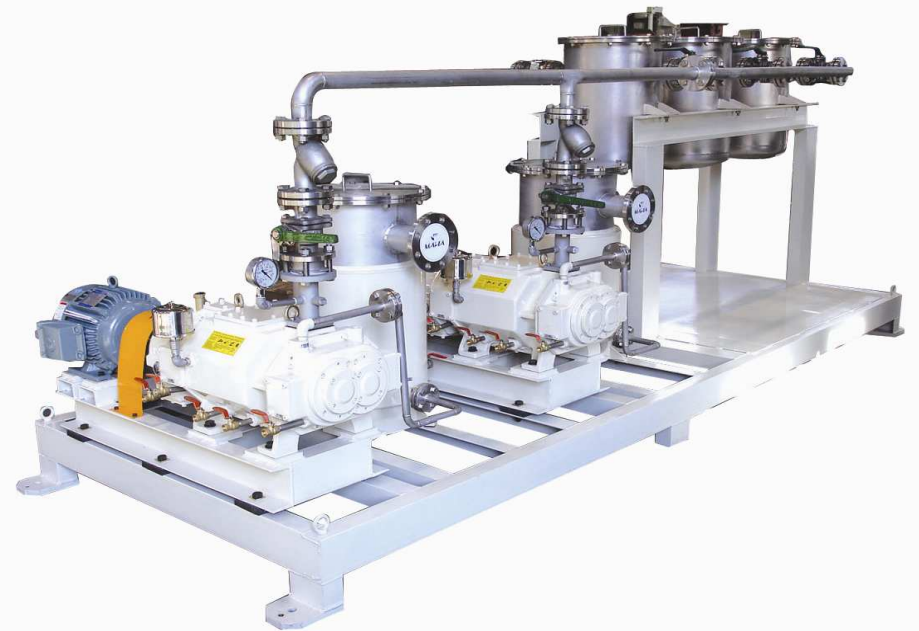




# INDUSTRIAL DRY SCREW PUMPS

## Introduction and Specifications





# Features: SDS / SBDS Series Dry Screw Vacuum Pumps

## ❖ Features

- No Oil or sealing water in the vacuum stream.
- Environmentally friendly and suitable for chemical gas process.
- Equipped with all necessary switches and controls for automatic or manual operating.
- Maintain constant low pressure against high gas flow, suitable for high vapor or moisture.
- Small footprint vs. pumping capacity saves space.
- Configurable capacity from (90 ~10,000 m<sup>3</sup>/hr)/ (60 to 6,000 CFM)
- Simplicity of design provides for easy repair and maintenance.
- No metal-to metal contact between the rotors, or between the rotors and casing.
- Non-contact design ensures long pump life.
- Durable timing gear with high density materials minimized noise levels
- Dynamic balancing provides smooth operation.



# Dry Screw Vacuum Pump Introduction: Page 1 of 2

## 1. Low Operating Cost

Virtually no cost for changing oil and virtual elimination of HAZMAT disposal fees

## 2. Oil & Water Free Operation

No oil or water is introduced to the vacuum stream of the pump

## 3. Solid Handling Capability

Single stage design enables easy discharge of particulate and eliminates residual build-up.

## 4. Simple Design & Long Pump Life

No metal-metal contact between the screws or casing ensures long pump life and minimum wear. Due to its simplicity of design maintenance cost are reduced.

## 5. Low Vibration & Low Noise Level

Screw rotational speed design results in low vibration and low noise levels.



## Dry Screw Vacuum Pump Introduction: Page 2 of 2

### 6. Clean Operation

Dry shaft-seal design prevents water or oil contamination and insures clean operation.

### 7. High Volume Efficiency

Screw type rotors have high volume efficiency and provide constant vacuum.

### 8. Corrosion Resistant Design

Teflon anti-corrosion coating is applied to all parts in contact with process gases.

### 9. Mechanical Seal

Mechanical shaft seals and lip seal isolate bearings from process gases.

### 10 . Booster/Pump Systems

Provide higher pumping speeds and lower ultimate pressures. (SBDS SERIES)



# Dry Screw Vacuum Pumps Design Features:

## Seals

Double lip or bellows mechanical seals on internal locations.  
Mechanical seals on the shaft.

