

Company Introduction

Make a better flow
変化と多様性を力に。



大晃機械工業株式会社

1. 회사 개요
2. 본사 연혁 및 위치
3. Global Network
4. 제품 소개 및 매출액
5. 응용 분야
6. Blower, Vacuum Dry Pump, Gear Pump
7. A/S System

HQ History



- 1956~1969
 - 1956. 04. 본사설립 및 기어펌프 설계, 제작, 판매(자본금 17,000천엔)
 - 1965. 01. 남극관측선 연료 oil 펌프 납입, 원심펌프 판매개시
 - 1968. 10. Rotary 펌프 판매 개시
- 1970~1979
 - 1971. 10. 선박용 오페수 펌프, 1축, 2축, 3축 펌프 판매 개시
 - 1976. 06. 오일-수 분리(유수분리) 펌프 판매 개시
- 1980~1989
 - 1986. 10. Screw type 건식 진공펌프 판매 개시
- 1990~2009
 - 1994~2003 중국 사무소개설 및 자회사 건립(9개사)
 - 2003. 04. 한국 수리거점 개설
 - 2008. 04. 자회사(世晷) 합병 및 자본금 변경(55,176엔)
- 2010~2018
 - 2010. 05. 자본금증자(55,201,천엔) 및 타이코진공기술(주)설립 (10월)
 - 2011.01. 대만 Yoshikawa제작소 자회사 설립
 - 2013.03. Mega-Solar 사업개시
 - 2016.05. 자본금 증자(100,000천엔), Taiko Holding Co., Ltd. 설립(7월)
 - 2018.02. 일본 중국전기, 네덜란드 Oranda Maflex사 인수합병
 - 2018.07. Singapore Taiko Asia Pacific PTE. LTD 설립



HQ and Factory Location

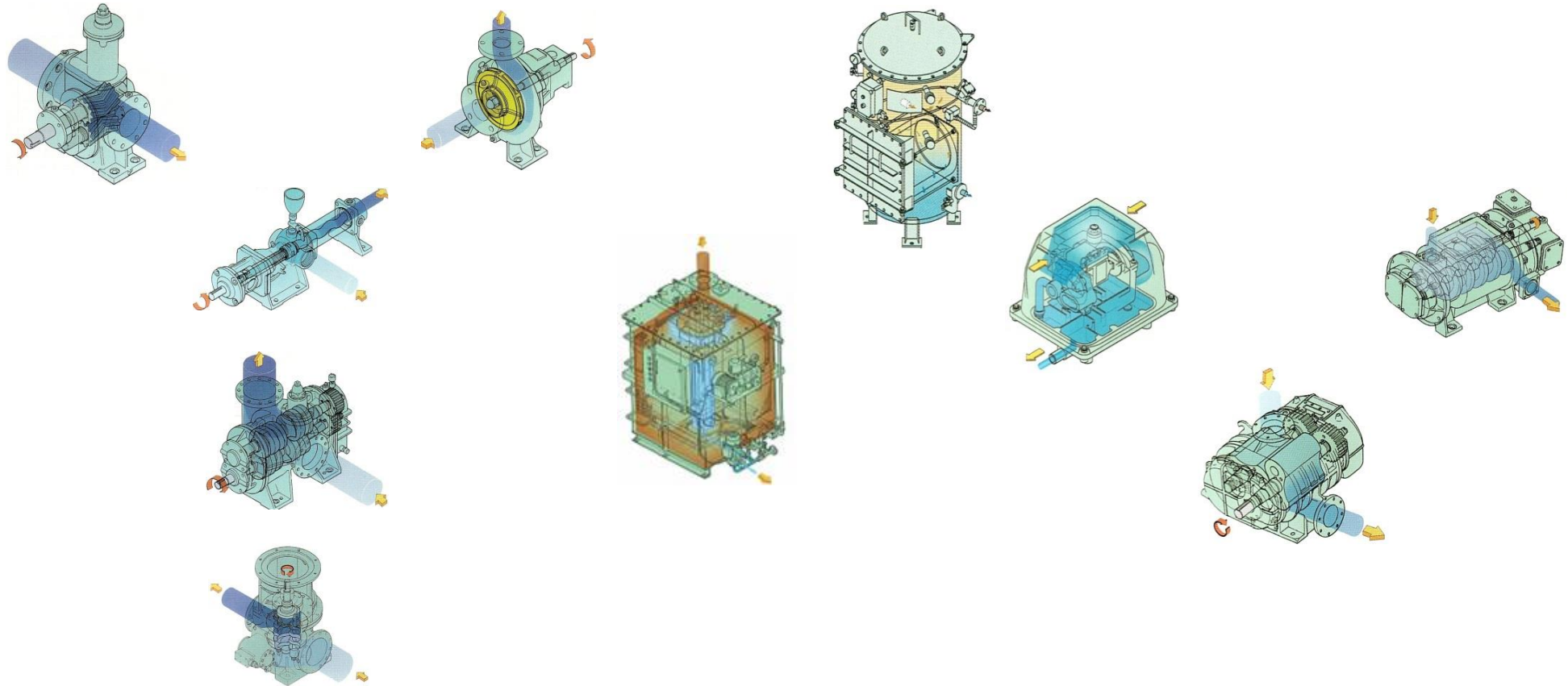


Global Network

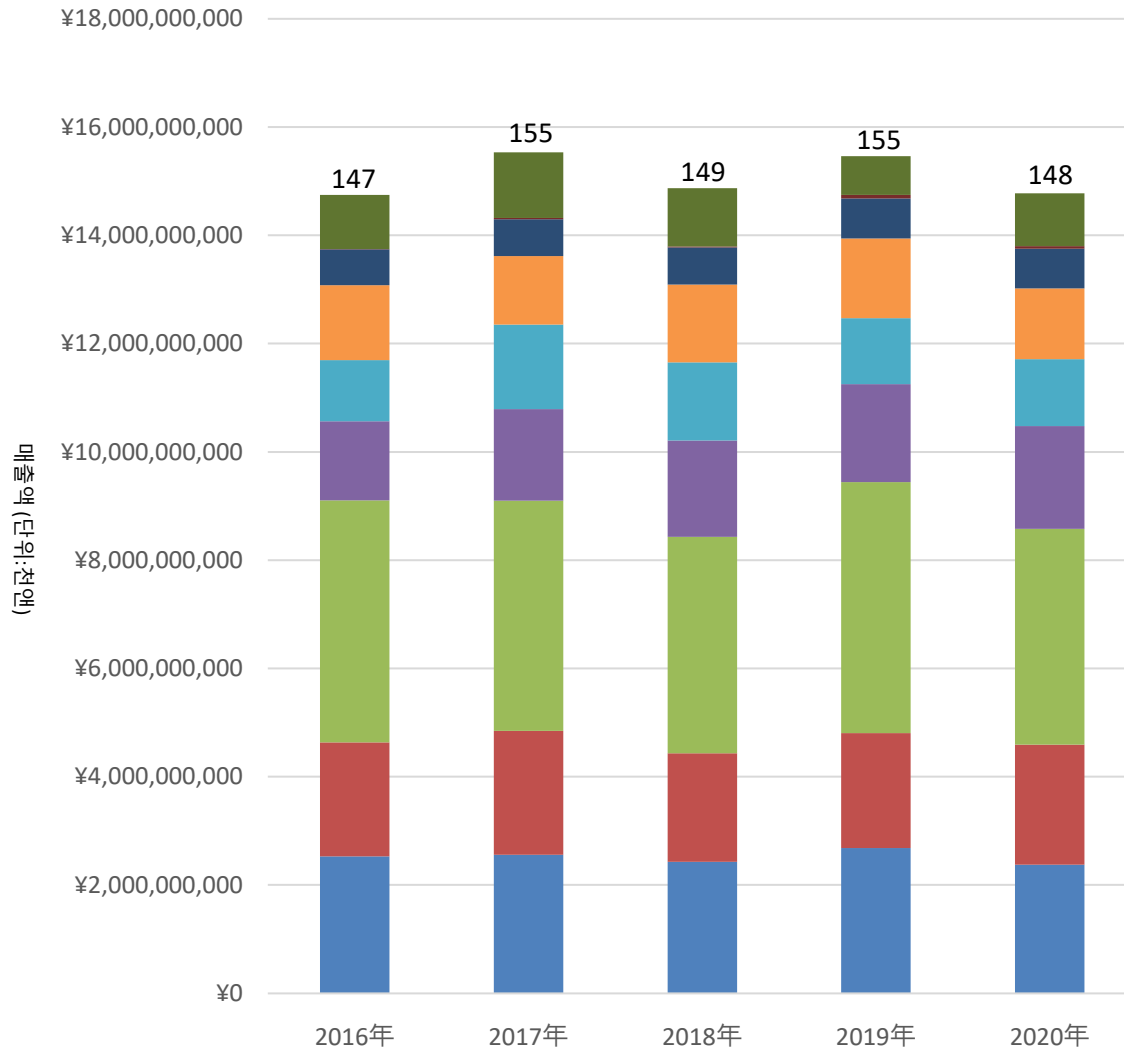


Product Range

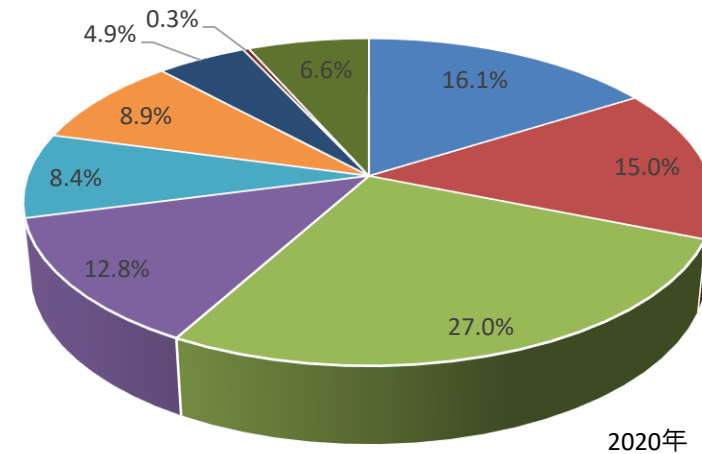
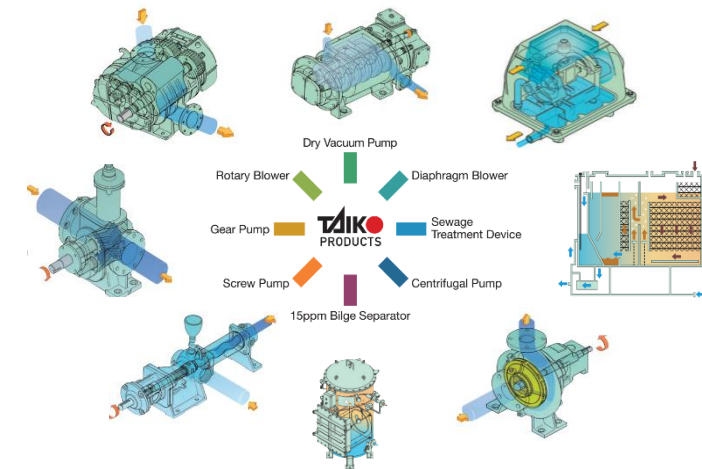
Oil 펌프 제품군		수처리 펌프 제품군			공기 펌프 제품군		
기어 펌프	축 펌프	원심펌프	오수 처리 펌프	유수 분리기	다이아프램 블로어	Rotary 블로어	건식 진공펌프



Turn over



■ 기어 펌프
 ■ 축 펌프
 ■ 원심펌프
 ■ 로터리 블로워
 ■ 진공펌프
 ■ 유수분리기
 ■ 다이어프램블로워
 ■ 소수력발전
 ■ 기타



Applicable Field



Flat Panel Display



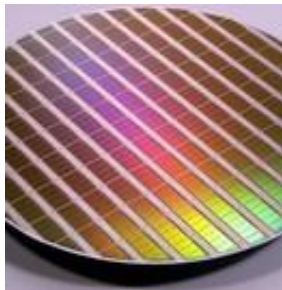
Ship



Plant



Chemical Industry



Semiconductor



Automobile & Components



Gas Industry



Dental Clinic



Health care



Pharmaceutical Industry

Dry Type Vacuum Pump - Trend

- Frequent oil exchange
- Oil mist from suction port
- Pump damage due to SiO₂ powder
- Pollution of pump site with oil
- Frequent maintenance cycle of pump



Screw type Dry Pump

Vacuum Dry Pump

1. 독자적인 Screw식에 의한 고효율 분체 배기(Queen-bee screw)

- 1단 압축 방식(최종단)
- 높은 배기 효율

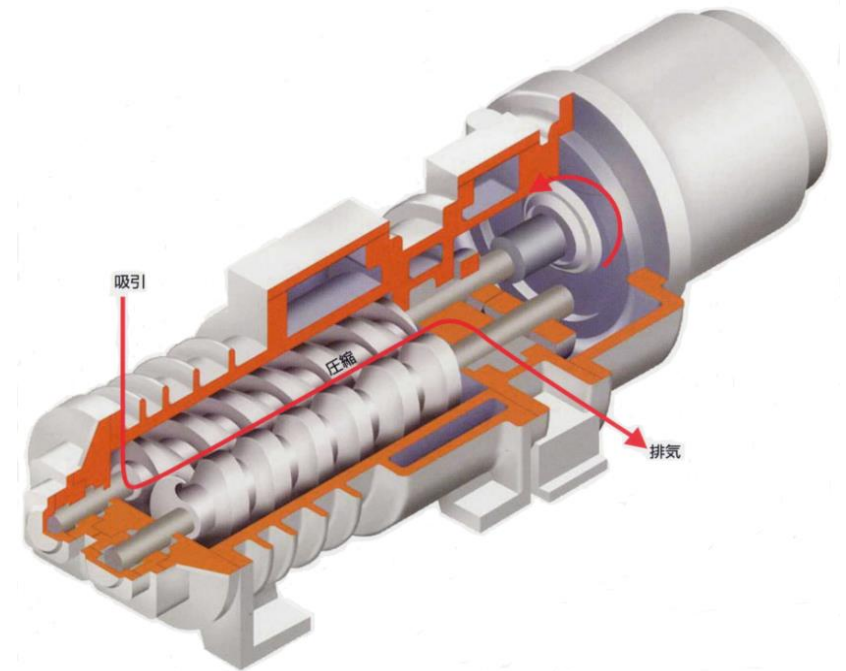
3. Screw 형상으로 인한 분체 부착을 방지

4. 고온 운전에 의한 승화 생성물 고착 방지

5. 저속운전(3,600rpm/60Hz) 및 Cleaning Run

부품(베어링, 씰, 타이밍기어 등)의 장수명

6. 저진동, 저소음



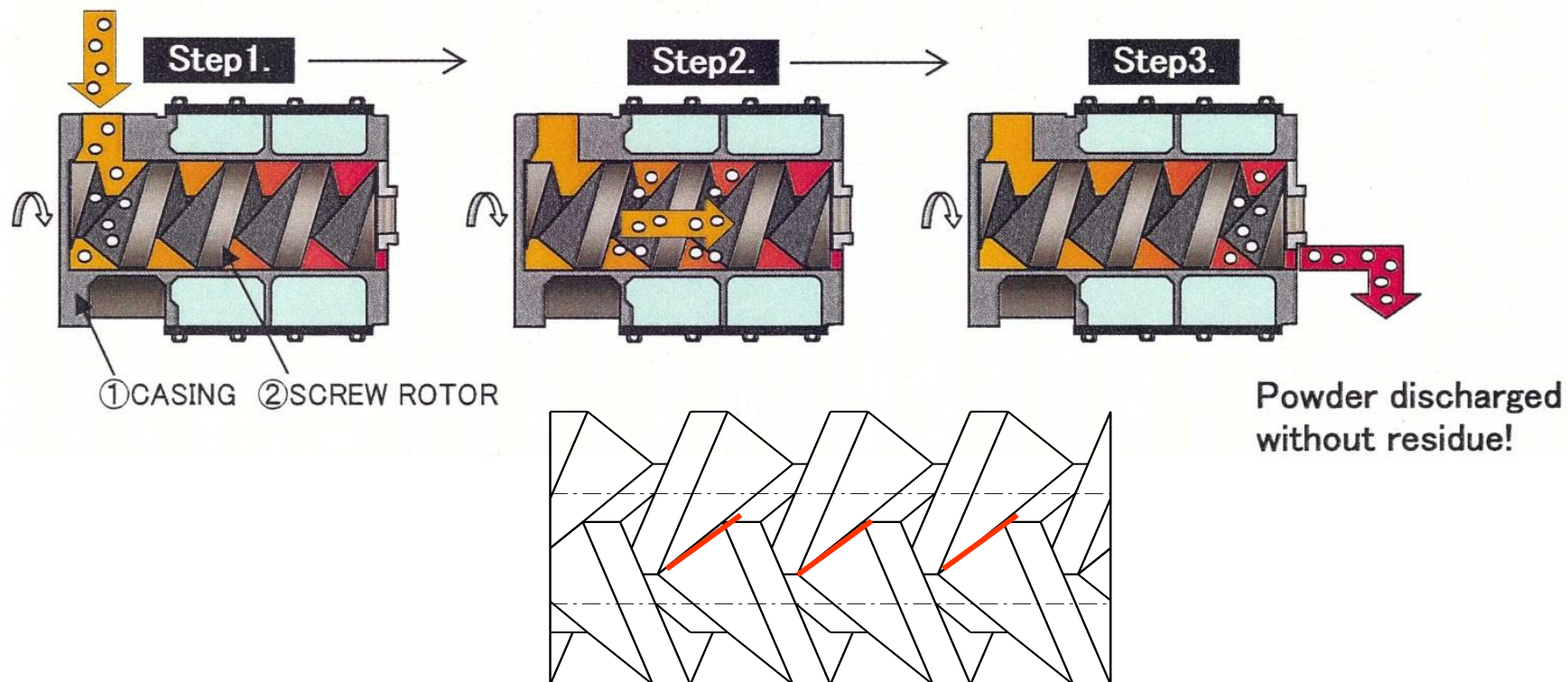
Vacuum Dry Pump - Applications

- 진공 건조 공정 → 건식 공정 중에서도 도달 진공도가 높아 제품 품질 향상에 기여 가능.
- 진공 증류 공정 → 수봉식과 비교하여 진공도가 높고, oil 회전식과 같이 에의 혼입이 없으므로 제품 품질향상에 기여.
- Gas 회수 공정 → 건식이므로 흡인 gas가 그대로 배출되므로 Gas 회수가 용이
- 화학 Gas 공정 → 내부식성 coating 제품, SUS 제품으로 대응 가능.

