

For Harsh Process

**Kashiyama**  
Vacuum Solutions

# SDE-TX Series

## SDE Series Focused on Harsh Process Durability

- 01 FEATURE** Vertical Screw;  
Durable against Deposit.
- 02 FEATURE** Material & Temp. setting;  
Durable against Corrosion.\*1



### Harsh Process Application Example

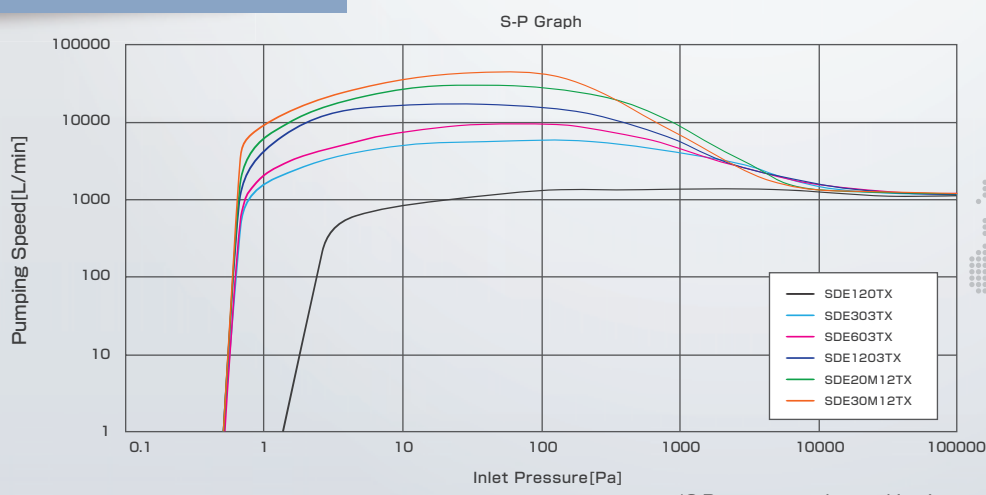


### Major Products

Spec./ Products	SDE120TX	SDE303TX	SDE603TX	SDE1203TX	SDE20M12TX	SDE30M12TX
Max. pumping speed[L/min]*2	1,500	5,000	10,000	20,000	30,000	45,000
Ultimate pressure[Pa]*2	1.3	0.5				
Supply voltage(50/60Hz)	3Phase AC200 ~ 220V, 380 ~ 480V					
Dimensions[mm]W*H*L*3	370*501*690	400*905*760	400*905*760	400*905*900	460*960*900	500*960*1020

\*1) Contact us about applicable gas. \*2) Without N2 purge. \*3) Package size. Dimensions vary by specification.  
\* Contact us about international standard compliance. Spec. & name of products are subject to change without prior notice.

### S-P Curve



\*S-P curves vary by combination.