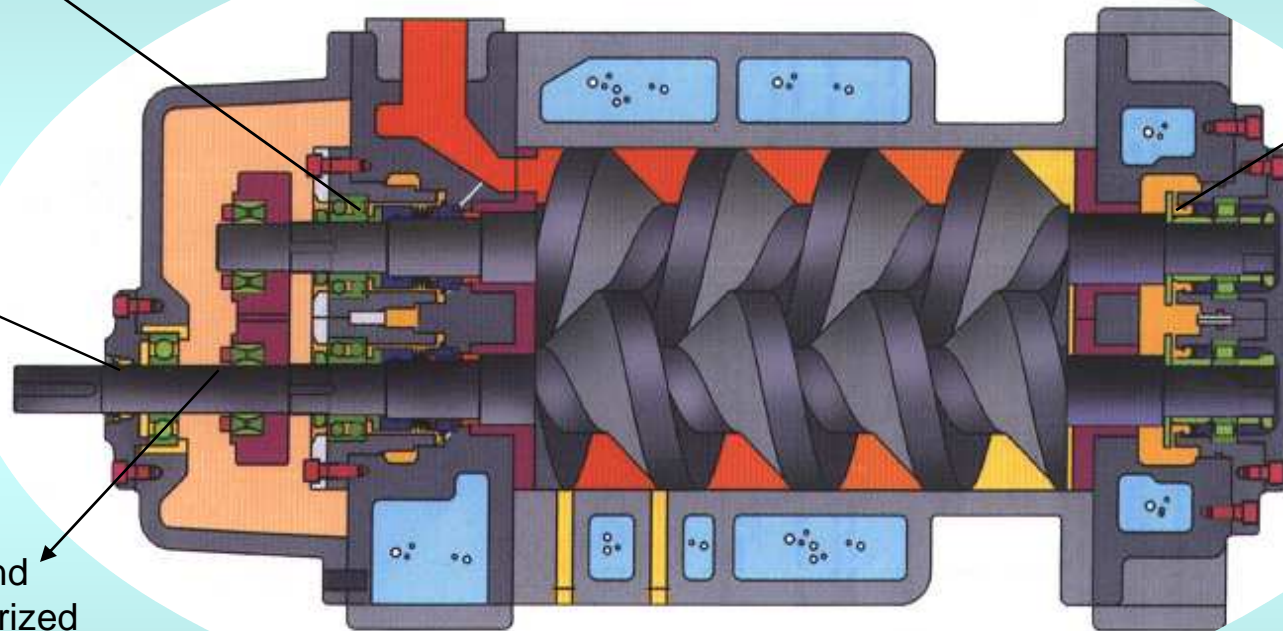
## Over Sized Bearings

Double row ball bearings on gear end.  
Single ball bearings on shaft. Roller bearing on the idler end of drive shaft.

## Gear Case Seals

## Timing Gear Set

Matched helical ground hardened 8620 carburized steel for quiet operation and maximum life



## Lip Seals

**Water cooled end plates and casing.**  
Cast-in water jackets in each end plate eliminate the need for costly lube systems typically needed for high temperature applications.

## Screw Design

Teflon anti-corrosion coating is applied to all parts in contact with process gases.  
Fewer parts, easier maintenance.



