



# Roots blowers

KLEEblower KSS series

## **Klee Engineering – we know the industry**

Klee Engineering in Taiwan is providing local services in Asia to our international sales network and OEM customers within product development, design, sourcing, quality control and logistics.

Klee Engineering is marketing and selling a range of branded products within flow and fluid techniques, electrical motors as well as accessories from the Klee Group's product range including more than half a million items in the following groups: Motors, Pumps & Blowers, Gears & Gear-motors, Controls & Electronics, Pneumatics & Hydraulics, Linear Motion Technology, Transmission, Machine-, DIN and Norm Parts, Rubber & Plastics.

Our Klee product-brands ensure a high level of quality and reliability.

We are a part of the KLEE Group with headquarters in Denmark.



# KLEE solutions





# KLEEblower “roots blower”

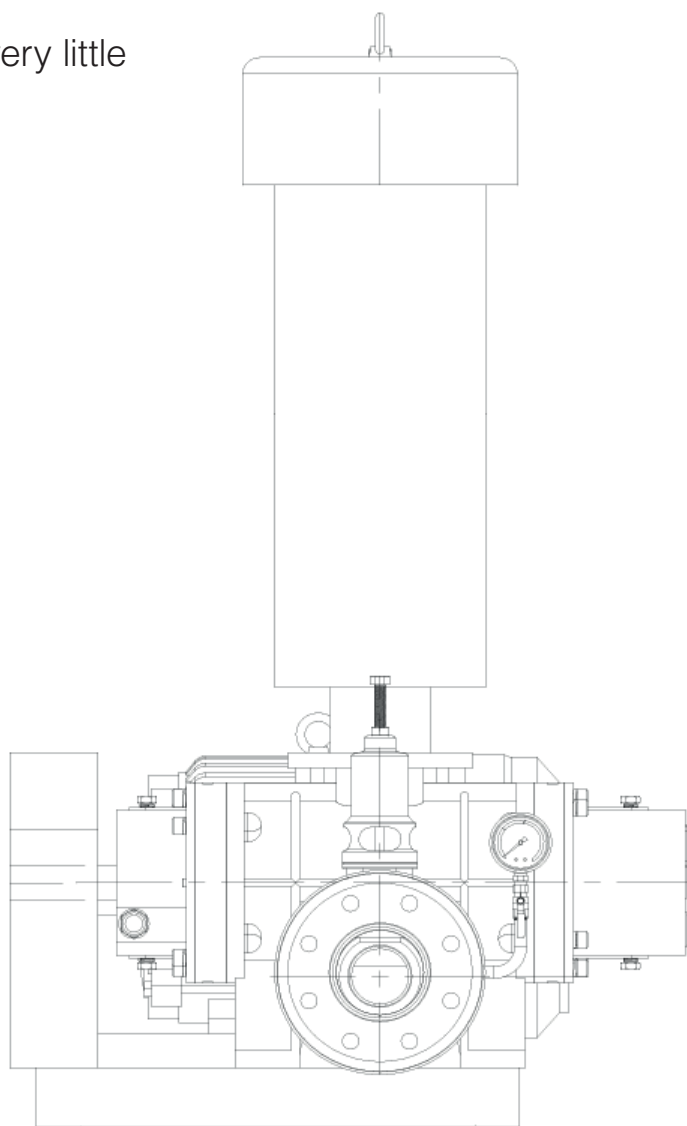
## A reliable and durable solution

KLEEblower is our range of 3-lobe roots blowers among other blowers like rotary vane pumps and side channel- and turboblowers.

We have chosen the design and top quality components for manufacturing ourselves, so we can offer our customers the best possible solution.

Production is quality controlled and approved by Klee employees (QC engineers) before leaving the manufacturing site.

Roots KLEEblowers are reliable, require very little maintenance and are durable.



