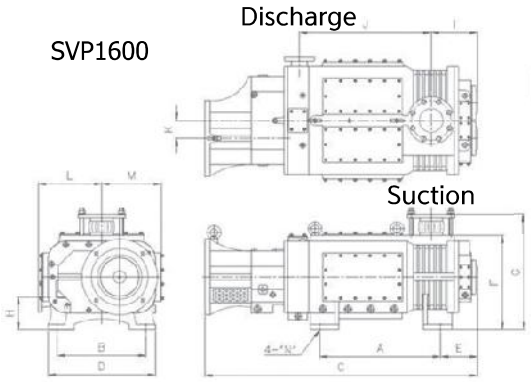
Dimensions

Bare Shaft Dimensions

SVP160
SVP310
SVP410
SVP810



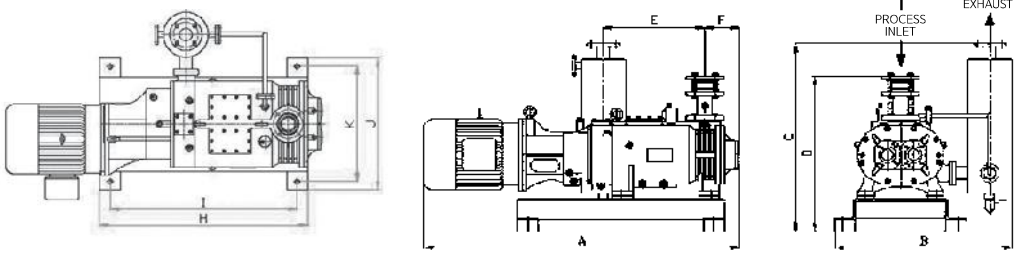
SVP1600



Unit mm

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight
SVP160	241	280	682	321	92	293	341	70	108	287	47	175	172	14	190
SVP310	395	334	946	398	126	354	410	112	154	439	58	225	208	19	290
SVP410	437	344	1046	414	133	364	428	112	163	492	73	250	239	19	370
SVP810	558	380	1226	482	148	420	505	136	203	599	73	285	248	22	580
SVP1600	640	470	1446	570	196	500	610	175	246	698	95	335	316	27	900

Exhaust Silencer Installation



Unit mm

Model No.	A	B	C	D	E	F	G	H	I	J	K
SVP160	1002	647	780	456	287	108	320	700	600	540	460
SVP310	1322	825	855	526	439	154	405	882	782	624	544
SVP410	1533	855	856	695	492	167	430	1000	900	634	554
SVP810	1712	921	883	786	599	203	473	1030	930	680	600
SVP1600	2030	1164	1390	925	698	246	610	1385	1285	790	710

Process Application

	SVP-Series Screw Dry Pump	Liquid Ring Pump (LRVP)	Steam Ejector
Distillation	▣ ●	▣ ●	▣ ●
Evaporation	▣ ●	■ ●	■ ●
Reaction	▣ ●	▣ ●	■ ●
Drying	▣ ●	■ ●	■ ●
Pervaporation	▣ ●	▣ ●	
Degassing	■ ●	▣ ●	▣ ●
Molecular distillation	▣ ●	■ ●	■ ●
Concentration	▣ ●	■ ●	■ ●
Crystallization	▣ ●	▣ ●	■ ●
Filtration	■ ●	▣ ●	
Impregnation	▣ ●	▣ ●	
Adsorption	▣ ●	▣ ●	
Absorption	▣ ●	▣ ●	
Desorption	▣ ●	▣ ●	
Deodorization	▣ ●	▣ ●	▣ ●
Dehydration	▣ ●	▣ ●	▣ ●
Chemical Process	▣ ●	▣ ●	▣ ●
Pharmaceutical Process	▣ ●	▣ ●	▣ ●
Petrochemical Process	▣ ●	▣ ●	▣ ●
Food Process	▣ ●	▣ ●	
Biofuels	▣ ●	▣ ●	▣ ●
Solvent Recovery	▣ ●	■ ●	
Vapor Recovery Unit(VRU)	▣ ●	■ ●	
Coating	▣ ●	■ ●	■ ●
Vacuum Casting	▣ ●	■ ●	■ ●
Central Vacuum	▣ ●	▣ ●	

Process application : Highly applicable ▣ Applicable ■ Energy consumption : Excellent ● Poor ● Very poor ●

SWAM Vacuum


PLANT - I


PLANT - II


PLANT - III


PLANT - IV

SWAM PNEUMATICS PVT. LTD.

(ISO-9001:2008 Quality Certified)

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