# SDS Series: Dry Screw Vacuum Pump Specifications

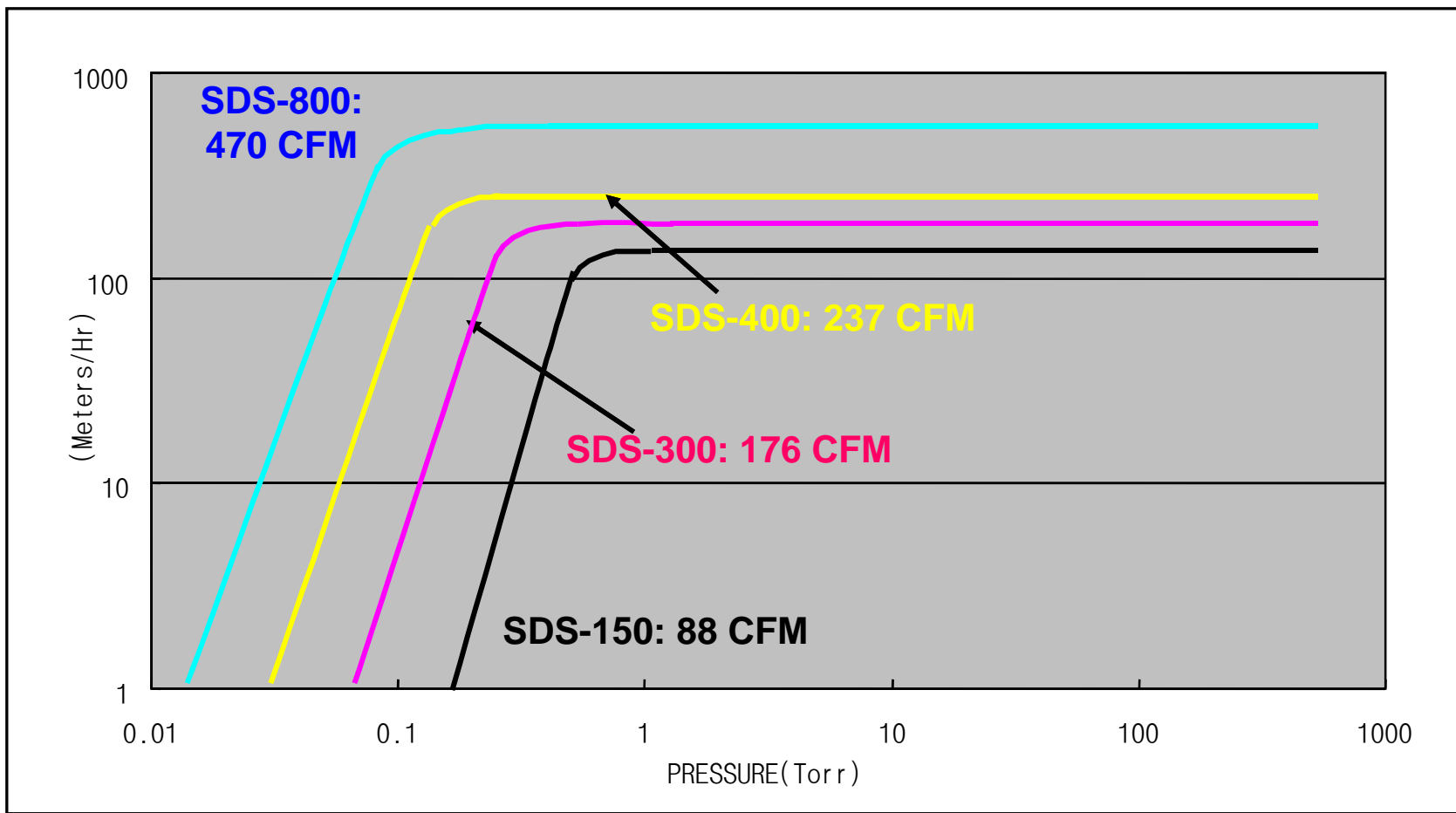
Model		SDS-150	SDS-300	SDS-310LP	SDS-400	SDS-600LP	SDS-800
		60Hz	60Hz	60Hz	60Hz	60Hz	60Hz
Specification							
Capacity: CFM		88	176	182	237	353	470
Ultimate Pressure (Torr)		0.30	0.08	0.00075	0.05	0.00075	0.03
Power (Kw) (50/60Hz)		(3.7/5.5)	(7.5/11)	(7.5/11)	(11.5/15)	(11.5/15)	(19/22)
Port Size	Inlet	40	50	50	65	65	100
	Outlet	40	40	40	50	50	65
Cooling Water (L/Min)		2	3.5	3.5	7	7	10
Gear Oil		1.5	1.7	1.7	2.5	2.5	4
Rotation Speed: 50 / 60 Hz		2900 / 3450					
Corrosion Resistant Coating		PTFE / PFA					
Casing and Screw Material		GCD45					
Weight lbs. Lbs. (kg)		507 (230)	787 (350)	787 (350)	948 (430)	948 (430)	1388 (630)

- Standard parts: Silencer, Coupling or Pulley, Safety Cover, Base Frame, Motor, Vacuum Check Valve, Vacuum Gauge
- Options: Cooler, Separator, Temperature Switch, N<sub>2</sub> Purging Line, Control Panel