# 3-lobe roots blowers

## Characteristics

**Features:**

1. Wide range of capacity, pressure and vacuum.

**Bore size:**

32 mm ~ 400 mm (1-1/4" ~ 14")

**Capacity:**

0.3 ~ 275 m<sup>3</sup>/min (8 ~ 9700 CFM)

**Pressure:**

- KBAP up to 8000 mmAq (0.8 Kg/cm<sup>2</sup>).
- KSW up to 10000 mmAq (1 Kg/cm<sup>2</sup>).
- KBDP (2 stage type) up to 20000 mmAq

**(2 Vacuum):**

- 1 stage up to -500 mmHg
- 2 stage up to -600 mmHg
- high pressure roots up to -700 mmHg

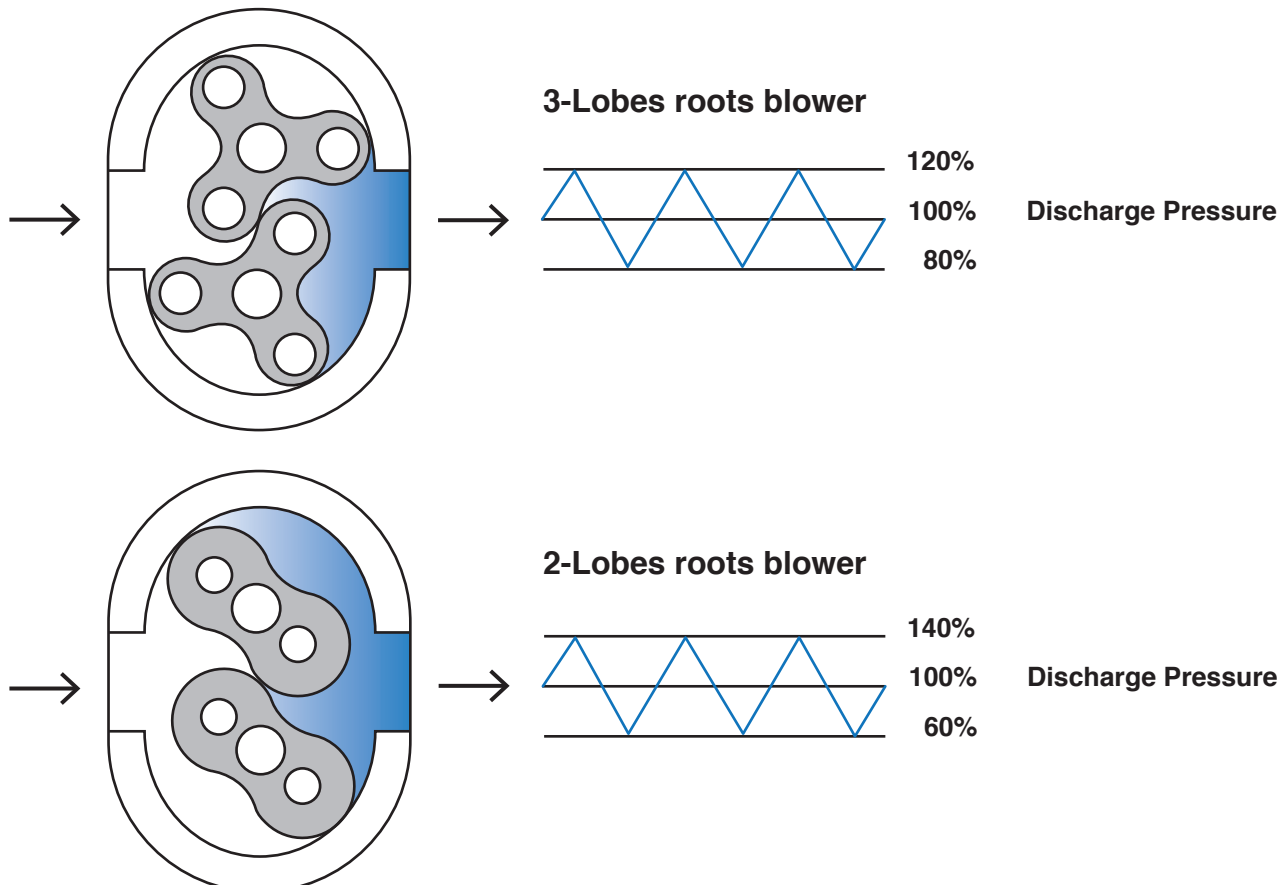
2. Blowed air without oil
3. Computerized balance to lower noise level and vibration
4. Steady output, steady capacity
5. Rotor of special design, high efficiency, low consumption
6. Solid construction, no defect
7. First degree gear, high precision, low consumption
8. Standardized processing system
9. One step process for rotor
10. Piston ring installed.

**2 lobes and 3 lobes**

The difference between roots blowers of 2 lobes and 3 lobes: Traditional 2 lobes roots blower has high vibration and noise level, this causes short life of parts.