Vacuum Dry Pump - Characteristics

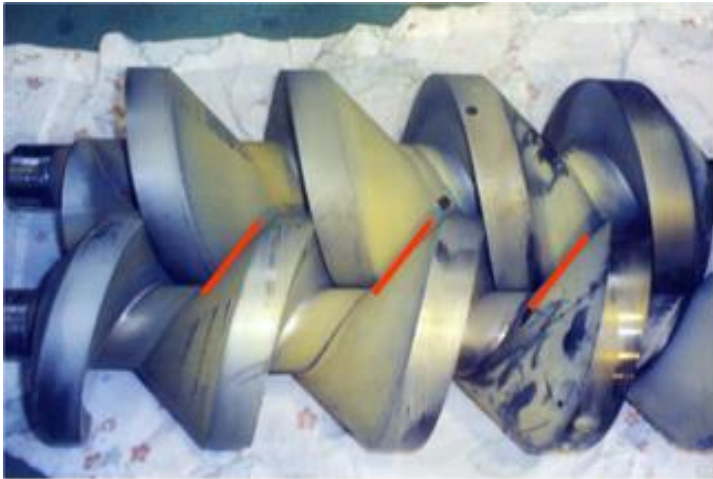
1. 고효율 분체 배기

- (1) 배기패스가 심플하고 짧고 Rotor 및 Casing에 가스가 접촉하는 시간이 짧으므로 고착물이 부착할 가능성이 적다.
- (2) 독자 screw 형상에 의거 펌프 내에 퇴적물 체류가 어려워 분체 배기에도 적합합니다.



Vacuum Dry Pump - Characteristics

2. 적용사례 (In-Line CVD Process)



좌측 사진의 빨간 선이면 Seal 부분으로 Roter 표면의 퇴적물을 떼어 내어 간극이상의 고착을 방지.

→ 분체에 강함

* N2 purge gas

: purge gas는 펌프 내부 가스를 희석함으로써 압축 공정에서의 가스 volume %를 제어, 펌프 내부에서의 분체 퇴적을 방지할 목적으로 함.

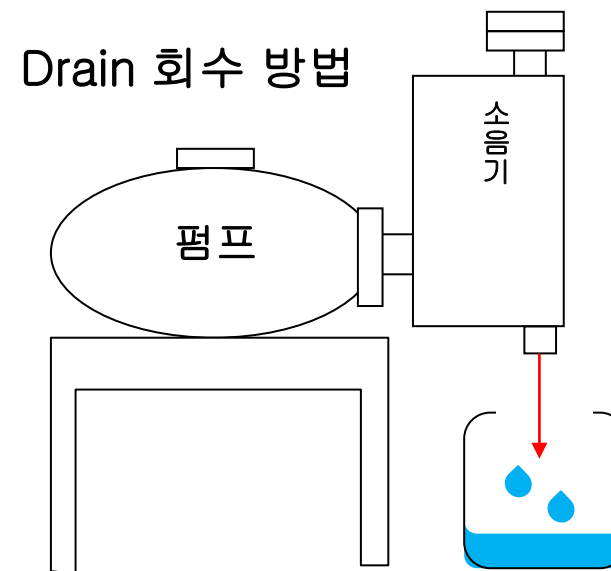
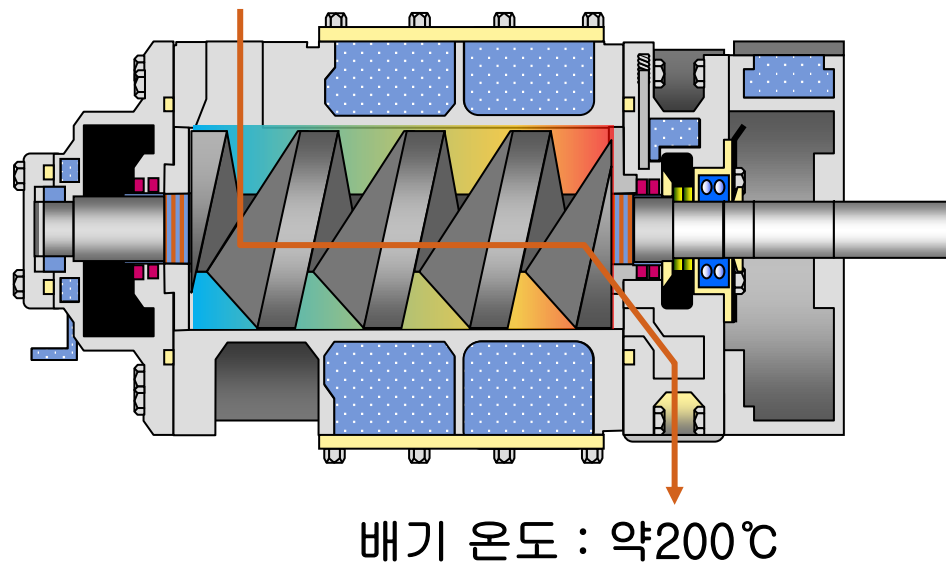
purge gas는 상온이므로 펌프 내부의 가스 온도를 낮게 하여 승화성 가스 성분이 고체화(분체 퇴적)될 우려가 있으나, taiko pump에서는 압축단에서의 purge gas + 흡인 gas를 300 °C 부근까지 승온시키므로 purge gas 온도에 의한 고착(퇴적)은 일어나지 않습니다.

Vacuum Dry Pump - Characteristics

3. 고온운전 및 Re-cycle

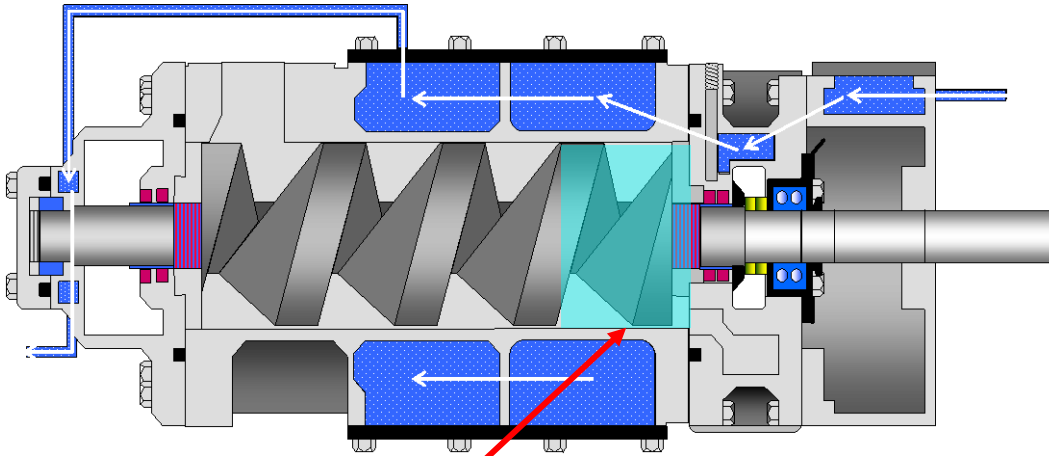
고온 배기가 가능 : 응축성 가스에 강함.

- 펌프 내부에서의 압축공정이 1회이므로 압축에 따른 gas의 drain을 최소한으로 억제 가능. (응집성, 승화성 가스배기에 용이)
- 단열 압축에 의한 발열량이 높아 펌프내부의 gas 퇴적이 어렵다.



Vacuum Dry Pump - Characteristics

4. Cooling



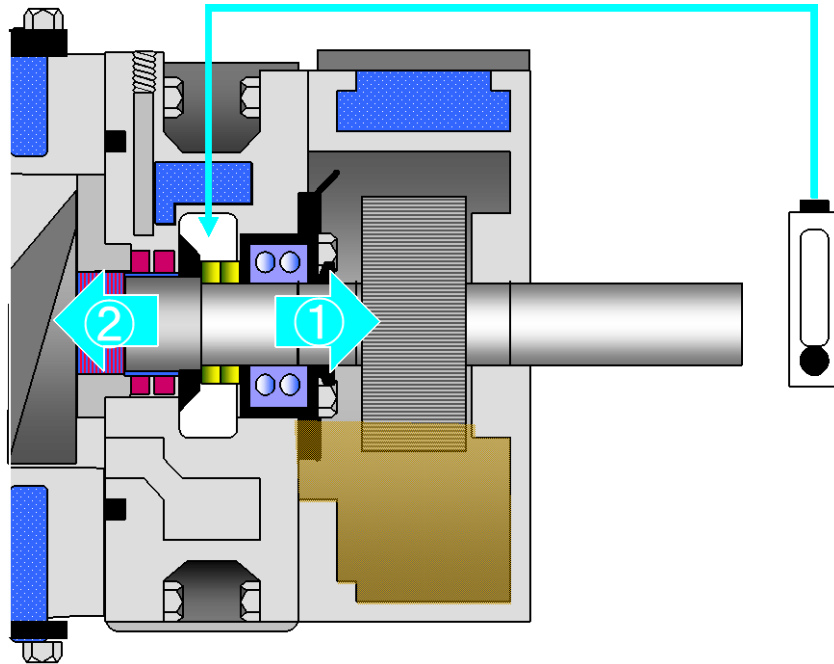
<Case1 : solvent 유입>
N2 gas를 이용한 Casing
내부 압축열 control



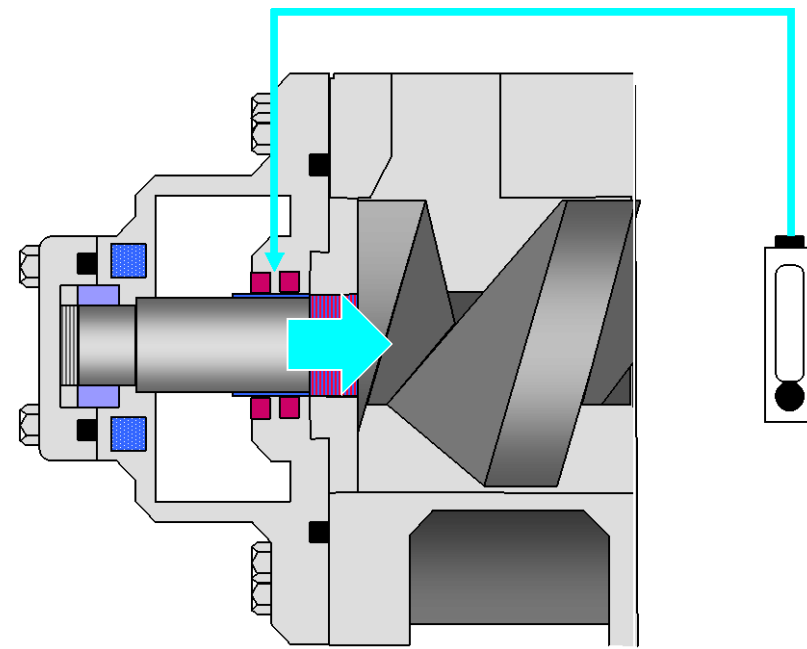
<Case2 : Air 유입>
대기중의 공기를 Air cleaner로
filtering하여 Casing 내부 압축열을
control

Vacuum Dry Pump - Characteristics

5. N2 Purge



Sealing A



Sealing B

<Sealing A>

- 가압 방향 ① : Vapor화된 Oil 및 유분 누수를 최소화.
- 가압 방향② : Lip Seal부 가압 → Side Case로의 Gas 누수 최소화, Seal 열화 방지

<Sealing B>

- 운전중, Bearing부분의 압력변동 방지
- Pump 정지 시, Bearing 부분으로의 Gas 역류 방지

Vacuum Dry Pump Line-up



Upper : 60Hz

Lower : 50Hz

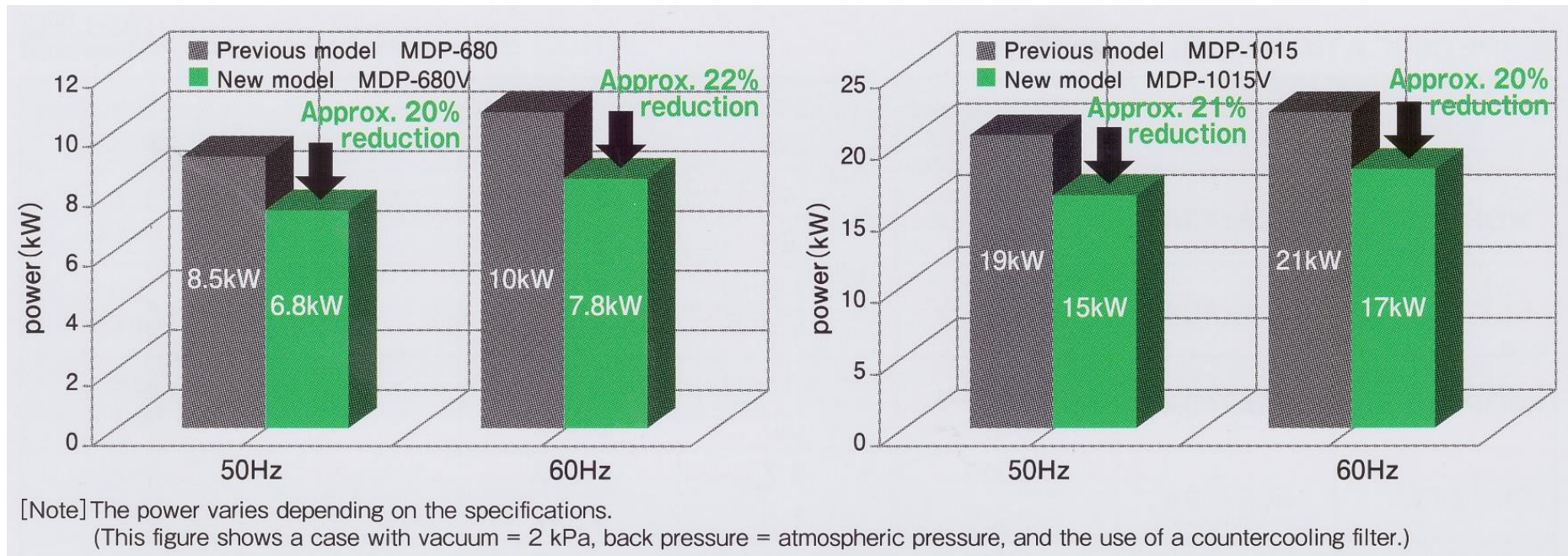
Model	Boer IN/OUT	Pumping Speed (ℓ/min)	Ultimate Pressure (Pa)	Motor Rating (kW x P)	Lubrication oil (ℓ)	Cooling water (ℓ/min)
SLT-333A	40A / 40A	850	1	2.2 x 2	0.6	2.0
				3.7 x 2		
MDP-415A	40A / 40A	1,400	40	3.7 x 2	1.0	2.0
		1,100	80	3.7 x 2		(4.0)
SLT-413A	40A / 40A	1,400	1.0	3.7 x 2	1.0	2.0
		1,100	1.3	3.7 x 2		(4.0)
MDP-535A	50A / 40A	3,000	13	7.5 x 2	1.5	4.0
		2,500	50	5.5 x 2		(8.0)
SLT-513A	50A / 40A	3,000	0.7	7.5 x 2	1.5	4.0
		2,500	1.0	5.5 x 2		(8.0)
MDP-680	65A / 50A	6,200	1.0	15 x 2	3.0	6.0
		5,000	1.3	11 x 2		(12.0)
MDP-1015	100A / 65A	11,000	0.7	30 x 2	3.5	12.0
		9,000	1.0	22 x 2		(12.0 + 12.0)
MDP-1550K	150A / 100A	35,000	50	90 x 4	14.5	30.0
		27,000	100	75 x 4		(30.0 + 90.0)