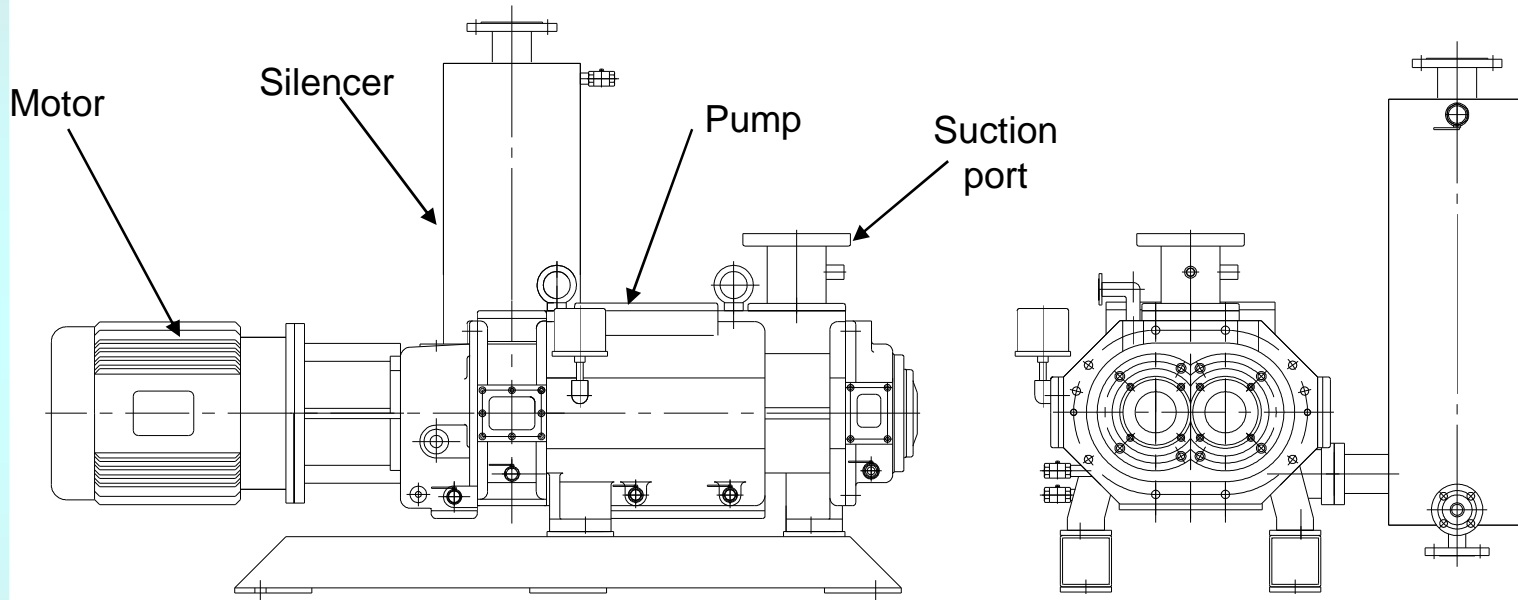
# SDS Series Single Stage Performance Curves: 60 Hz