### Contact us

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# SDE-X Series Energy Saver

**Energy saving model;**  
Succeeding standard type's durability against harsh process

**01**  
FEATURE

**Power consumption; 1.3kW\*<sub>1</sub>**  
[54% reduction against conventional type]

**02**  
FEATURE

**Durable to wide range of process**  
by various settings.



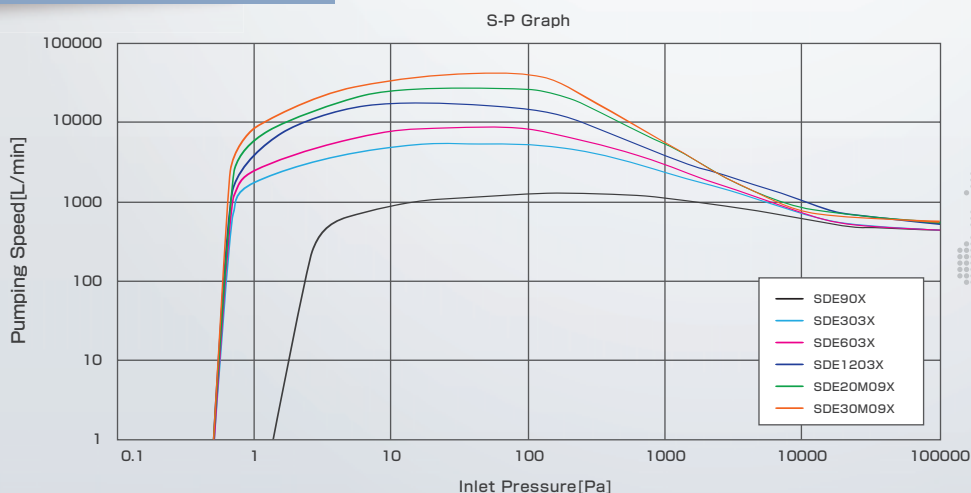
## Major Products

Spec. / Products	SDE90X	SDE303X	SDE603X	SDE1203X	SDE20M09X	SDE30M09X
Max. pumping speed[L/min]* <sub>2</sub>	1,300	5,000	10,000	20,000	30,000	45,000
Ultimate pressure[Pa]* <sub>2</sub>	1.3	0.5				
Supply voltage(50/60Hz)	3Phase AC200 ~ 220V, 380 ~ 480V					
Power consumption[kW]* <sub>1</sub>	1.3	1.5	1.6	2.0	2.6	2.8
Dimensions[mm]W*H*L* <sub>3</sub>	370*557*690	400*905*760	400*905*760	400*905*900	460*960*900	500*960*1020

\*1) Approx. value at ultimate pressure. \*2) Without N<sub>2</sub> purge. \*3) Package size. Dimensions vary by specification.

\* Contact us about international standard compliance. Spec. & name of products are subject to change without prior notice.

## S-P Curve



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# SDE Series

Standard type for harsh process

**01**

FEATURE

Available up to  
200kL/min.

**02**

FEATURE

Best for  
large wafer and FPD.

**03**

FEATURE

Durable to  
various processes.



## Major Products

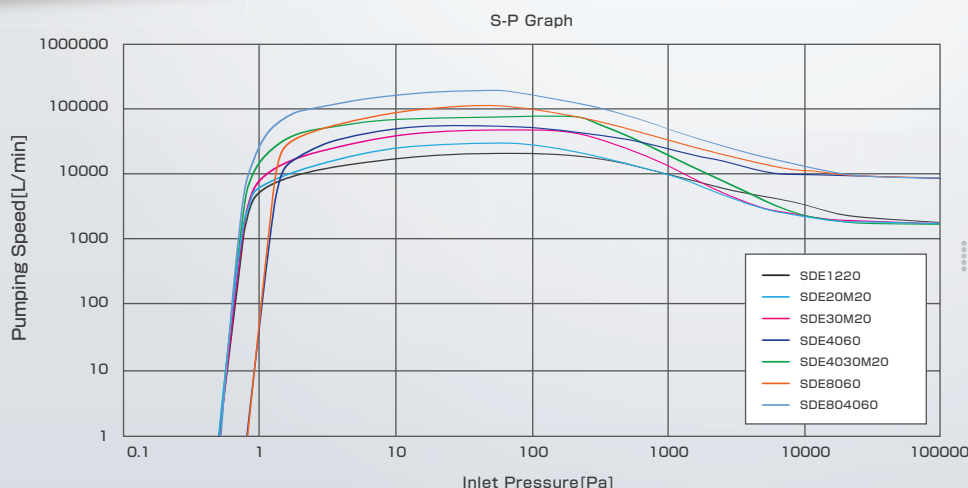
Spec. / Products*1	SDE1220	SDE20M20	SDE30M20	SDE4060	SDE4030M20	SDE8060	SDE804060
Max. pumping speed [L/min]*2	20,000	30,000	50,000	60,000	80,000	120,000	190,000
Ultimate pressure [Pa]*2	0.5			0.8	0.5	0.8	0.5
Supply voltage (50/60Hz)	3Phase AC200 ~ 220V, 380 ~ 480V						
Dimensions [mm] W*H*L*3	400*780*930	450*950*1000	450*950*1000	750*1200*1600	800*1580*1320	850*1220*1600	1000*1980*1850

\*1) Smaller than 20,000L/min pumps are also available. \*2) Without N2 purge.

\*3) Package size. Dimensions vary by specification.

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# SDL Series

**01**

FEATURE

## Available to large size wafer & FPD

Large capacity available by combination.  
Larger than 150kL/min also available on demand.

**02**

FEATURE

## Shorter cycle-time

Large capacity around atm. pressure can achieve high speed pumping best for large L/L chamber.