Note : () in the case fitted with reverse cooler



Vacuum Dry Pump eco VP Screw

1. 저 소비전력 : 종래 대비 약 20% 절감
2. Utility 절감 : N2 사용량을 최대 100% 절감
3. 종전 모델 수리시 개조 가능



Vacuum Dry Pump eco VP Line-up



Upper : 60Hz

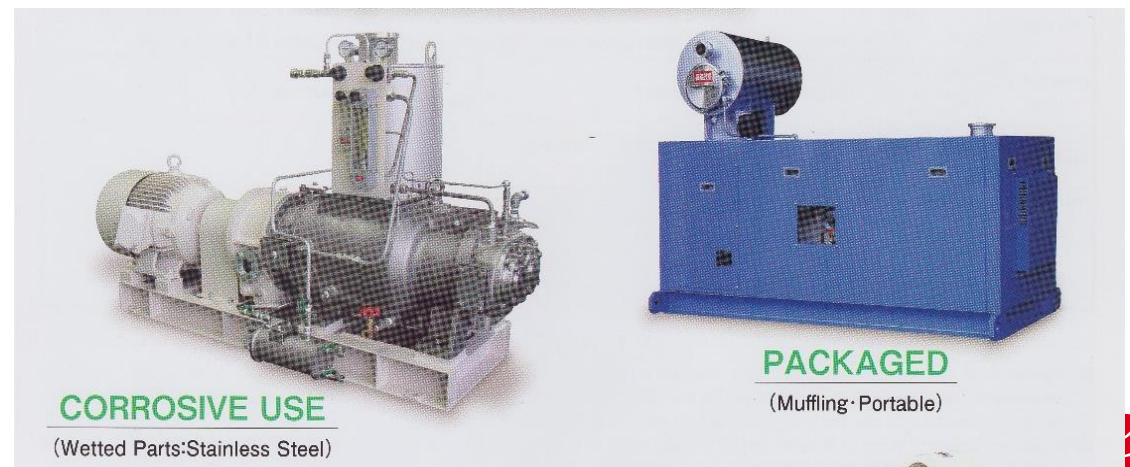
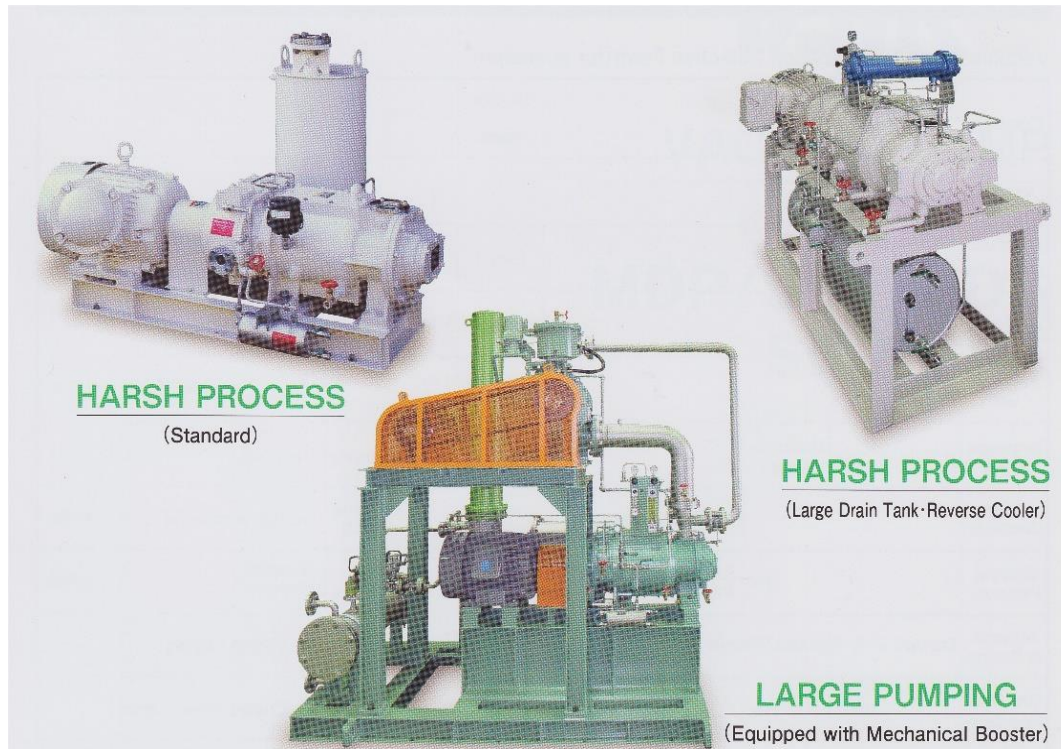
Lower : 50Hz

Model	Boer IN/OUT	Pumping Speed (ℓ/min)	Ultimate Pressure (Pa)	Motor Rating (kW x P)	Minimum Power (kW)	Diluent Gas Flow (ℓ/min) *	Cooling water (ℓ/min)
MDP-680V	65A / 50A	6,500	1.0	11 x 2	7.8	Light Process : 0	6.0
		5,500	2.0	7.5 x 2	6.7	Standard : 25 Harsh Process : 200	
MDP-1015V	100A / 65A	12,000	1.0	22 x 2	16.8	Light Process : 0	12.0
		10,000	2.0	18.5 x 2	15.00	Standard : 50 Harsh Process : 400	
MDP-1225V	125A / 80A	22,000	0.5	37 x 2	18.3	Light Process : 0	15.0
		18,000	1.0	30 x 2	16.7	Standard : 100 Harsh Process : 400	

* : The diluent gas flow must be adjusted to match the customer's specifications.

The amount of lubrication oil is same with earlier MDP series models.

Vacuum Dry Pump Feature

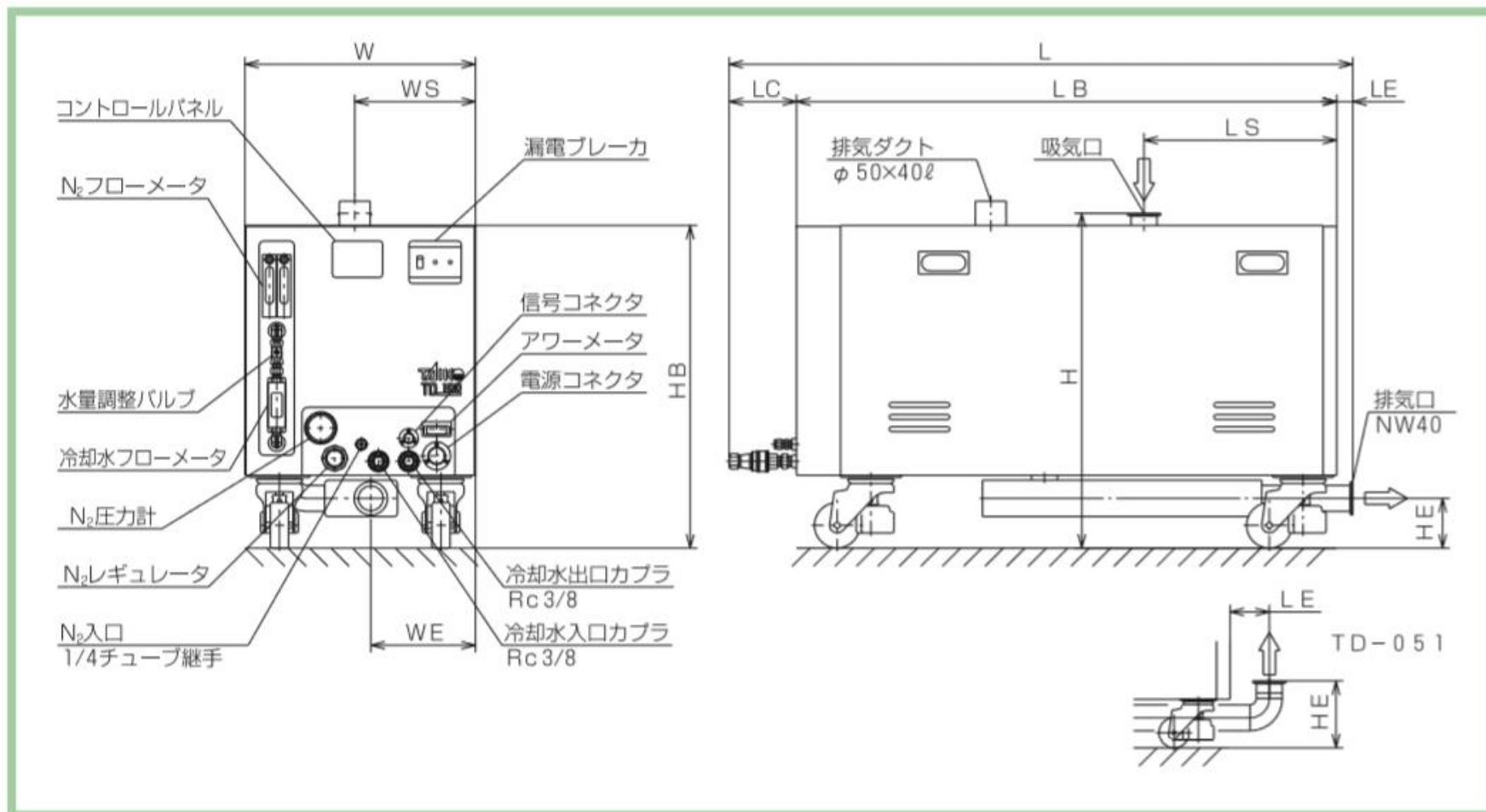


TD-SERIES VACUUM PUMP



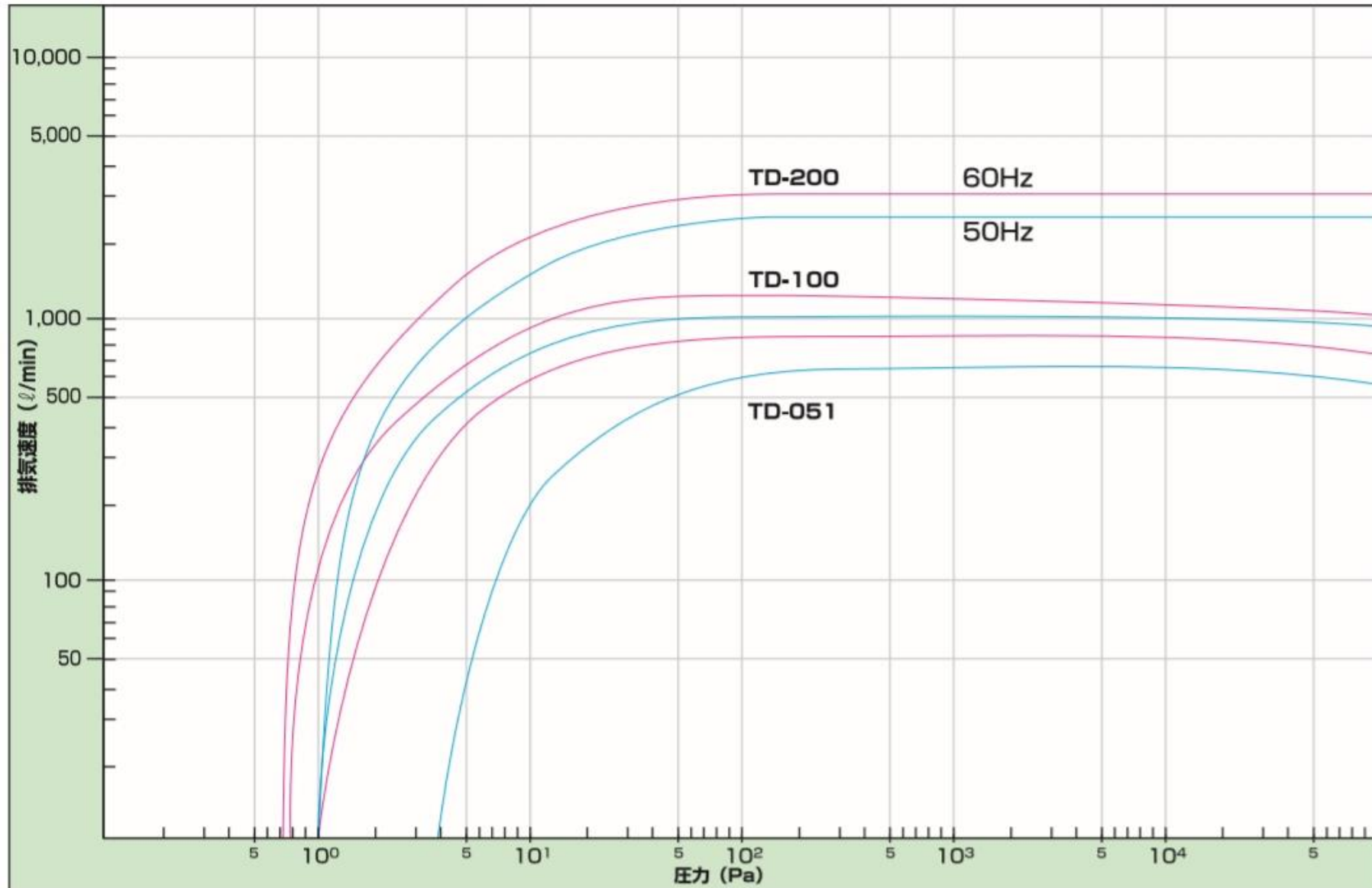
Model No.		TD-051	TD-100	TD-200
Pumping Speed (L/min)		650 / 850	1000 / 1300	2500 / 3000
Ultimate Pressure Pa (50/60Hz)		4 / 1	1.1 / 0.8	1.1 / 0.7
Flange (Inlet/Outlet)		NW40 / NW40		NW50 / NW40
Motor Output		2.2	3.7	5.5
U t i l i t y	Cooling Water	Connection	Rc 3/8 (Coupler)	
		Pressure	Differential Pressure : MIN 0.1MPa Inlet Pressure : MAX 0.4MPa	
		Rate	2L / min	4L / min
	N2	Connection	¼ Tube	
		Pressure	0.1~0.7 MPaG Regulator set : 0.05MPaG	
		Rate	10~15L / min	20~50L / min
	Power	Phase, Voltage	3Ø 200 / 220V, 50 / 60Hz	
Weight (kg)		155	230	310
Alarm		C.W low / Pump Temperature high / Back Pressure high / Oil level low		
Trip		Overload		

外形 寸数



寸法表(mm)												
形 式	吸気口径	L	LC	LB	LS	LE	W	WS	WE	H	HB	HE
TD-051	NW40	875	110	700	118	65	380	193	180	500	470	110
TD-100	NW40	1027	110	890	318	27	380	199	173	550	530	82
TD-200	NW50	1090	110	950	320	27	460	240	213	625	600	82

성능 곡선



BEH-SERIES VACUUM PUMP

HOP
to
2023

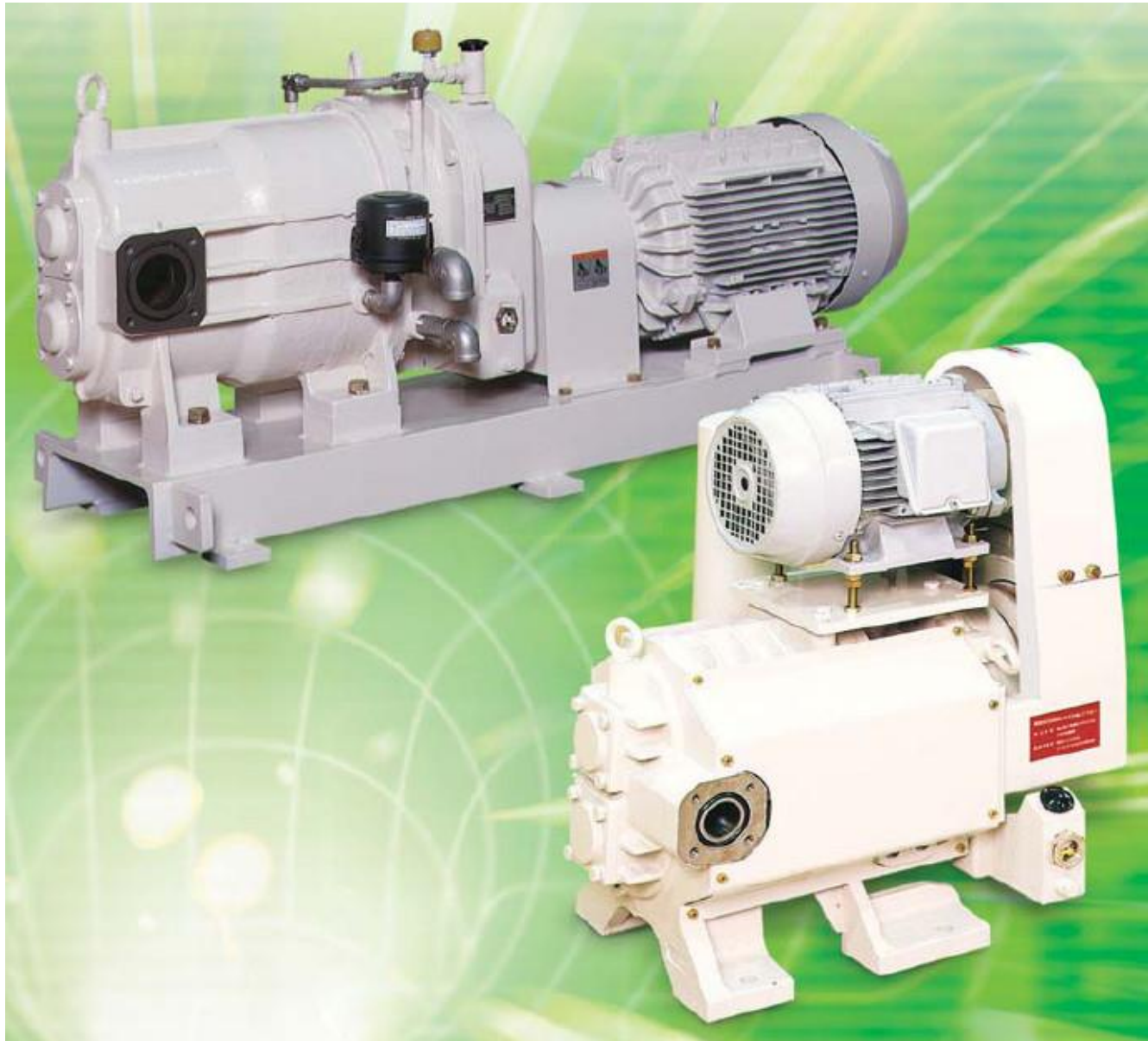


Model No.		BEH-300	BEH-600	BEH-1200	BEH-1800	BEH-3000	BEH-3600		
Pumping Speed	L/min	5000/4500	10000/9000	20000/19000	30000/25000	50000/48000	60000/55000		
Ultimate Pressure	Pa	0.13	0.13	0.08	0.08	0.08	0.08		
Flange (Inlet/Outlet)		NW50 / NW40	NW50 / NW40	ISO100 / NW50	ISO160 / NW50	ISO160 / NW50	ISO160 / NW50		
Power Consumption	kW	3.6/3.2	3.7/3.3	6.8/6.3	6.9/6.4	11.6/11.0	19.6/17.1		
Motor Rated Output	kW	1.5+3.7	1.5+3.7	3.7+5.5	5.5+5.5	5.5+11	5.5+23		
U t i l i t y	Cooling water	Connection		Rc 3/8 (Coupler)					
		Pressure		Differential Pressure : MIN 0.2MPa Inlet Pressure : MAX 0.4MPa					
		Rate	L/min	2	2	4	4	6	12
		Temp'	°C	5~30					
	N ₂	Connection		¼ Tube (Rc ¼)			3/8 Tube (Rc 3/8)		
		Pressure		0.1~1.0 MPaG Regulator set : 0.05MPaG					
		Rate	SLM	20~	20~	30~	30~	50~	70~
	Power	Phase		3Ø					
		Voltage		AC 200V / 220V					
		Frequency		60Hz / 50Hz					
Dimension (mm)	L		974	974	1113	1108	1416	1720	
	W		385	385	482	482	575	680	
	H		883	883	1126	1161	1302	1372	
Weight	Kg		320	350	600	650	900	1600	
Alarm		Current / C.W Volume / N ₂ Gas Flow / Pump Temperature / Back Pressure / Lubricant Decrease							
Trip		Current / C.W Volume / N ₂ Gas Flow / Pump Temperature / Back Pressure							

Power consumption values are shown at achieving pressure. Take them as a guide because of individual variability

SDV / SDF VACUUM PUMP

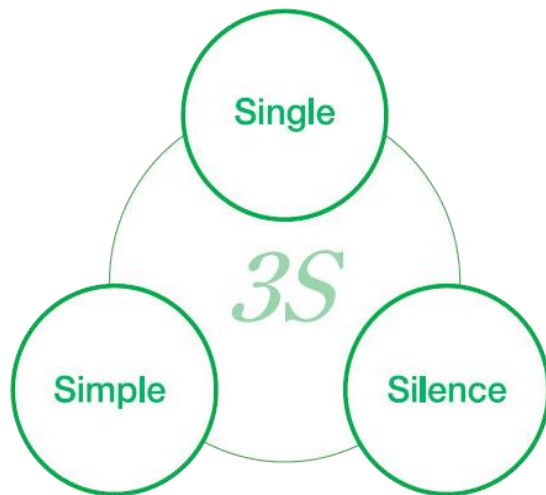
HOP
to
2023



용도

진공세정기, 진공세정건조, 식품진공팩, 진공성형
진공함침, PSA, 탈기, 탈포, 흡착, 진공냉각
기타 진공관련 기기 전반.