## ❖ Performance Curve (60Hz)





# SDS Dry Screw Vacuum Pump: General Arrangement

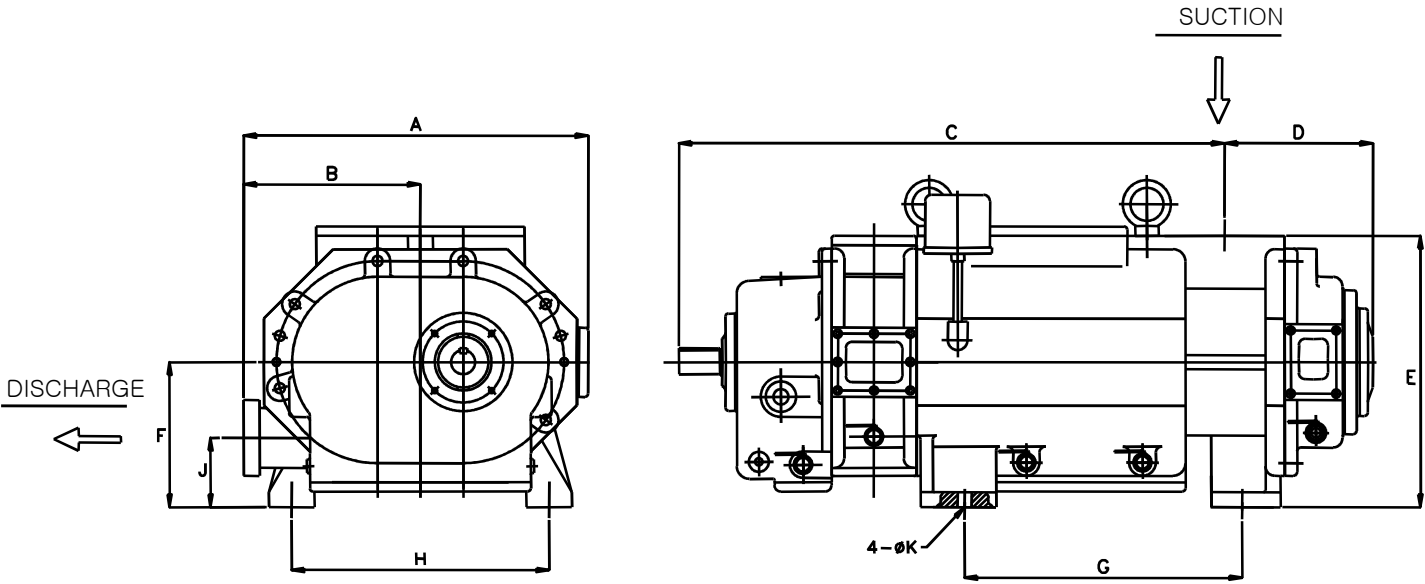


\* C-flange type \*





# SDS Dry Screw Vacuum Pump Dimensions: Millimeters

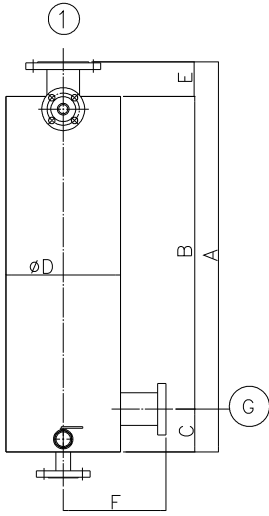


UNIT mm

MODEL	A	B	C	D	E	F	G	H	J	K
SDS-150	367	180	616	173	329	185	258	280	98	20
SDS-300	429	220	722	200	357	195	338	310	104	20
SDS-400	459	237	776	200	371	206	358	340	100	20
SDS-800	546	280	865	235	445	230	440	430	110	22



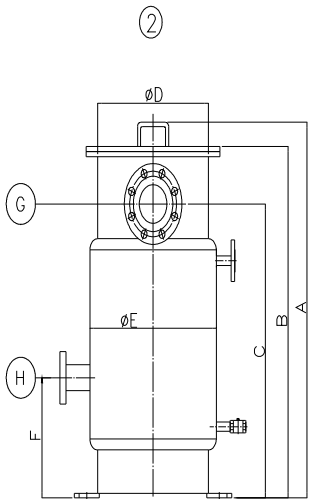
# SDS Accessory Dimensions: Millimeters



## 1. SILENCER

UNIT: mm

	A	B	C	D	E	F	G
SDS-150	730	550	100	216	80	200	40
SDS-300	730	550	100	216	80	200	40
SDS-400	830	650	100	216	80	200	50
SDS-800	910	730	100	267	80	240	65
Material	Stainless Steel						



## 2. SEPARATOR

UNIT: mm

	A	B	C	D	E	F	G	H
SDS-150	862	807	673	355	406	265	80	40
SDS-300	862	807	673	355	406	265	80	40
SDS-400	862	807	673	355	406	265	80	50
SDS-800	862	807	673	355	406	275	80	65
Material	Stainless Steel							



# SBDS Series: Dry Screw Vacuum Pump Specifications:

## ❖ SBDS Series: Multiple Stage, 353 to 5,585 CFM, 20 to 2 MiliTorr

Model	Nominal Pumping Speed	Ultimate Vacuum	Intake Flange	System Stages
SBDS-850	850 m <sup>3</sup> /hr	~0.02 Torr	DN100	2 stage System
SBDS-1300	1300 m <sup>3</sup> /hr	~0.02 Torr	DN150	2 stage System
SBDS-2600	2600 m <sup>3</sup> /hr	~0.002 Torr	DN200	3 stage System
SBDS-3700	3700 m <sup>3</sup> /hr	~0.002 Torr	DN200	3 stage System
SBDS-5000	5000 m <sup>3</sup> /hr	~0.002 Torr	DN250	3 stage System
SBDS-7000	7000 m <sup>3</sup> /hr	~0.002 Torr	DN300	4 stage System
SBDS-10000	10000 m <sup>3</sup> /hr	~0.002 Torr	DN350	4 stage System