Pumps for solvent evacuation are also lined-up

## Major products

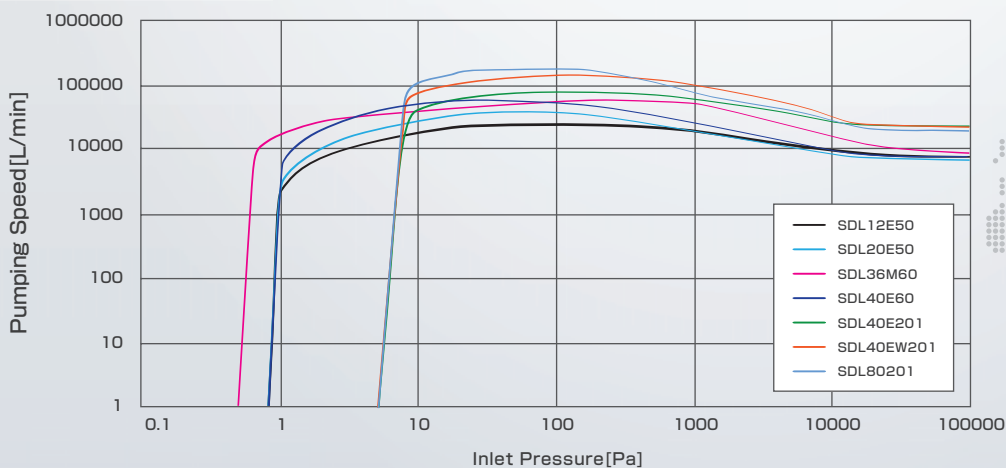
Spec. / Products	SDL12E50	SDL20E50	SDL36M60	SDL40E60	SDL40E201	SDL40EW201	SDL80201
Max. pumping speed[L/min]*1	25,000	50,000	60,000	70,000	80,000	150,000	170,000
Ultimate pressure[Pa]*1	0.8		0.5	0.8	5.0		
Supply voltage (50/60Hz)	3Phase AC200 ~ 220V, 380 ~ 480V				3Phase AC380 ~ 440V		

\*1) Without N2 purge.

\* Contact us about international standard compliance. Spec. & name of products are subject to change without prior notice.

## S-P Curve

S-P Graph



\*S-P curves vary by combination.

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# MU-X Series

Power Consumption 0.35kW

Extremely Small Footprint

01  
FEATURE

Roots dry pump achieved smallest energy consumption & footprint in the category.

02  
FEATURE

Applicable for various tools.

03  
FEATURE

Best for clean pumping such as L/L and transfer chamber, etc.



## Major Products

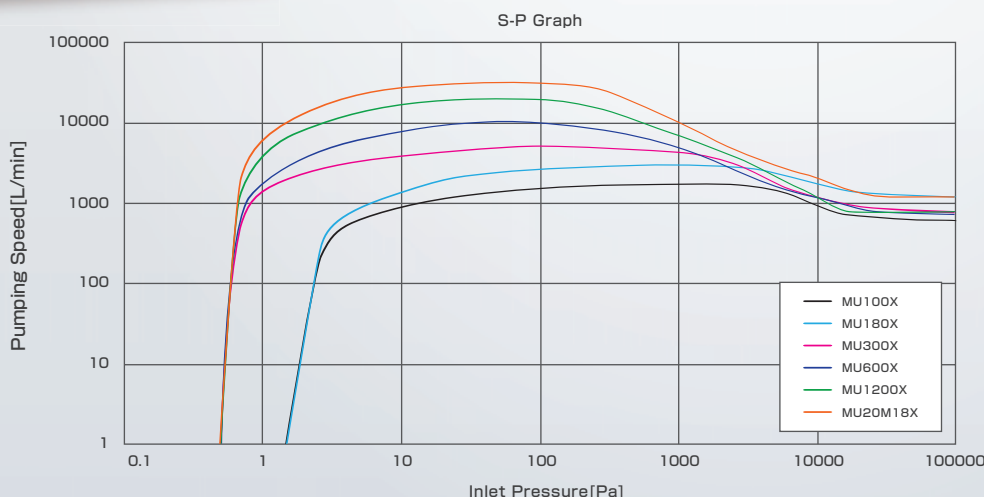
Spec. / Products	MU100X	MU180X	MU300X	MU600X	MU1200X	MU20M18X
Max. pumping speed[L/min]*1	1,660	3,000	5,000	10,000	20,000	30,000
Ultimate pressure[Pa]*1	1.5		0.5			
Supply voltage(50/60Hz)	3Phase AC200 ~ 220V*2					
Power consumption[kW]*3	0.35	0.5	0.55	0.6	0.7	1.5
Dimensions[mm]W*H*L*4	230*275*450	280*299*550	230*520*450	230*520*530	275*580*625	500*950*1100
Mass[kg]	60	95	100	120	165	340

\*1) Without N2 purge. \*2) Contact us for other voltage options. \*3) Approx. value at ultimate pressure. \*4) Package size.