**Advantage of 3-lobe roots blower:**

1. Low reverse pressure, steady capacity, low vibration, low noise level
2. Low fluctuation of outlet pressure, makes the motor, rotor and gear last longer
3. In the same RPM, 3-lobe roots blower has low noise level, low vibration, longer life.





# Applications & unit conversion

## Roots KLEEblower

### Applications

- |   |                           |                       |
|---|---------------------------|-----------------------|
| 1. Waste water                            | 5. Ventilation, desolates | 10. Aquarium          |
| 2. Dust collecting after burning          | 6. Environment caring     | 11. Conveyance by air |
| 3. Equipment of dust collection           | 7. Air exhaust, air dry   | 12. Liquid agitation. |
| 4. Vacuum dehydration for<br>dying, paper | 8. Air transportation     |                       |
|   | 9. Gas, bulk conveyance   |                       |

### Unit conversion (pressure)

Pressure	mbar	Pa	atm	1bt/in <sup>2</sup>	Kaf/cm <sup>2</sup>	in HG	mmAq
1 mbar	1	10 <sup>2</sup>	9.869x10 <sup>-4</sup>	1.45x10 <sup>-2</sup>	1.02x10 <sup>-2</sup>	2.953x10 <sup>-2</sup>	10.197
1 Pa	0.01	1	9.87x10 <sup>-6</sup>	1.45x10 <sup>-4</sup>	1.02x10 <sup>-5</sup>	2.953x10 <sup>-4</sup>	0.102
1 atm	1.013x10 <sup>3</sup>	1.013x10 <sup>5</sup>	1	14.7	1.033	29.92	1.033x10 <sup>4</sup>
1 lbf/in <sup>2</sup>	68.95	6.895x10 <sup>-2</sup>	6.805x10 <sup>-2</sup>	1	7.03x10 <sup>-2</sup>	2.036	7.03x10 <sup>-2</sup>
1 kgf/cm <sup>2</sup>	9.807x10 <sup>2</sup>	9.807x10 <sup>4</sup>	0.968	14.22	1	28.96	10 <sup>4</sup>
1 in Hg	33.86	3.386x10 <sup>3</sup>	3.342x10 <sup>-2</sup>	0.491	3.45x10 <sup>-3</sup>	1	3.45x10 <sup>2</sup>
1 mmAq	9.807x10 <sup>-2</sup>	9.807	9.667x10 <sup>-5</sup>	1.42x10 <sup>-3</sup>	10 <sup>-4</sup>	2.896x10 <sup>-3</sup>	1

Pressure conversion formula:

1 Pa = 0.102 mmAq

1 mbar = 10.197 mmAq

1 mmHg = 13.6 mmAq

1 psi = 703 mmAq

1 Torr = 133.3 Pa

1 Torr = 1.333 mbar

### Unit conversion (capacity)

Capacity	m <sup>3</sup> /min	m <sup>3</sup> /h	L/min	ft <sup>3</sup> /min (cfm)
1 m <sup>3</sup> /min	1	0	1000	35.31
1 m <sup>3</sup> /h	0.017	1	16.67	0.589
1 L/min	0.001	0.06	1	0.035
1 ft <sup>3</sup> /min (cfm)	0.028	1.699	28.32	1

### Unit conversion (power)

Power	kg-m/sec	kW	HP	PS
1 kg-m/sec	1	0.01	0.013	0.013
1 kW	101.97	1	1.341	1.360
1 HP	76.038	0.746	1	1.014
1 PS	75	0.736	0.986	1



# Enquiry information

## What you need to know before ordering

### 1. Application and conditions

Describe the purpose of use, continuous or intermittent operation.

### 2. Capacity

Describe whether the flow rate is at standard condition or normal condition (unless specified, the flow rate will be calculated as a flow rate under suction condition, and it is not handled as discharge flow rate i.e. at 760 mmHg, 20, 65% RH or standard condition.)

### 3. Pressure

Describe whether pressure is constant or variable, if variable, specify the

range and the relationship between air flow rate and pressure. Describe whether pressure shows static pressure of the discharge or difference between suction and discharge pressure. State whether suction pressure is atmospheric pressure. Otherwise, specify suction and discharge pressure respectively.

### 4. Type of Gas and Specific Gravity

Specify the following points: Type of gas and its components, content of impurities and their sizes, specific gravity, chemical properties, suggestions for materials, explosive and/or toxic nature (regarded as nor-

mal-temperature, normal-pressure air unless specified).