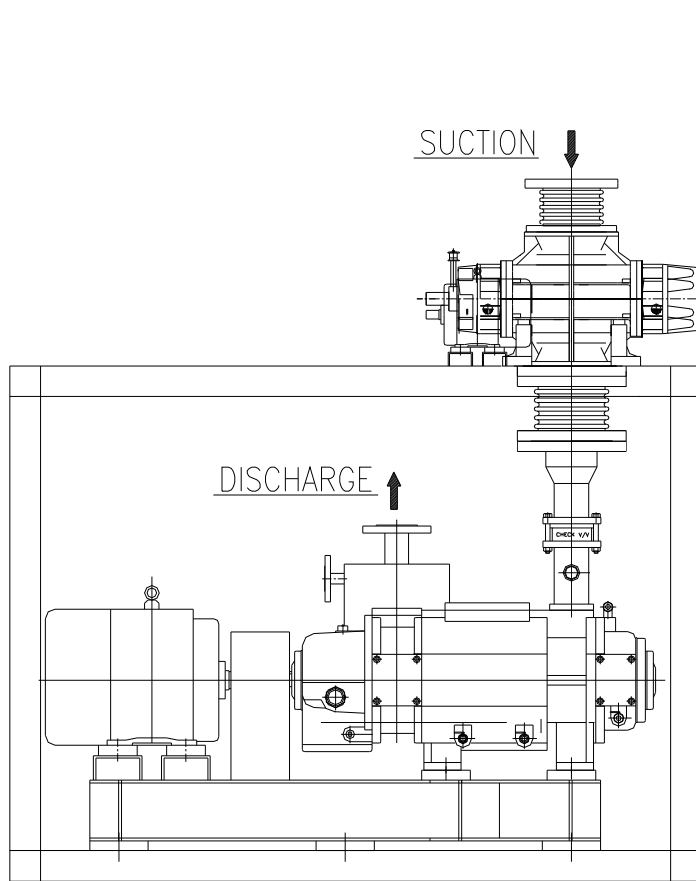
## SBDS Application and Materials of Construction

Configuration	Mech. Booster+Dry Screw Vacuum Pump	
Application	Condensation steam, moisture disposal and High volume process	
Materials of Construction	Dry Screw Pump; GCD45	Booster; Ductile
Standard Seals	Screw Pump; Mechanical Seals & Lip seals Piston-ring	Booster; Labyrinth
• 2 stage System: Dry Pump+M/Booster	* 3 stage System: Dry Pump+M/Booster+M/Booster	

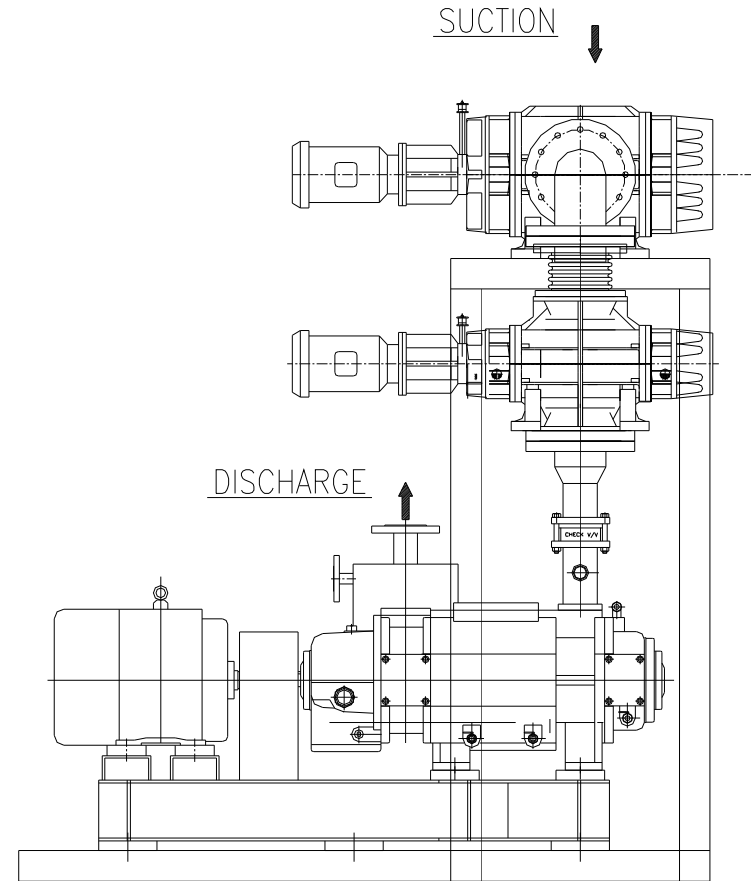
• 4 stage System: Dry Pump+M/Booster+M/Booster+M/Booster \* M/Booster= Mechanical Booster



# SBDS Series Vacuum System: General Arrangement



2 stage System  
(Dry Screw Vacuum Pump+M/Booster)



3 stage System  
(Dry Screw Vacuum Pump+M/Booster+M/Booster)