특징



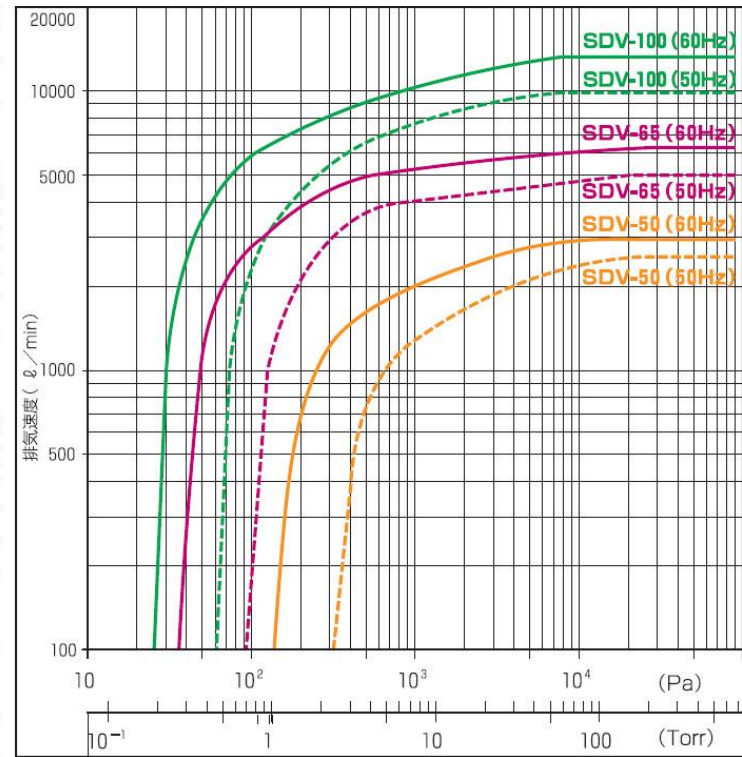
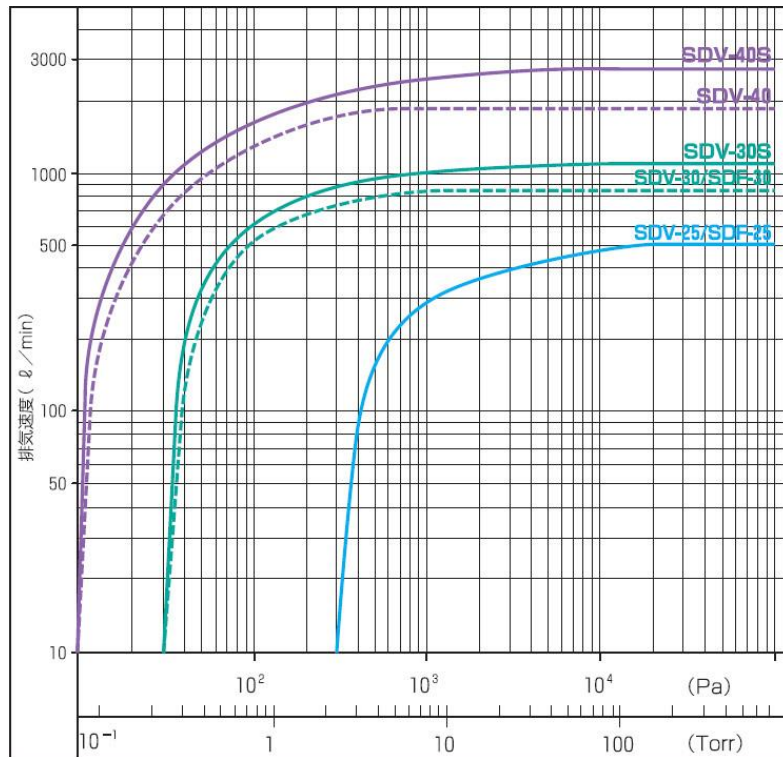
Single 긴수명

Simple 간편한 수리

Silence 저속 고밸런스 로터, 저소음

1. 배기 패스가 짧아 배기 효율이 좋다.
2. 대기압 에서부터 연속 운전이 가능하다.
3. 깨끗한 진공 (가스 접합부 드라이 방식)
4. 간단한 구조, 쉬운 관리 (Easy Maintenance)
5. 뛰어난 내구성
6. 저소음, 저진동, 컴팩트한 설계
7. SDF 시리즈는 공랭 구조를 채용. 운전비용 절감

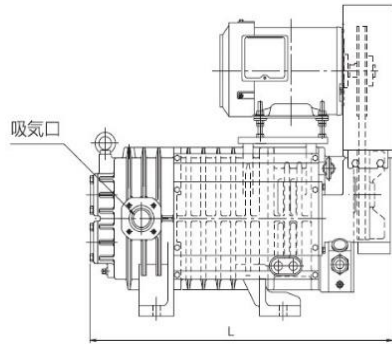
사양 및 성능 곡선



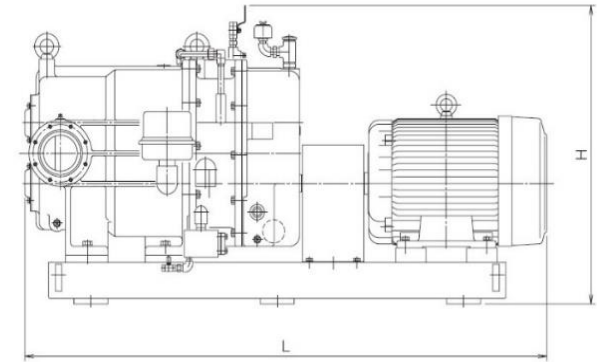
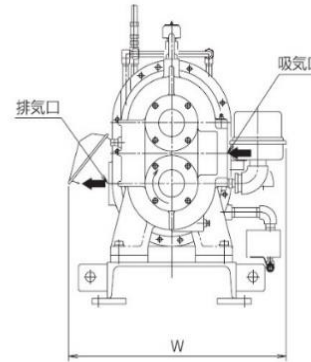
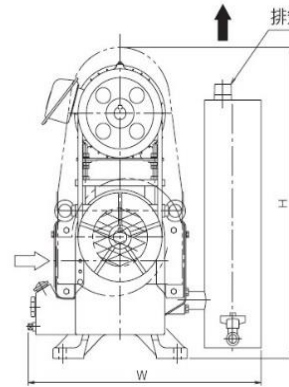
	SDV-25	SDF-25	SDV-30	SDF-30	SDV-30S	SDV-40	SDV-40S	SDV-65	SDV-100
Flange (IN)	VG25	VG25	VG25	VG25	VG25	VG40	VG40	VG65	VG100
Flange(OUT)	25A(R1)	25A(R1)	25A(R1)	25A(R1)	25A(R1)	32A(R1-1/4)	32A(R1-1/4)	VG50	VG65
Pumping Speed (ℓ/min)	500	500	850	850	1100	1900	2800	5000/6200	9700/11500
Ultimate Pressure (Pa)	300	300	30	30	30	10	10	90/35	60/25
Motor Rated Output(kw)	1.5	1.5	2.2	2.2	3.7	3.7	5.5	11	18.5/22
R.P.M (min ⁻¹)	2900	2900	2900	2900	3500	2400	3500	2900/3550	2900/3550
Oil (ℓ)	0.6	0.6	0.6	0.6	0.6	1.0	1.0	2.0	5.0
C.W Rate (ℓ/min)	2	AIR COOLED	2	AIR COOLED	2	4	4	6	12

외형 치수 및 표준 부속품

■SDF-25·30



■SDV-50·65·100



	SDV-25	SDF-25	SDV-30	SDF-30	SDV-30S	SDV-40	SDV-40S	SDV-65	SDV-100
W (mm)	435	475	435	475	460	540	570	525	675
L (mm)	475	495	595	615	570	850	800	1380	1570
H (mm)	590	590	590	590	690	715	790	670	850
Weight (kg)	125	115	155	140	165	270	245	385	760

표준 부속품

◆SDV-25 , 30 , 30S , 40 , 40S

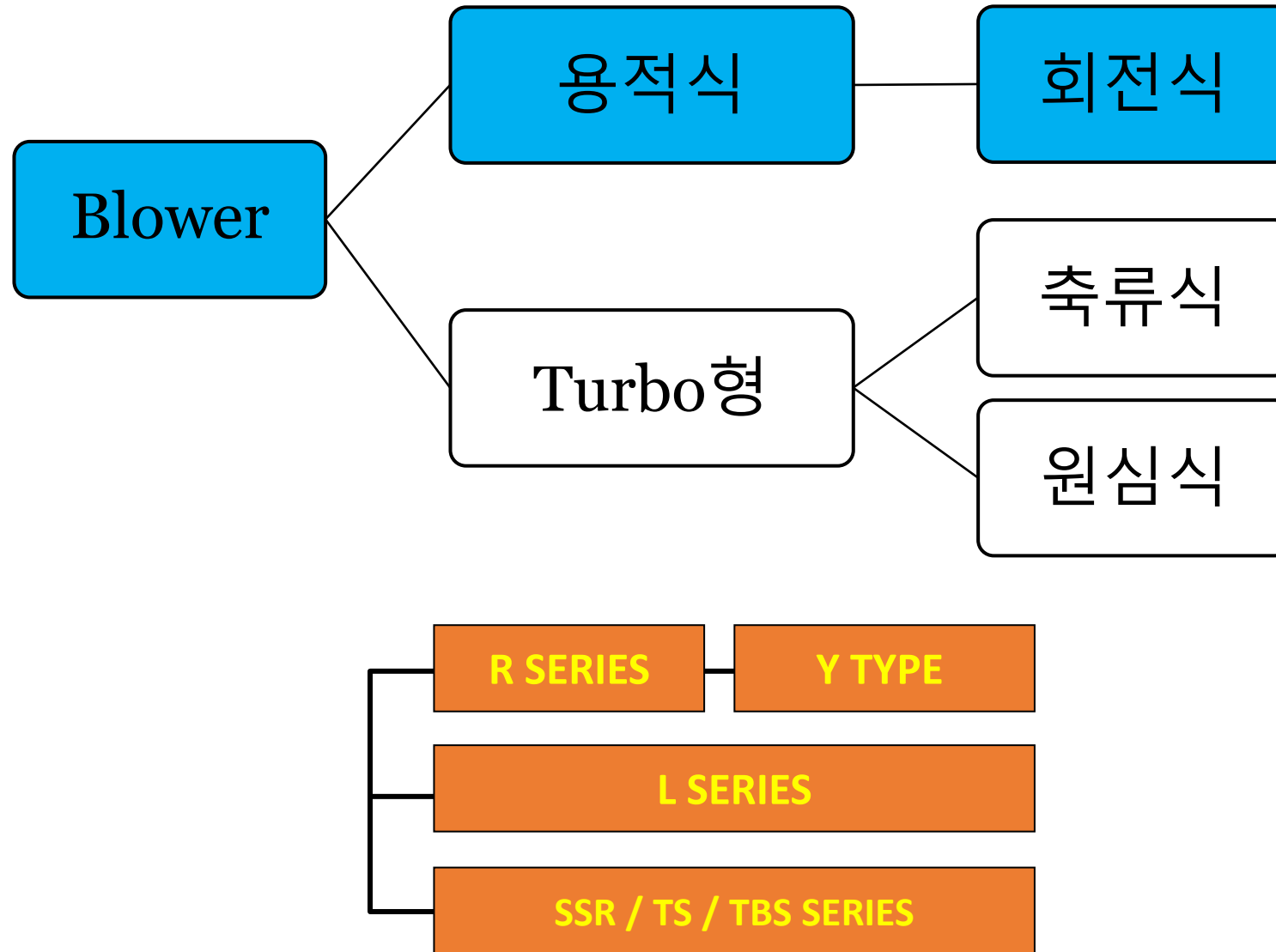
◆SDF-25 , 30

V-폴리, 벨트, 안전커버, 소음기, 흡기축 플랜지, 기초볼트 (모터는 사용자 지정)

◆SDV-65, 100

공용베드, 커플링, 에어필터, 안전커버, 흡기 토출구 플랜지 (사용자 요구시 드레인탱크)

Blower Classification



Blower Comparison

	Blower(용적식)	Turbo Blower(원심식)
Cost	초기 투자 비용이 저렴	초기 투자 비용이 고가
풍량변화	압력 변화에 대하여 풍량이 거의 일정	압력 변화에 대하여 풍량 변화가 큼
원리	토출측의 부하 역류에 따라 압축이 이루어짐	원심식으로 speed를 압력으로 변환
구조 및 안정성	단단한 주조 구조이며, 용접부분도 없으며, 저속회전 이므로 shaft 수명을 포함하여 안전도가 높음	구조적으로 용접구조이며 고속회전하므로 shaft 수명 을 포함, 안전도가 낮음.
압축 공정	계속되는 압축공정이므로 맥동이 다소 크다.	압축공정이 거의 연속적이므로 맥동이 다소 작다.
주파수	기본적으로 저주파이다.	기본적으로 고주파이다.
진동	맥동이 큰만큼 약간 크지만, 2축의 저속회전이므로, Turbo와 비교하여 큰 진동에도 기계적으로 어떠한 문 제도 발생하지 않음.	맥동이 작은만큼 약간 작지만 고속회전이므로 Balance 불량 등에 의한 진동이 치명적인 사고로 이어질 위험성 이 있음.
소음	약간 큼	약간 작음
설치공간	비교적 좁다	비교적 넓다(부대기기가 많음)

당사의 2축 rotary blower는 1대당 압력이 약 10kPa 이상, 100kPa 이하의 용적형 회전식 blower(Roots type)으로 분류됩니다.

작은 풍량에서 대형 풍량까지, 수처리/공기이송에서 특수 gas용도까지, 더불어 진공펌프 (Roots type)까지 폭 넓은 분양에서 사용되고 있습니다.

(2단식으로 압력 200kPa 까지 대응 가능)

Roots Blower – Product Features

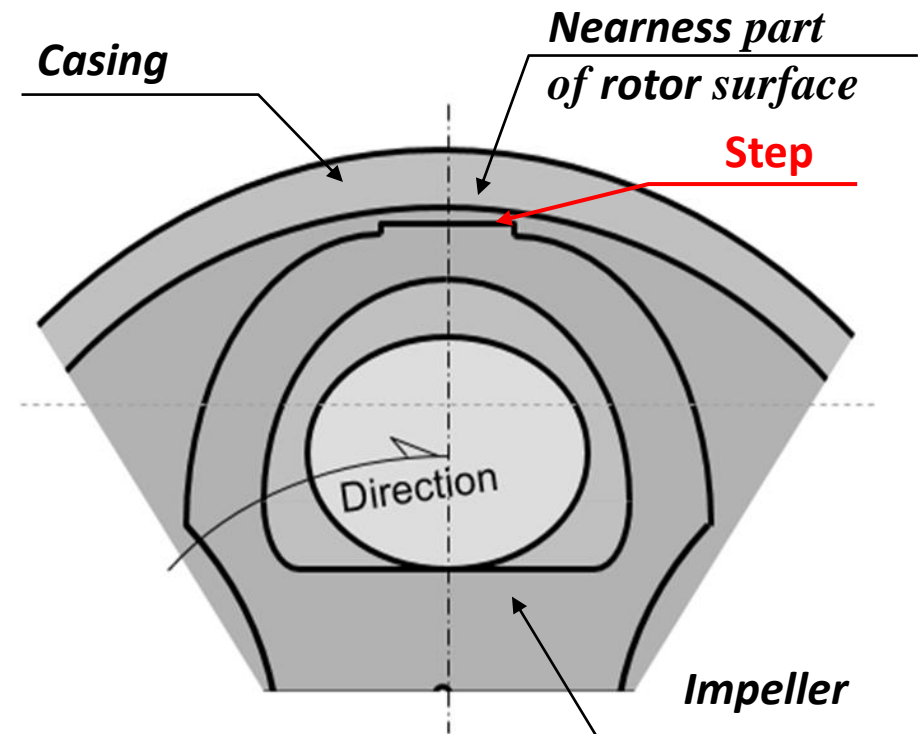
The structure of the casing interior and the **surface seal** of the R-type series blower are shown in the right. The conventional roots-type blower has a deficiency because high-pressure air at the outlet is easily blown by from the rotor front end to the inlet because of the linear seal structure.