### 5. Gas Temperature KLEE Roots

Blowers are normally used for normal temperature at suction. If suction temperature is higher than normal temperature, please inform KLEE.

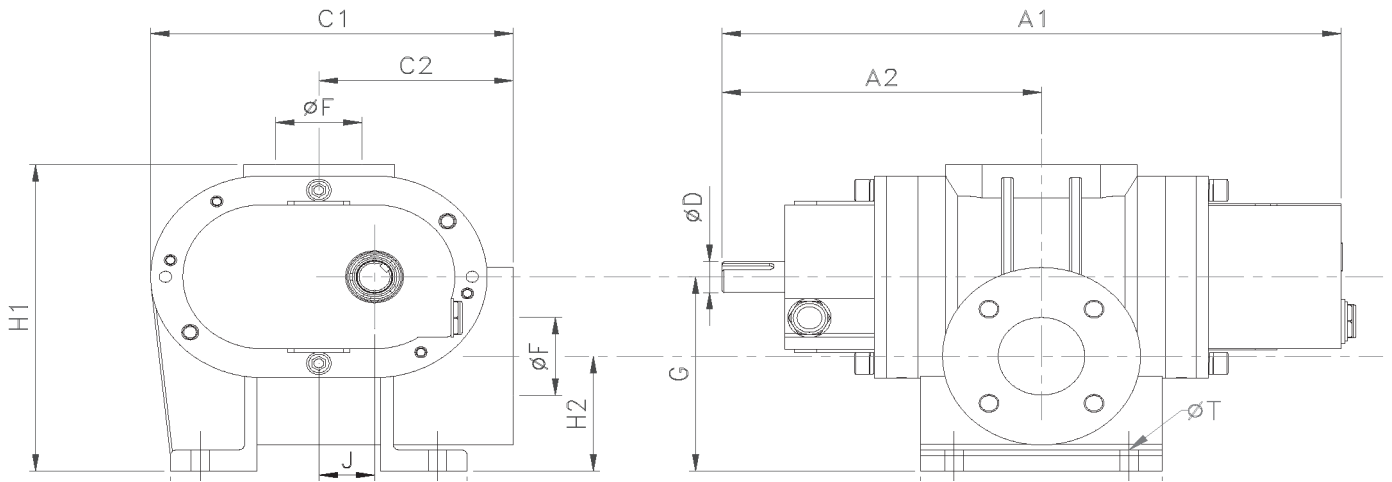
### 6. Type of Prime Mover

When a motor is used as the prime mover, specify the voltage, frequency and power supply condition etc.