\* Contact us about international standard compliance. Spec. & name of products are subject to change without prior notice.

\* Contact us about large capacity pumps.

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# - "More than" Low Power- MU-P/H Series

**Kashiyama**  
Vacuum Solutions

High Temp., More Purge

**Process Durability**

Smallest Power Consumption for Process by roots

**Power Consumption 0.7kW**

**01**

FEATURE

Roots dry pump good in process durability and low power consumption.

**02**

FEATURE

Applicable to wide range of process from light to medium duty.\*1

**03**

FEATURE

Hot N2 purge available to enhance process durability. [MU-H Series]



## Major Products

Spec. / Products	MU100P/H	MU180P/H	MU300P/H	MU600P/H	MU1200P/H	MU20M18P/H
Max. pumping speed[L/min]*2	1,660	3,000	5,000	10,000	20,000	30,000
Ultimate pressure[Pa]*2	3.0	5.0	0.5			
Supply voltage(50/60Hz)	3Phase AC200 ~ 220V*3					
Power consumption[kW]*4	0.7	1.0	0.9	0.95	1.05	2.0
Dimensions[mm]W*H*L*5	350*360*630	360*408*715	350*520*630	350*520*630	380*655*820	500*950*1100
Mass[kg]	70	130	110	130	185	340

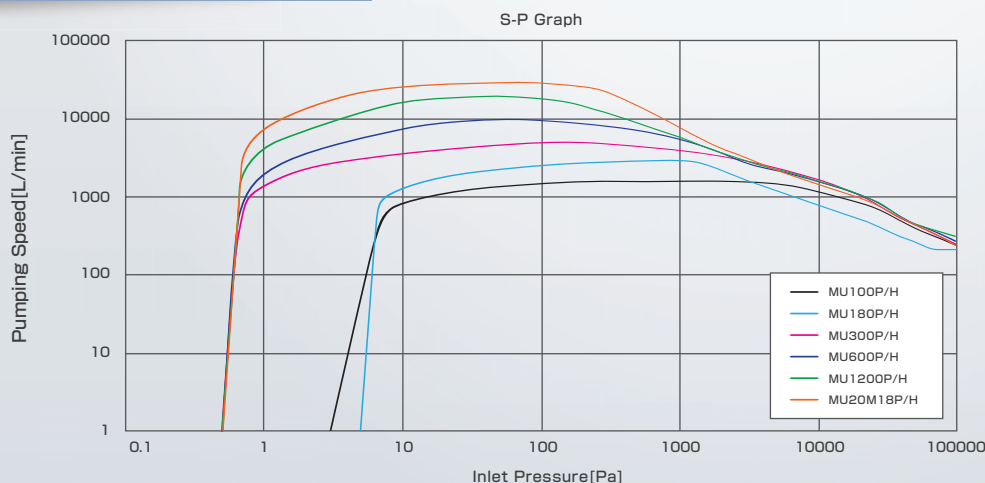
\*1) Contact us about application beforehand. \*2) Without N2 purge. \*3) Contact us for other voltage options.

\*4) Approx. value at ultimate pressure, +0.2kW with Hot N2 purge. \*5) Package size.

\* Contact us about international standard compliance. Spec. & name of products are subject to change without prior notice.

\* Contact us about large capacity pumps.

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# NeoDry Series

01

FEATURE

Maintenance cycle;  
**Once in 3 years!**  
(Approx. when Air/N<sub>2</sub> is used)



02

FEATURE

No Tip-seal replacement,  
No Performance deterioration,  
No Particles!

03

FEATURE

No Oil smoke,  
No chamber contamination!

04

FEATURE

Hassle free to  
replace rotary/  
scroll pumps!

05

Condensation-prone gas,  
like water vapor  
or solvent, available!

06

By virtue of inverter,  
frequency does not affect  
to performance!