The TAIKO R type series has:

- ① **created a wide surface seal structure at the rotor-top.**
- ② **a step at the rotor arc portion causing a vortex flow by the rotating and inverse rotating direction, acting to further reduce the blow-by.**

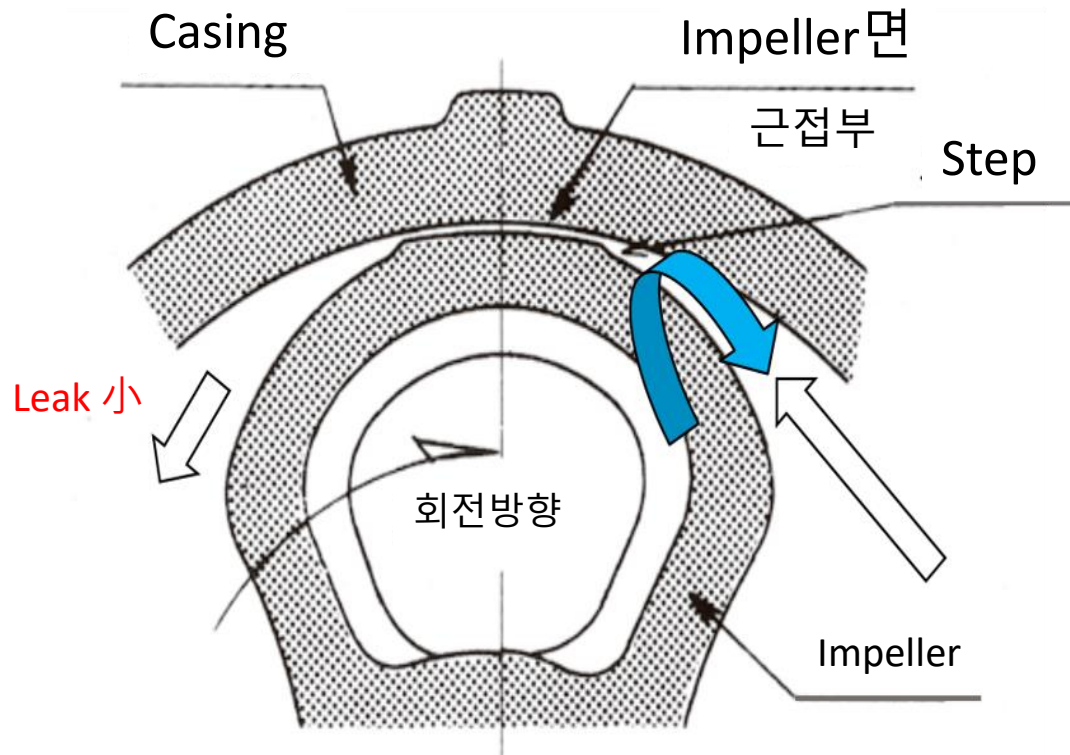


ACHIEVING HIGH EFFICIENCY

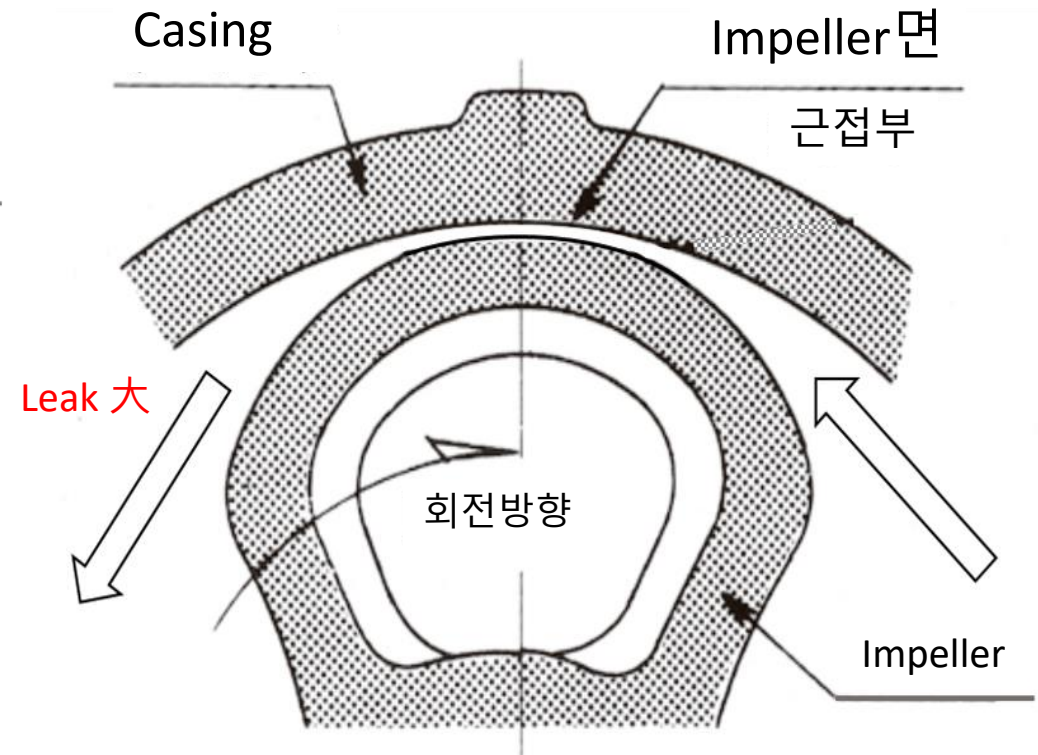


Roots Blower – Product Features

면 Seal 구조



선 Seal 구조



Roots Blower – Noise & Vibration data

NOISE	CAPACITY	NOISE RATE
	1m ³ /min blower class	Approx. 63dB (A)/1m
	10m ³ /min blower class	Approx. 79dB (A)/1m
	30m ³ /min blower class	Approx. 84dB (A)/1m
	60m ³ /min blower class	Approx. 88dB (A)/1m
	100m ³ /min blower class	Approx. 92dB (A)/1m
	200m ³ /min blower class	Approx. 96dB (A)/1m
	* Estimated value inspected at Taiko factory under air releasing operation. However, the above value will decrease approx. 2~4dB (A) by fitting regular silencer and piping.	
VIBRATION	CAPACITY	VIBRATION RATE
	1m ³ /min blower class	Approx. 10μm
	10m ³ /min blower class	Approx. 15μm
	30m ³ /min blower class	Approx. 25μm
	60m ³ /min blower class	Approx. 30μm
	100m ³ /min blower class	Approx. 35μm
	200m ³ /min blower class	Approx. 40μm
	* Estimated total amplitude at the bearing	

Expected Noise and Vibration Rate of TAIKO Blower at the Low Pressure Specification

Roots Blower – Shaft Seal

A Shaft Seal

Standard
Dust lip Oil Seal

K Type
Double Mechanical Seal

B Bearing Seal

Standard
Double Oil Cutting Device

Oil Seal Type
Double Oil Seal

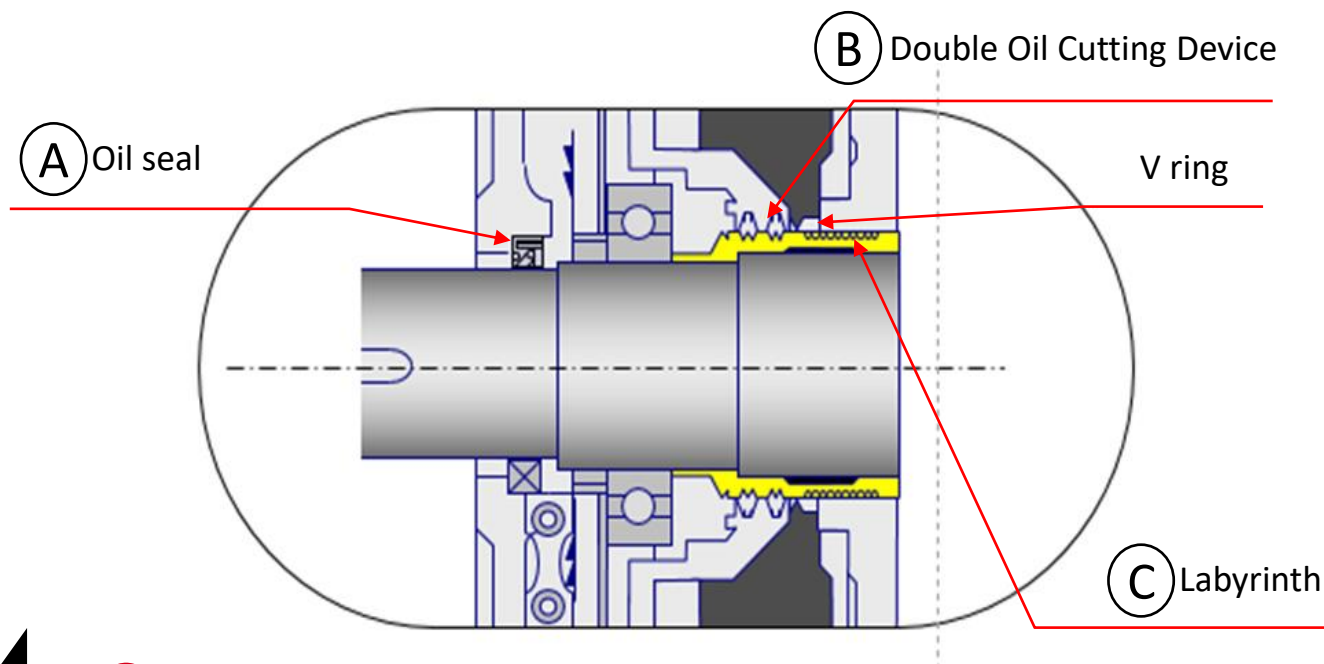
C Gland Seal

Standard
Labyrinth Type

Teflon Labyrinth Type
Teflon Labyrinth

D Type
4 -Double Mecha-Seal

Labyrinth 2 Chamber Type
Standard Labyrinth
+
Teflon Labyrinth

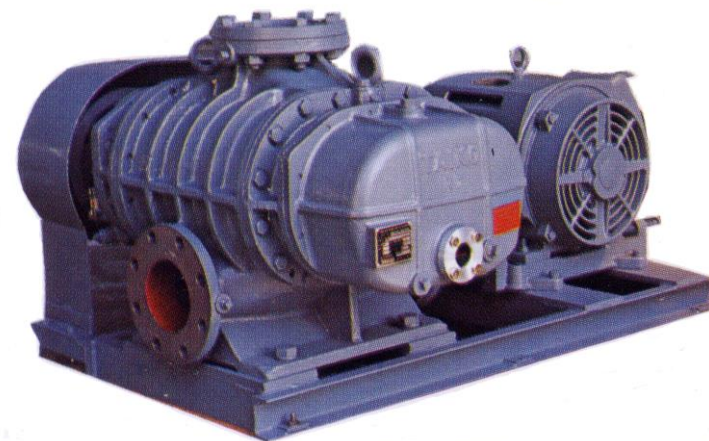


Roots Blower – Line-up

<R SERIES>

Specification

- BORE : 2" ~ 20"
- CAPACITY : 0.5 ~ 500m³/min
- PRESSURE : 1 Stage R type ~ 108kPaG (1.1kg/Cm²G)
2 Stage TR type ~ 196kPaG (2.0kg/Cm²G)



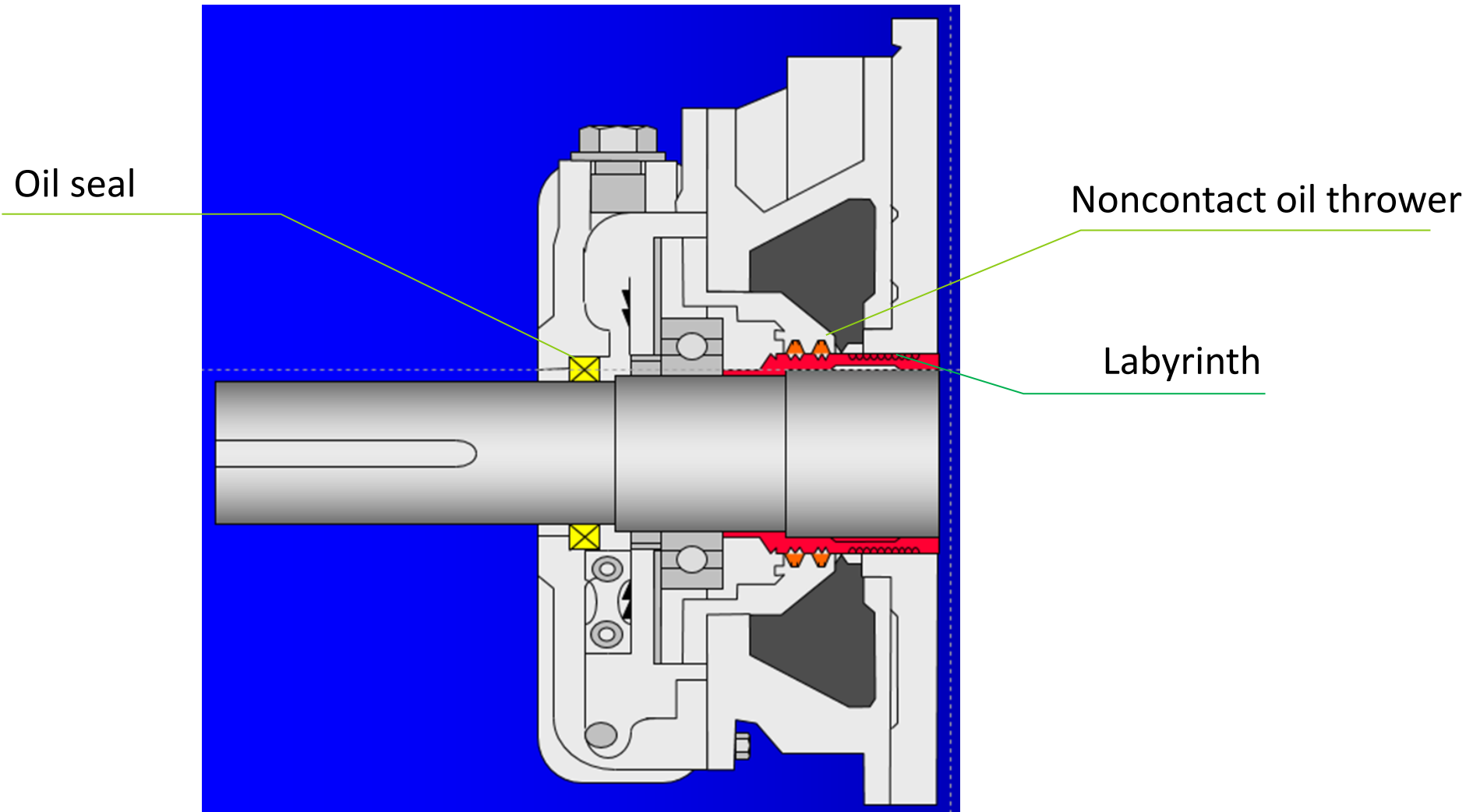
Vacuum Specification

- PRESSURE : 1 Stage(Dry type)R-V type ~ -49kPaG(-368mmHg)
1 Stage(Wet type)R-W type ~ -49kPaG(-400mmHg)
2 Stage(Wet type)TR-W type ~ -80kPaG(-600mmHg)