# Dimensions

## KSS main-body

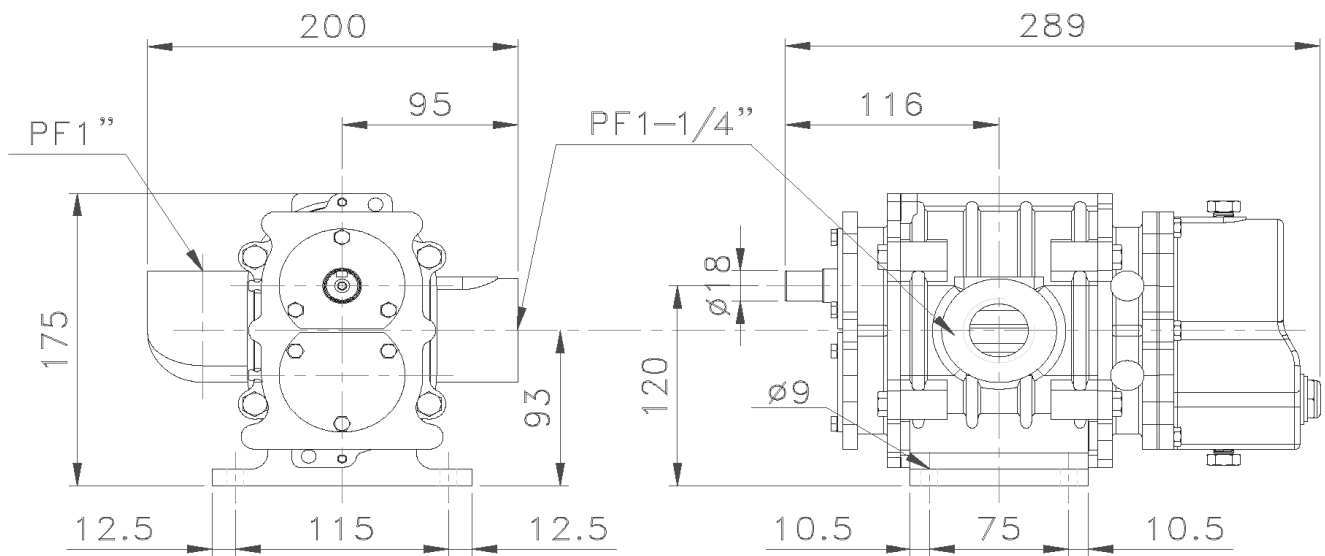


Model	A1	A2	B1	B2	C1	C2	$\phi D$	$\phi T$	E1	E2	$\phi F1$	G	H1	H2	J	Wt.(kg)
KSS-40	457	219	80	15	300	164	28	14	196	23	JIS 5K 1.5"/10K 2"	183	292	110	45	55
KSS-50	537	259	150	22.5	294	158	28	14	196	22	JIS 10K 2"	175	297	110	45	70
KSS-65	597	289	195	30.5	288	152	28	14	200	25	JIS 10K 2.5"	175	300	110	45	72
KSS-80	664	344	195	22.5	358	180	38	16	200	20	JIS 10K 3"	211	345	110	60	136
KSS-100	714	394	282	20.5	364	186	38	16	232	30	JIS 10K 4"	221.5	350	115	60	148
KSS-125A	772	377	210	20	483	250	48	19	346	27	JIS 10K 5"	258.5	430	135	80	248
KSS-125	892	437	310	30	483	250	48	19	355	22.5	JIS 10K 5"	258.5	436	158	80	274
KSS-150	1002	492	428	26	483	250	48	19	355	22.5	JIS 10K 6"	289	463	163	80	308
KSS-200A	962	465	239	45.5	697	357	65	23	555	42.5	JIS 10K 8"	355	630	198	120	640
KSS-200	1062	515	400	40	685	345	65	23	550	33	JIS 10K 8"	435	634	205	120	732
KSS-250	1212	590	520	25	716	361	65	23	550	35	JIS 10K 10"	435	675	216	120	929
KSS-300A	1437	715	420	45	716	361	75	33	780	35	JIS 10K 12"	435	675	216	120	1071
KSS-300	1310	625	510	30	1060	560	95	23	780	35	JIS 10K 12"	550	1010	300	180	1626
KSS-350	1727	878	740	75	1060	560	95	33	780	35	JIS 10K 14"	550	1010	325	180	2250
KSS-400	1865	950	880	75	1060	560	95	24	780	35	JIS 10K 16"	550	1010	325	180	2560