07

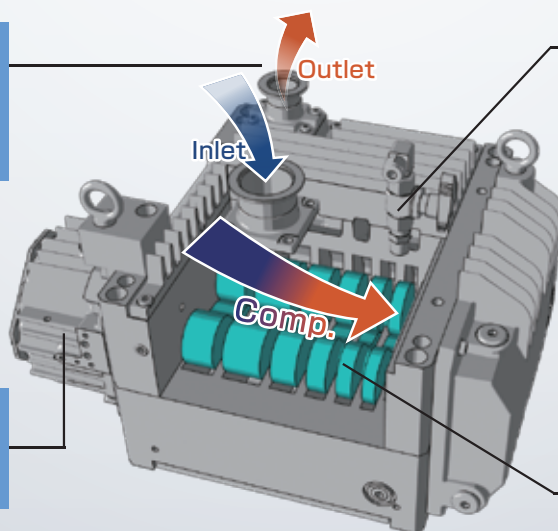
Low noise,  
low vibration!

## Mechanism

Two multi-stage root-rotors rotate without contact,  
compressing gas for exhaust.

No oil in pumping room:  
Dry pumping with "Clean  
exhaust"

No cooling water:  
"Air cooled"



"Gas ballast port" (optional)  
can take gas to reduce  
partial pressure of  
condensation-prone gas,  
and prevent it from  
condensation inside.

Roots rotors rotate  
without contact arising no  
particle.  
"No performance  
deterioration and long life"

## Major Products

Spec./Products	NeoDry7E	NeoDry15E	NeoDry30E	NeoDry36E	NeoDry60E	NeoDry300E
Max. pumping speed[L/min]	110	250	500	600	1,000	5,000
Ultimate pressure [Pa] (Without gas ballast)	5.0	1.0				0.5
Supply voltage(50/60Hz)*1	Single Phase, AC100 ~ 120V Single Phase, AC200 ~ 240V	Single Phase, AC100 ~ 120V Single Phase, AC200 ~ 240V 3Phase, AC200 ~ 240V			Single Phase, AC200 ~ 240V 3Phase, AC200 ~ 240V	
Gas ballast mechanism	Standard accessory	Optional (N2 available)				Standard accessory
Max allowable moisture[g/h] (With gas ballast)	120	250		350	600	
Noise [dB(A)] (Inlet closed)	≤56			≤58	≤60	≤72
Vibration [μmp-p] (Inlet closed)	≤8					
Mass[kg]	19	23	25	54	56	125
Inlet size	NW25			NW40		NW50
Outlet size	NW25					
Dimensions[mm]W*H*L*2	196*219*360	210*250*385	210*250*410	298*275*475	315*275*530	304*575*574

\*1) Contact us for other voltage options. \*2) Package size.

\* Contact us about international standard compliance. Spec. & name of products are subject to change without prior notice.

## Market

- ▶ Vacuum Drying
- ▶ Electrode Drying
- ▶ Vacuum Degassing
- ▶ Vacuum Molding
- ▶ Vacuum Packing
- ▶ Vacuum Filling
- ▶ Suction Conveyance
- ▶ Vapor Deposition
- ▶ Gas Displacement
- ▶ Electron Microscope
- ▶ Accelerator
- ▶ Mass Spectrograph
- ▶ Centrifuge
- ▶ Freeze Dryer
- ▶ Evaporator
- ▶ Backing pump for Turbo
- ▶ Vapor Pumping
- ▶ Solvent Pumping
- ▶ He Pumping
- ▶ Plasma Cleaning etc.

## Our Customers

- ▶ Hokkaido Univ.
- ▶ Tohoku Univ.
- ▶ Gunma Univ.
- ▶ Tsukuba Univ.
- ▶ Tokyo Univ.
- ▶ Shinshu Univ.
- ▶ Nagoya Univ.
- ▶ Kyoto Univ.
- ▶ Osaka Univ.
- ▶ Okayama Univ.
- ▶ Hiroshima Univ.
- ▶ Kyushu Univ.
- ▶ J-PARC
- ▶ SACLA
- ▶ SPring-8
- ▶ Japan Atomic Energy Agency
- ▶ National Institute of Radiological Sciences
- ▶ National Institute of Advanced Industrial Science and Technology
- ▶ Institute for Molecular Science
- ▶ National Institute for Materials Science
- ▶ Nara Institute of Science and Technology
- ▶ High Energy Accelerator Research Organization etc.



Pumps for solvent/H<sub>2</sub> evacuation also lined-up.  
Contact us about combination with Turbo or Mechanical booster.



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