※ MEETS THE SPECIFICATION(MATERIAL/SHAFT) FOR SPECIAL APPLICATION

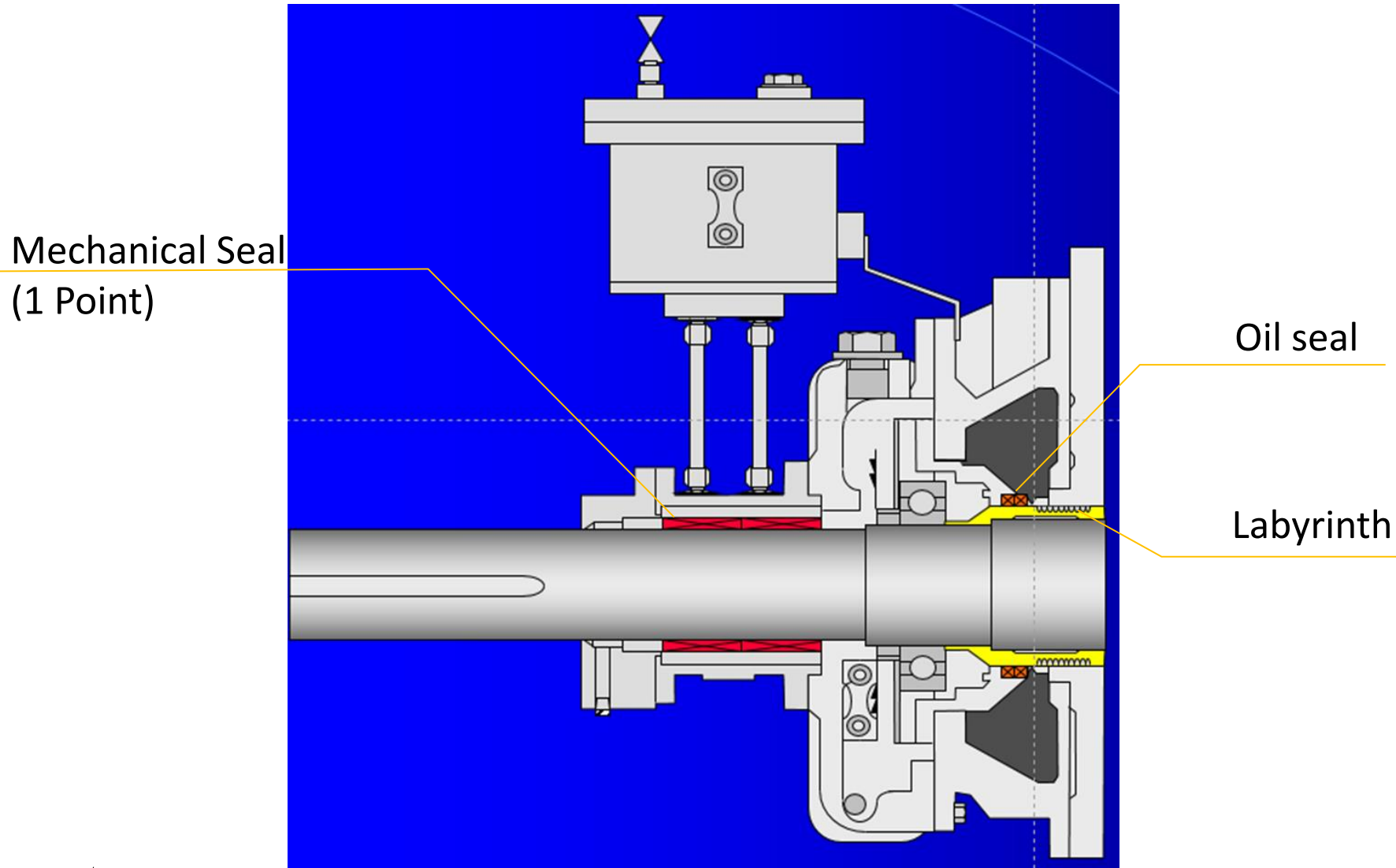
Roots Blower – Shaft Seal Structure

1. Labyrinth type



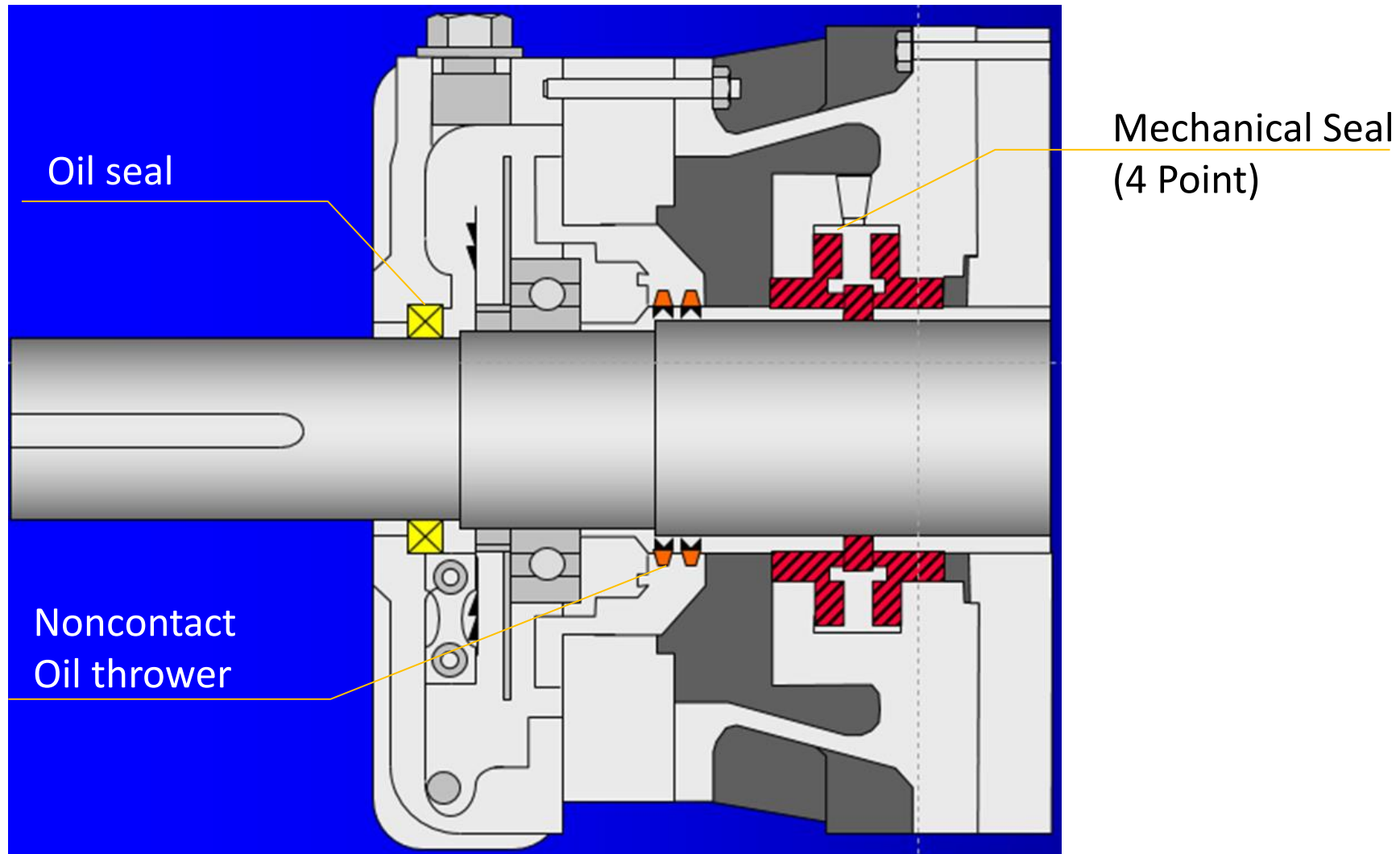
Roots Blower – Shaft Seal Structure

2. 1-Double Mehca-Seal Type



Roots Blower – Shaft Seal Structure

3. 4-Double Mehca-Seal Type



Roots Blower – Main Materials

Material	Material Symbol	JIS Code	Characteristic	Taiko Material Symbol
Gray Cast Iron	FC200	JIS G 5501	Standard material	
Ductile Cast Iron	FCD400	JIS G 5502	Strong strength, low temperature -30°C , high pressure	B
Carbon Steel Castings	SC410	JIS G 5101	Strong strength, low temperature, high temperature, corrosion resistance	F
Steel Castings for Low Temperature and High Pressure Service	SCPL1	JIS G 5152	For Low temp. -45°C	F
Stainless Steel Castings	SCS1	JIS G 5121		S
Stainless Steel Castings	SCS13	JIS G 5121	18-8 SUS316 equivalent, corrosion resistance, low temperature, high pressure	S
Stainless Steel Castings	SCS14	JIS G 5121	SUS316 equivalent	S
Aluminum Alloy Castings	AC4C	JIS H 5202	Spark prevention, light weight	
Stainless Steel Bars	SUS304 316	JIS G 4303	Corrosion resistance, low temperature	
Carbon Steel	S45C	JIS G 4051	Shaft standard material	
Chromium-molybdenum Steel	SCM435	JIS G 4105	Shaft material (strong strength)	
Chromium-molybdenum Steel	SCM415	JIS G 4105	Gear standard material	
Mild Steel	SS400	JIS G 3101		

Roots Blower – Surface Treatment

**Excluding Al painting,
the R type can provide surface treatment listed below**

(Surface Exposed to Gas)

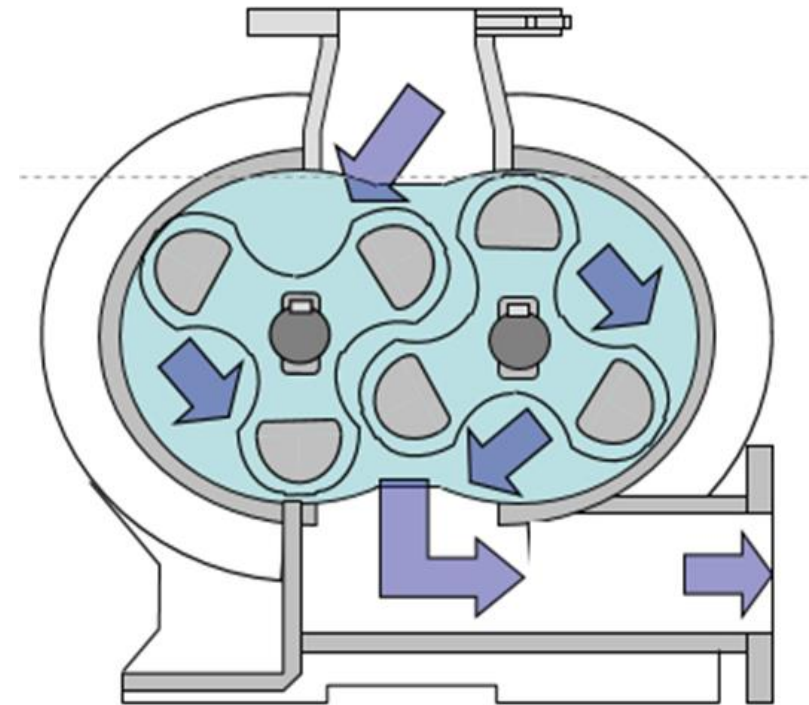
Classification	Type	Content	Characteristic
Painting	Aluminum	10~20 μ Al painting	Rust prevention, for export
	Cashew silver painting	10~20 μ cashew painting	Corrosion-resistance (automobile exhaust gas etc.)
Plating	Kanizen	Chemical Ni plating 50 μ	Corrosion-resistance (equally coated)
	Chromium	Electroplating Ni—Ni—Cr 20~30 μ	Corrosion-resistance (only rotor)
Coating	Teflon	Teflon 50 μ	Corrosion-resistance, spark prevention

Roots Blower – Line-up

<R SERIES (Y Type for High Pressure)>

Specification

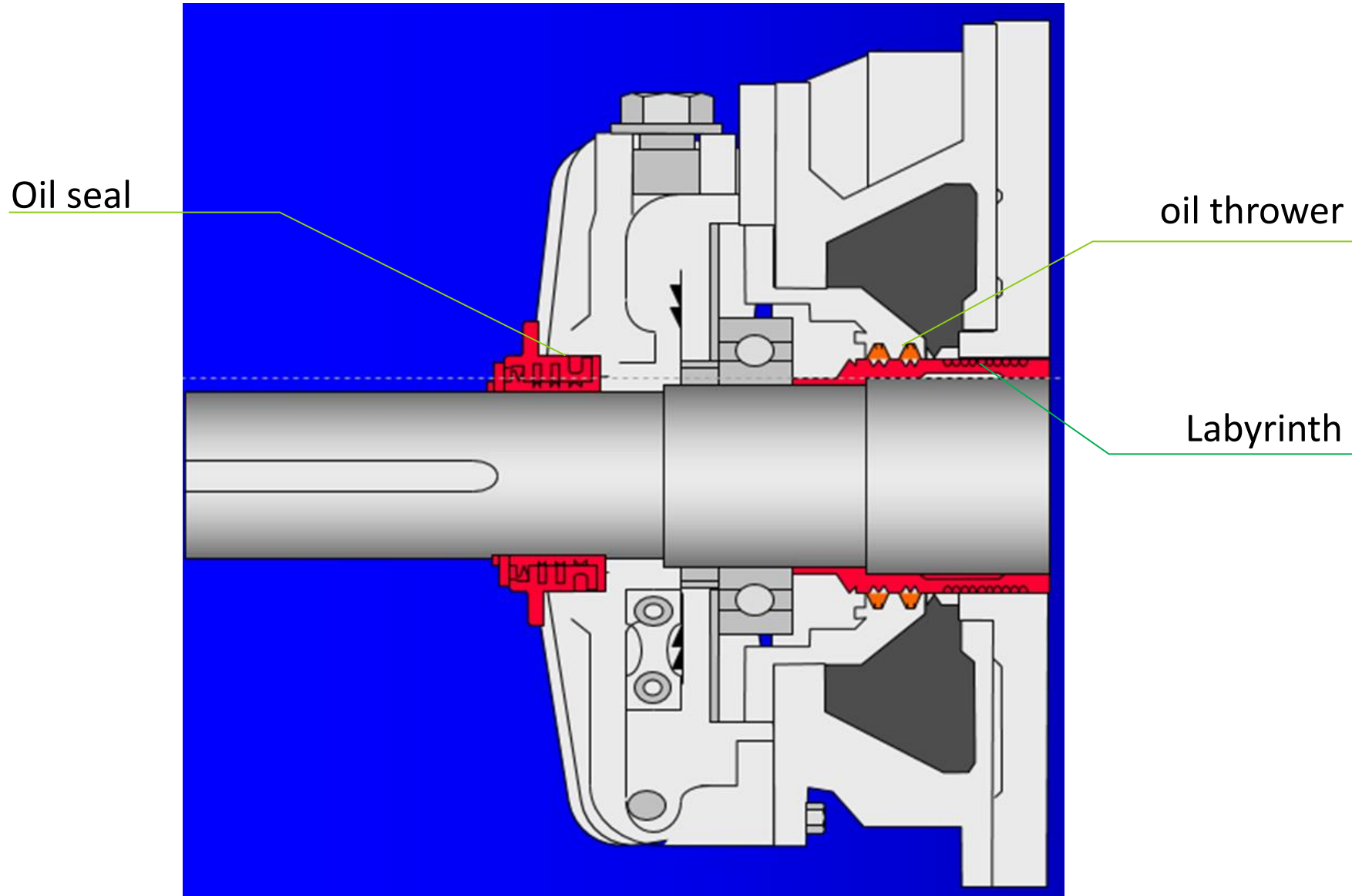
- BORE : 250 ~ 500A
- CAPACITY : 60 ~ 200m³/min
- PRESSURE : 80 ~ 120kPaG
- TYPE : 3 Lobe Single Stage
- COOLING : Air / Water Cooling



【MAIN TARGET】

- OXIDATION BLOWER FOR FLUE GAS DESULFURIZATION PLANT IN POWER STATION
- ROTARY BLOWER FOR PNEUMATIC CONVEYOR

Roots Blower – Y type Shaft Seal Structure



Roots Blower – Y type Main Materials

Material	Material Symbol	JIS Code	ASTM SPEC.	Characteristics
Gray Cast Iron	FC200	JIS G 5501	A-48 CLASS NO.30	Standard Material
Ductile Cast Iron	FCD400	JIS G 5502	60-40-18	Strong strength, low temperature -30°C , high pressure
Carbon Steel	S45C	JIS G 4051	A-194 GRADE 2H	Shaft Standard Material
Chromium-molybdenum Steel	SCM435	JIS G 4105	AISI4137	Shaft Material (Strong strength)
Chromium-molybdenum Steel	SCM415	JIS G 4105	CARBON AND ALLOY STEEL	Gear Standard Material

Roots Blower – Line-up

<L SERIES>

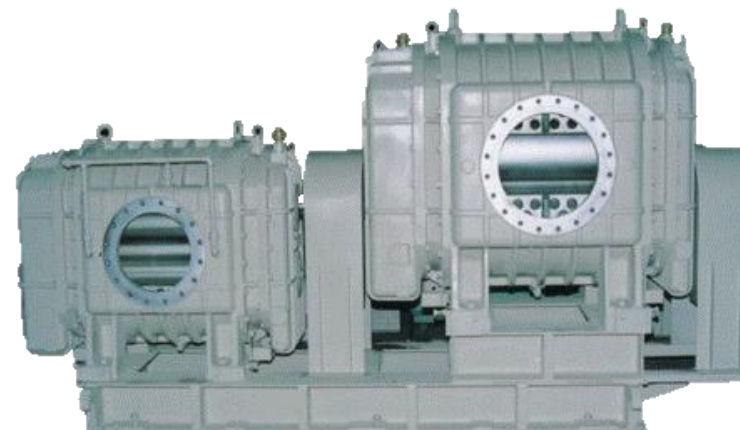
Specification

- BORE : 6" ~ 28"
- CAPACITY : 10 ~ 800m³/min
- PRESSURE : 1 Stage L type ~ 118kPaG(1.2kg/Cm²G)
2 Stage TL type ~ 216kPaG(2.2kg/Cm²G)

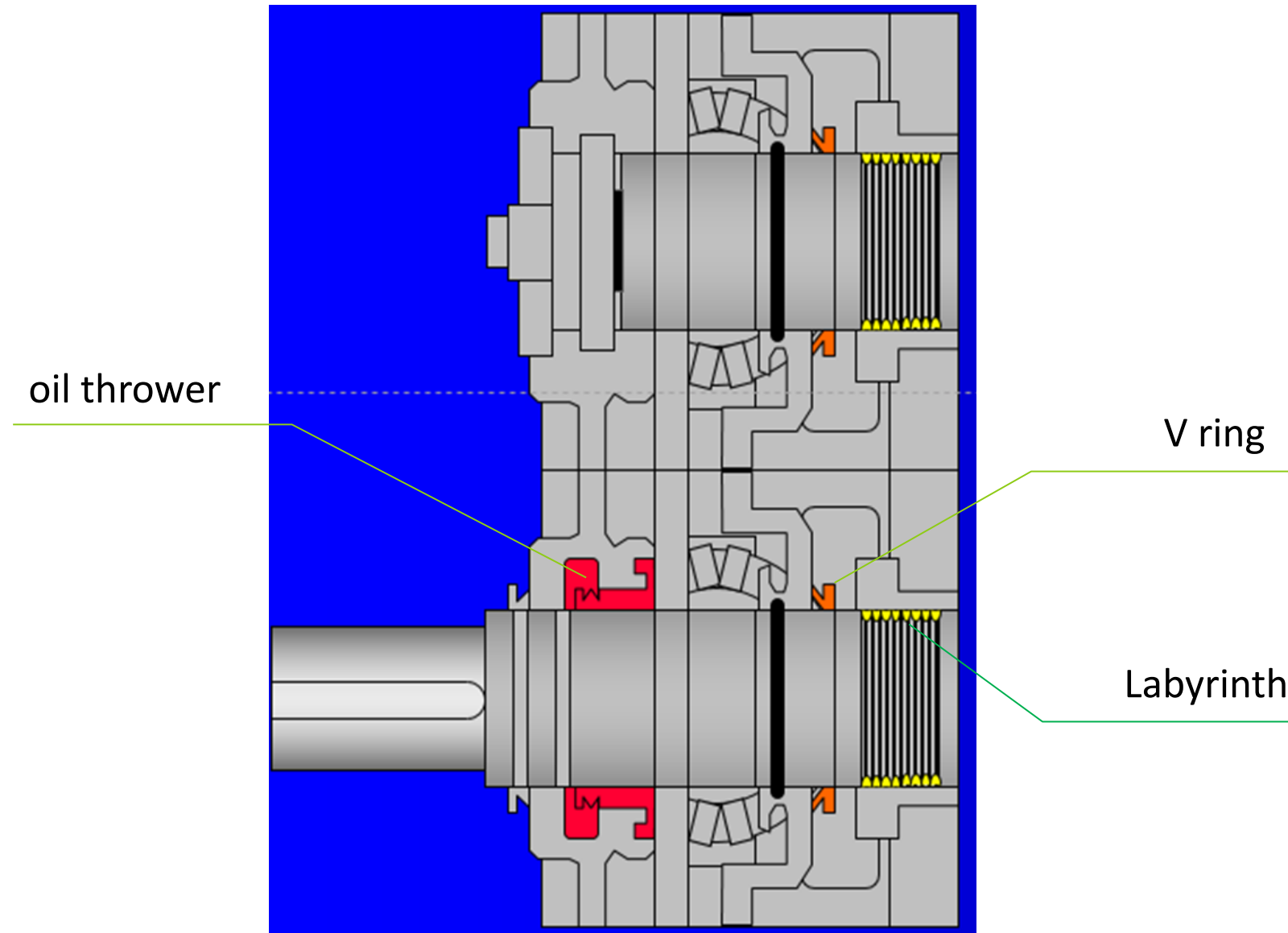
Vacuum Specification

- PRESSURE : 1 Stage(Dry type) L-V type ~ -49kPaG(-368mmHg)
1 Stage(Wet type) L-W type ~ -53kPaG(-400mmHg)
2 Stage(Wet type) TL-W type ~ -80kPaG(-600mmHg)

- ❌ FOR LARGE CAPACITY SPECIFICATION
- ❌ PRODUCT FOR AIR APPLICATION



Roots Blower – Shaft Seal Structure



Roots Blower – Type Main Materials

Material	Material Symbol	JIS Code	Characteristics	Taiko Material Symbol
Gray Cast Iron	FC200	JIS G 5501	Standard Material	
Ductile Cast Iron	FCD400	JIS G 5502	Strong strength, low temperature – 30°C, high pressure	
Carbon Steel	S45C	JIS G 4051		
Chromium–molybdenum Steel	SCM435	JIS G 4105	Shaft Material (Strong strength)	
Chromium–molybdenum Steel	SCM415	''	Gear Standard Material	
Mild Steel	SS400	JIS G 3101		

Roots Blower – Line-up

<SSR/TS/TBS SERIES>

Specification

- BORE : 3/4" ~ 6"
- CAPACITY : 0.1 ~ 28m³/min
- PRESSURE : SSR/TS/TBS type ~ 60kPaG(0.61kg/Cm²G)

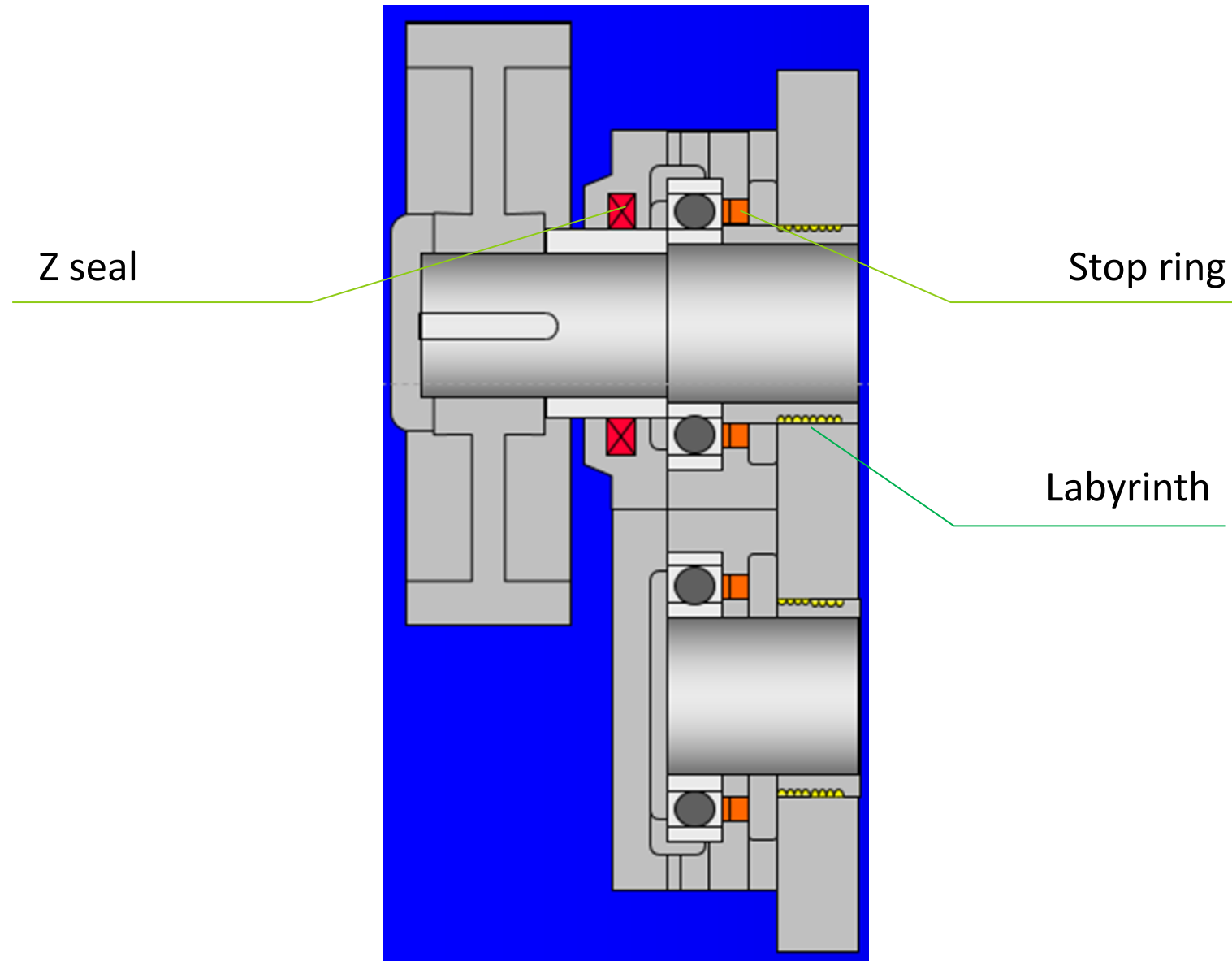
Vacuum Specification

- PRESSURE : (Dry type)TS-V type ~ -34.3kPaG(-258mmHg)
(Dry type)SSR-V type ~ -39.2kPaG(-294mmHg)

- ※ FOR SMALL CAPACITY SPECIFICATION
- ※ LOW NOISE/VIBRATION/PRICE AND SHORT LEAD-TIME PRODUCT
- ※ OIL FREE, LOW RUNNING COST



Roots Blower – Shaft Seal Structure

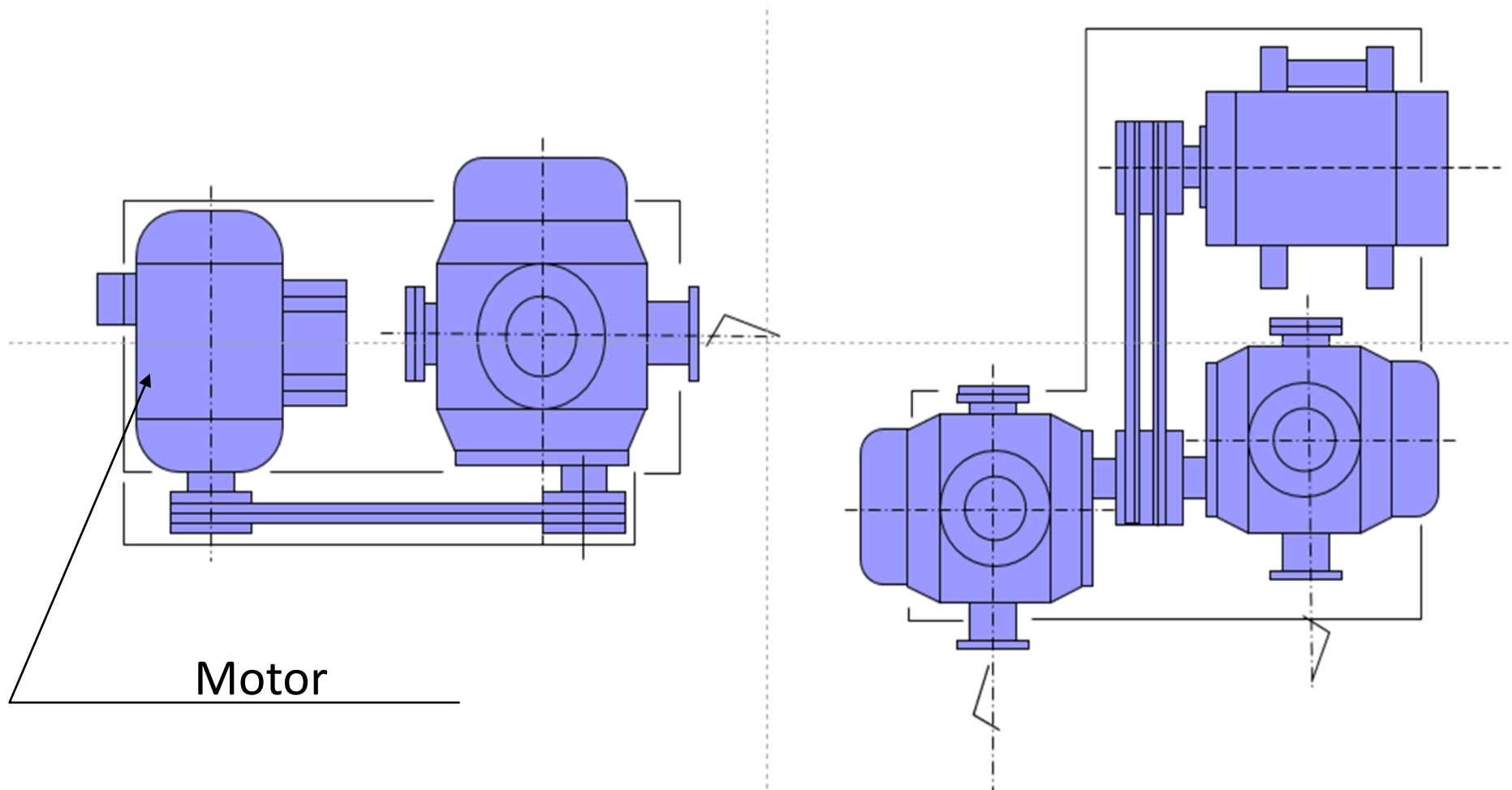


Roots Blower – Main Materials

Material	Material Symbol	JIS Code	Characteristic	Taiko Material Symbol
Gray Cast Steel	FC200	JIS G 5501	Standard material	
Carbon Steel	S45C	JIS G 4051	Shaft standard material	
Chromium-molybdenum Steel	SCM435	JIS G 4105	Gear standard material	
Mild Steel	SS400	JIS G 3101		

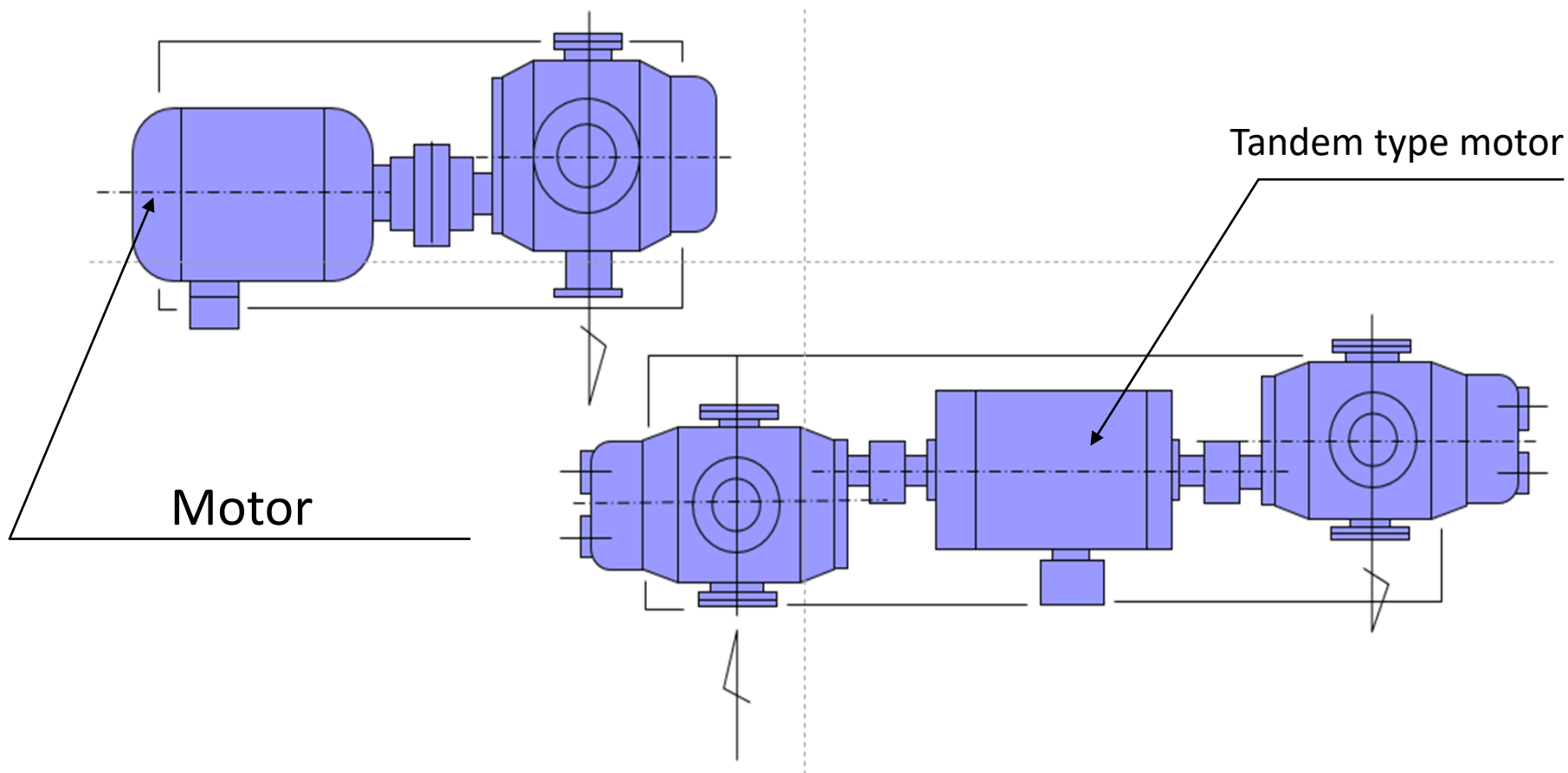
Roots Blower – Driving Method

1. V-Belt driven with counter shaft



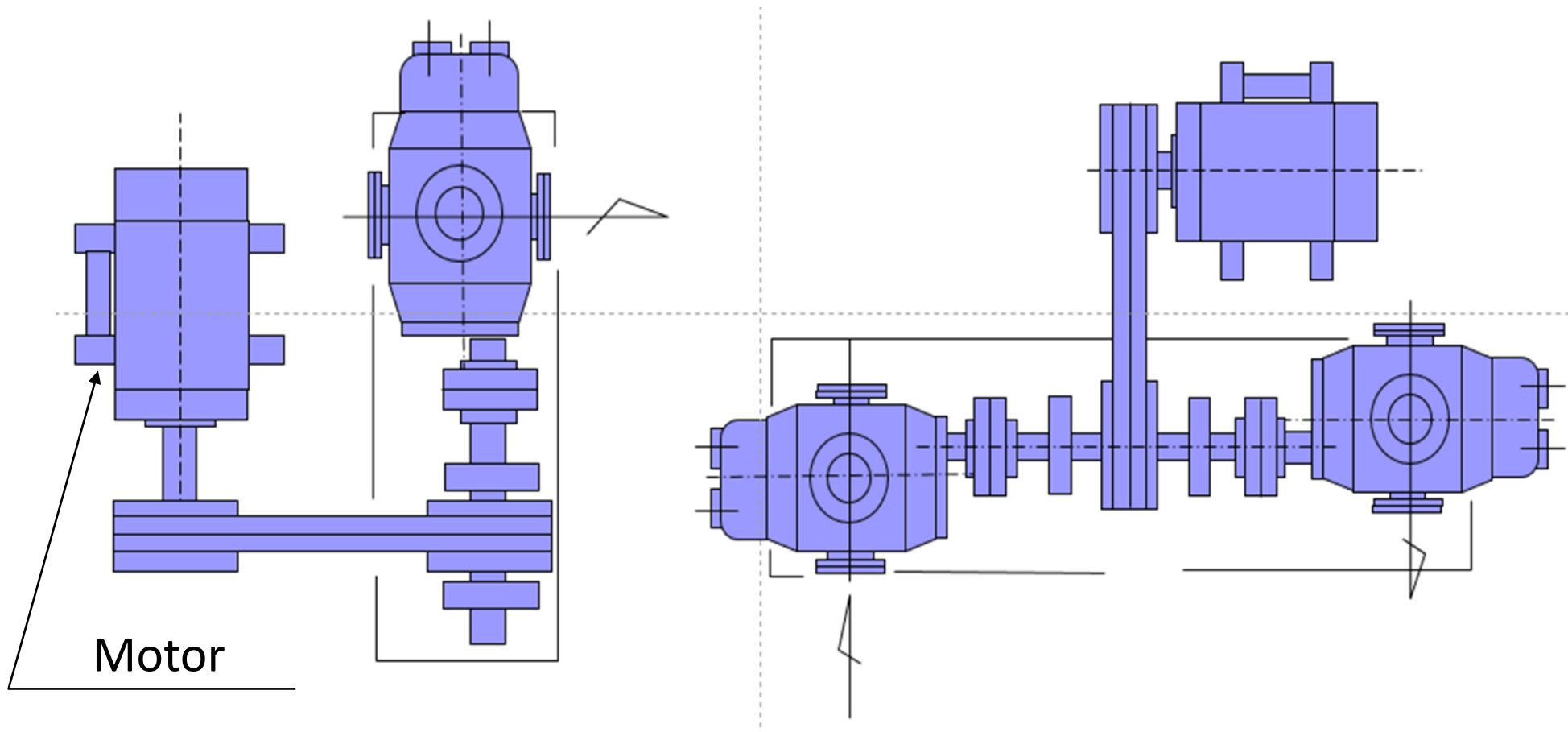
Roots Blower – Driving Method

2. Direct Coupling

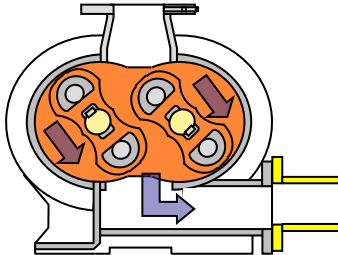
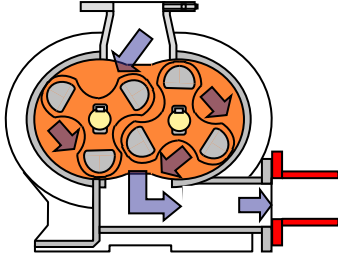


Roots Blower – Driving Method

3. V-Belt driven



Roots Blower – Comparing 2 & 3 Lobe

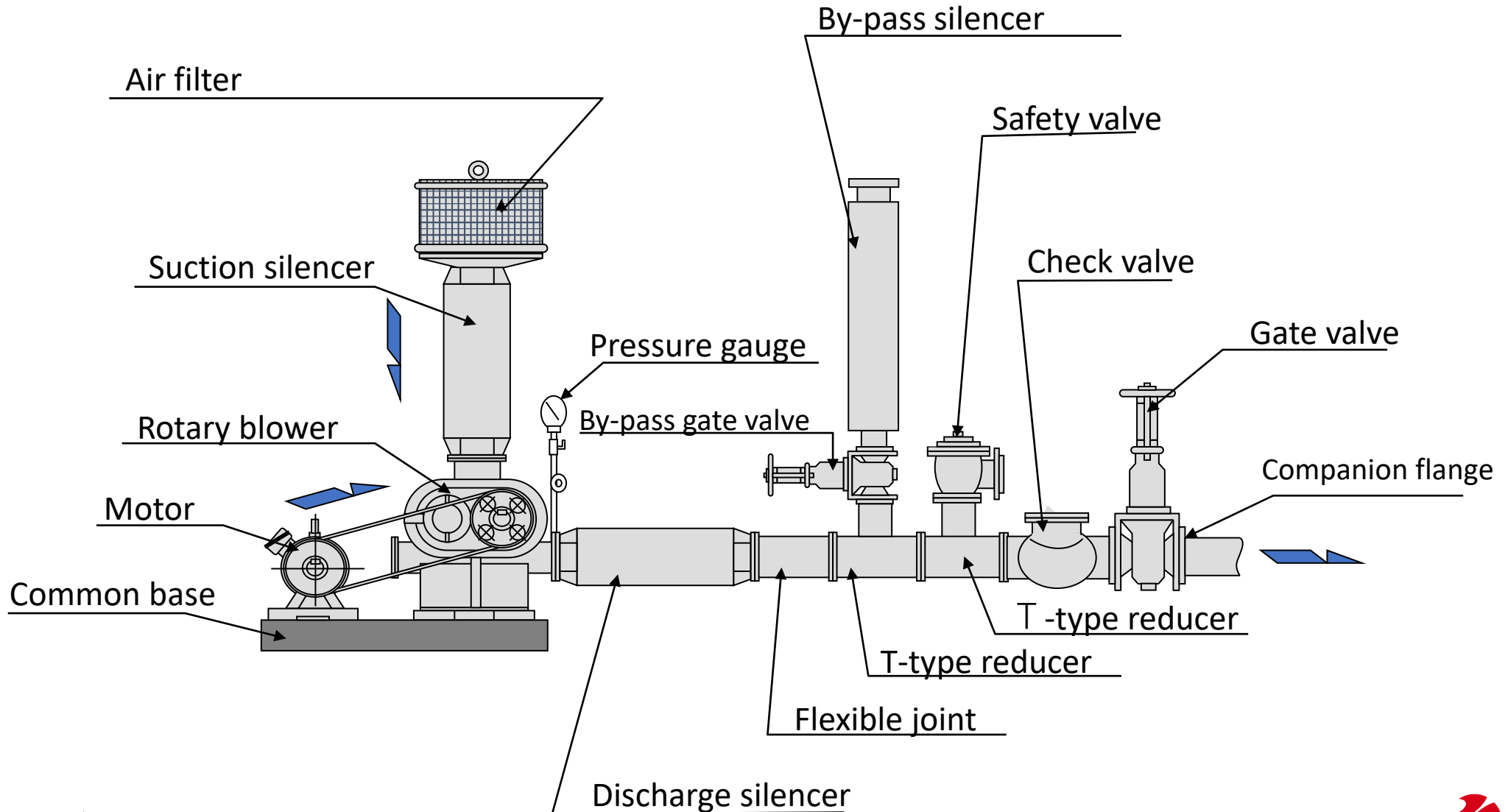
Contents	2 Lobe Type(Taiko L/R Type)	3 Lobe Type
Model		
Displacement efficiency	From the effect of the step at the impeller top, efficiency is big as the internal leak can be reduced	Efficiency is small as the internal leak increases due to the line seal at the impeller top
Discharge Time per 1 Rotation	4 Times	6 Times
Shaft Power	Particularly no difference. Low as the displacement efficiency is high	Particularly no difference. High as the displacement efficiency is low
Internal Leak amount	Leak amount from the side clearance is small from the effect of the step of the impeller	Leak amount from the side clearance is big as the actual cross section average width of the impeller is small
	Leak amount from the top clearance is small from the effect of the step of the impeller	Leak amount from the top clearance is big as no effect from the step of the impeller
Noise	Particularly no difference, but noise is low as the rotation speed is low due to the theoretical volume is large per one rotation	Particularly no difference

Roots Blower – Accessories

1. AIR FILTER	INDOOR, OUTDOOR
2. SILENCER	Snubber/acoustic Type • WET-TYPE SILENCER
3. FLEXIBLE JOINTS	METAL, RUBBER TYPE
4. SAFETY VALVE	FULL BORE, OTHERS, VACUUM BREAKER
5. CHECK VALVE	INSERT DISK TYPE, DUO-CHECK TYPE
6. GATE VALVE	
7. ACOUSTICAL PANEL	
8. COOLER	INTER-COOLER, AFTER-COOLER
9. LINE-FILTER	
10. FITTING REDUCER	
11. OTHERS	

Roots Blower – Configuration

Configuration (Dry type)



Roots Blower – Summary

① **HIGH EFFICIENCY DUE TO SPECIAL PROFILE IMPELLER**

[adopted for only R Model • • low pressure dry type having approx.95% efficiency]

② **LOW OSCILLATION AND LOW NOISE BY COMPLETE BALANCING**

➡ **ACHIEVED BY ITS DURABLE PARTS/STRUCTURE AND WALL THICKNESS**

③ **LONG LIFE AND LOW NOISE ASSURED BY THE USE**

OF THE HIGHEST QUALITY PILOT GEAR

➡ **ACHIEVED BY THE TOOTH WIDTH WITH SUFFICIENT MARGIN, MODULUS,
HIGH QUALITY MATERIALS, OPTIMUM HEAT PROCESSING AND
TOOTH GRINDING ACCURACY**

④ **A COMPLETE PRODUCT UNDER OUR COMPANY QUALITY CONTROL SYSTEM**

Gear Pump

주요 용도

- 윤활유 펌프
- 연료유 펌프



Series	펌프 형식	토출량 (m3/hr)	토출압력 (Mpa)
NHG	내장 베어링 가로형	0.25 ~ 30	~ 0.6
NHG-MFT	내장 베어링 가로형	0.5 ~ 30	~ 0.6
NHGH	내장 베어링 가로형	0.41 ~ 20	~ 1.6
HHC	내장 베어링 가로형	0.80 ~ 20	~ 1.6
	허용 흡입압력 범위 : -0.05 ~ 0.60 Mpa		
HG	내장 베어링 가로형	29 ~ 100	~ 0.6
BHG	내장 롤러베어링 가로형	33 ~ 200	~ 1.0
VG	내장 베어링 세로형	12 ~ 100	~ 0.6
HNP	내장 베어링 플랜지형	3 ~ 30	~ 0.6
	비고 : 엔진 직결 펌프		

주요 용도

- 화학약품액 펌프
- 유기용제 펌프



Series	펌프 형식	토출량 (m3/hr)	토출압력 (Mpa)
WL	외장 베어링 가로형	50 ~ 1800	~ 0.6
	비고 : 타이밍기어 부착 펌프 / 비윤활성 액체 대응		
SP	내장 베어링 가로형	50 ~ 1800	~ 0.6
	비고 : 주요재질 SUS		
SJ	내장 베어링 가로형	50 ~ 1800	~ 0.6
	비고 : 냉각 자켓 부착 펌프		

주요 용도

- 카고펌프
- 아스팔트 이송



Series	펌프 형식	토출량 (m3/hr)	토출압력 (Mpa)
CGL	외장 롤러베어링 가로형	60 ~ 1500	~ 1.0
CWL	외장 롤러베어링 가로형	120 ~ 600	~ 1.0
	비고 : 타이밍기어 부착 펌프		
CUL	내장 롤러베어링 가로형	60 ~ 200	~ 1.0
CJH	내장 롤러베어링 가로형	200 ~ 500	~ 1.0
	비고 : 냉각 자켓 부착 펌프		

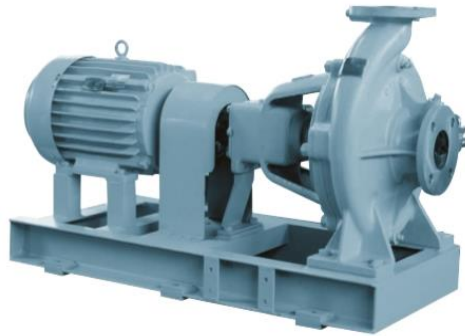
3축 펌프(3 Screw Pump)

■ 3축 펌프(3 Screw Pump) 모델별 사양

- 1) 압력 : Max. 2.5MPa (저압 펌프)
- 2) 유량 : 아래 표 참조

Model (Series)	Capacity (m3/hr)	Pressure (MPa)	Fluid Viscosity (mm2/s)	Fluid Max. Temp. (°C)	Suction Flange	Type	Main Purpose
MSH	1~30	0.6	25.8	150	40~100A	Horizontal	F.O. L.O. pump
MSDK-MA	0.3~35	1.0	20	150	32~125A	Horizontal	F.O. L.O. pump
MSDK-MG	4~35	1.0	20	150	32~125A	Horizontal	F.O. L.O. pump
MSB	4~15	2.5	25.8	150	50~80A	Horizontal	F.O. Burning pump
MSE-X	2~30	2.5	25.8	150	50~100A	Horizontal	F.O. Burning pump
MSH-X	2~30	2.5	25.8	150	50~100A	Horizontal	F.O. Burning pump
MST	20~300	0.8	25.8	80	150~300A	Vertical	F.O. L.O. pump
MST-H	20~160	1.2	25.8	80	150~250A	Vertical	L.O. pump
MSTE-H	20~120	0.8	25.8	80	150~200A	Vertical	F.O. pump

Centrifugal Pump 1



EHC series



ESC series



ESD series



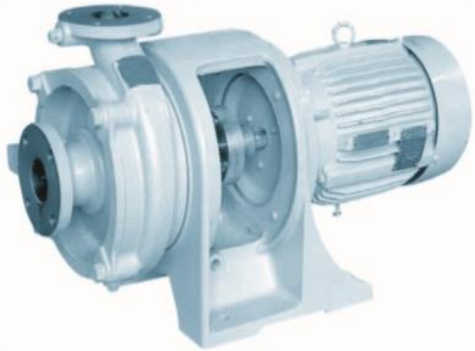
EMD series



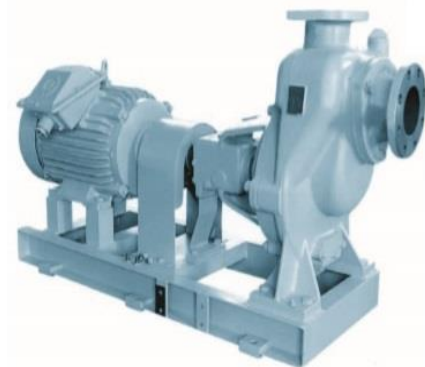
EMC series

Model	펌프형식	용도	토출량 (m ³ /h)	최대 토출압력 (m)
EMC	Vertical Single stage , Single-suction Type	C.W pump , Sea water pump	30 to 600	to 35
ESC	Vertical Single stage , Single-suction Type	C.W pump , Sea water pump	30 to 600	to 35
Remarks : Spacer coupling type				
EMD	Vertical Single stage , Double-suction Type	C.W pump , Ballast pump	500 to 3800	to 35
ESD	Vertical Single stage , Double-suction Type	C.W pump , Ballast pump	500 to 3800	to 35
Remarks : Spacer coupling type				
EHC	Horizontal Single stage , Single-suction Type	C.W pump , Sea water pump	40 to 280	to 70

Centrifugal Pump 2



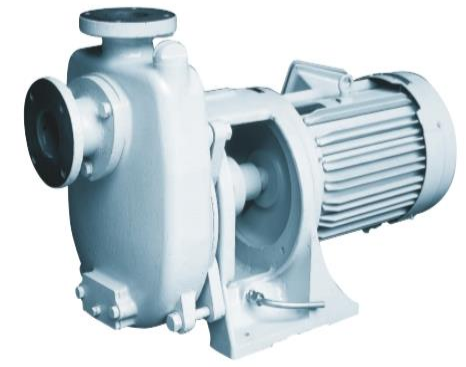
TMC series



TMS series



TMC(TMV) series



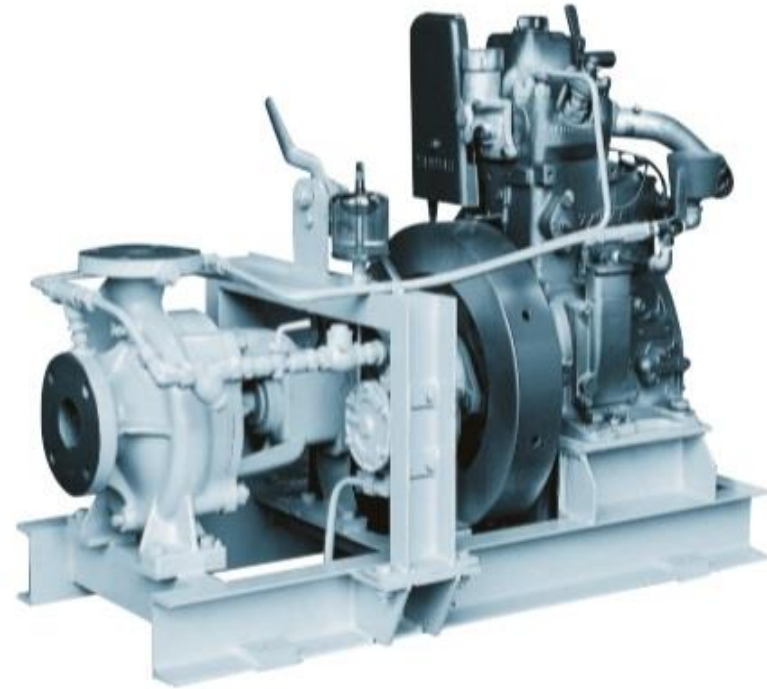
EHS series

Model	펌프형식	용도	토출량 (m ³ /h)	최대 토출압력 (m)
TMC	Horizontal Single-stage , Single-suction type	C.W pump , Sea water pump	10 to 150	to 50
TMS	Horizontal Single-stage , Single-suction type	Fire & G.S pump , Bilge & Ballast pump	7 to 140	to 40
EHS	Horizontal Single-stage , Single-suction type	Fire & G.S pump , Bilge & Ballast pump	8 to 380	to 55
TMC(TMV)	Horizontal Single-stage , Single-suction type	정수, 위생 펌프	2 to 25	to 50

사양 및 성능 곡선



EMCN series



EHCV series

Model	펌프형식	용도	토출량 (m ³ /h)	최대 토출압력 (m)
EMCN	Vertical Single stage , Single-suction Type	비상용 소방펌프	30 to 120	to 95
Remarks : Self-priming/ Electric motor driven type				
EHCV	Horizontal Single stage , Single-suction Type	비상용 소방펌프	15 to 60	to 80
Remarks : Self-priming/ Diesel Engine motor driven type				

Products Summary

Q : Taiko has variety of products but which products are available for petrochemical, chemical and fertilizer projects?

Which Taiko Products can be supplied to those projects?

Roots Blowers	◎	customizable / rich experience
Vacuum Pumps	◎	customizable / rich experience with screw type dry pump
Gear Pumps	△	not comply with API
Screw Pumps	△	not comply with API
Centrifugal Pumps	×	not comply with API / not suitable for severe process
Bilge Separator	×	applicable for mainly Marine use
Sewage Treatment Device	×	applicable for mainly Marine use
Diaphragm Blowers	×	available only small capacity and mfr standard specs

※ Basically, All Taiko products have long life time over 15~20 years at least.

KOREA : 타이코진공기술(주)

충남 천안시 서북구 직산읍 금곡로 113-14

CHINA

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SHANGHAI 200122.

2. 大晃機械（青島）有限公司

TAIKO KIKAI (QINGDAO) CO.,LTD
CHANGBAISHAN STREET, LIUTING AIRPORT INDUSTRIAL PARK
OF SHUANG YUAN ROAD WEST, CHENG YANG DIST., QINGDAO
CITY, SHANDONG 266108.

TAIWAN : 吉川製作所股份有限公司

1F, No. 122-12, JHONGHUA RD, HSINCHU INDUSTRY PARK
HUKU, HSINCHU 303

- ※ **Combination of various structure and material is available through from our technology and enrich experience that other manufacturer cannot offer.**
- ※ **For special gas application, no other manufacturer knows better than we do.**
- ※ **Excellent reliability and durability compared to other manufacturers.**
- ※ **Save maximum costs and requires minimum spares for maintenance and make structural design based on focusing users first consideration.**

TAIKO FUFILS YOUR EXPECTATION

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