# Dimensions

## KSS main-body

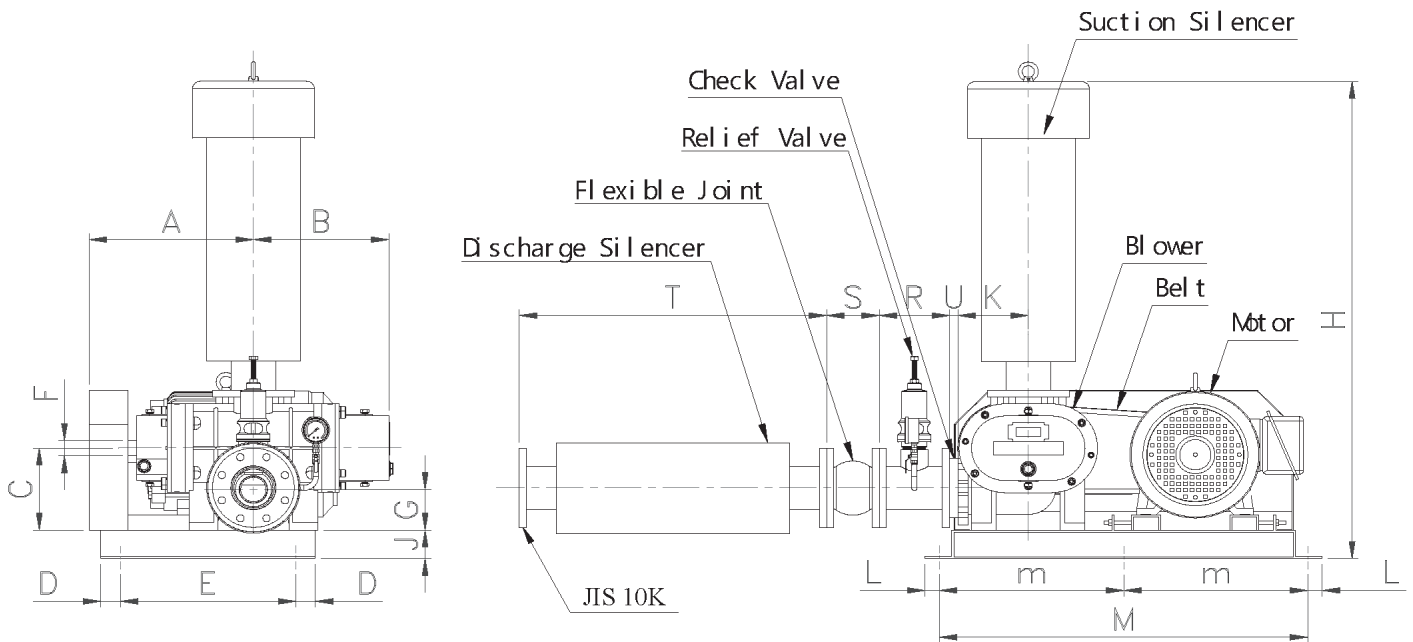
Model KSS-32\*



Model	A1	A2	B1	B2	C1	C2	øD	øT	E1	E2	øF1	G	H1	H2	J	Wt.(kg)
KSS-32*	289	116	75	10.5	200	95	18	9	115	12.5	1"PF/1.25"PF	120	175	93	-	17

# Dimensions

## KSS overall (without motor)

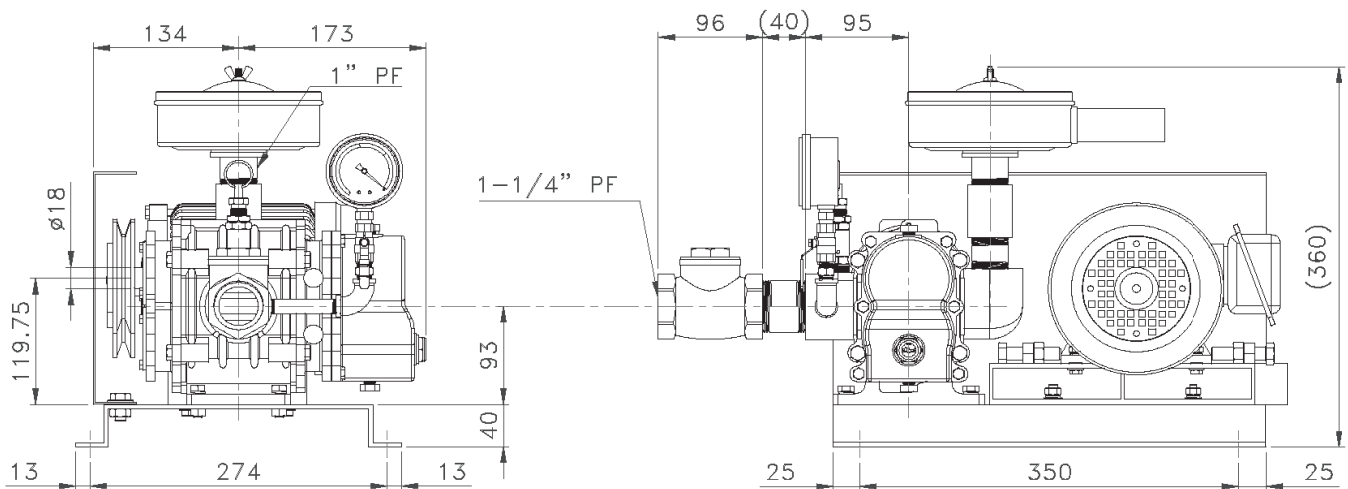


Model	A	B	C	D	E	F	G	H	J	K	L	M	m	R	U	S	T	Wt.(kg)
KSS-40	200	238	180	20	340	28	110	600	46	164	41.5	517	-	150	20	-	-	85
KSS-50	302	278	175	50	350	28	110	897	75	158	37.5	795	-	150	20	85	592	122
KSS-65	323	308	173	50	350	28	110	897	75	152	37.5	795	-	150	24	95	596	132
KSS-80	406	320	213	50	450	38	110	1236	75	180	37.5	945	-	180	24	110	796	233
KSS-100	467	370	225	25	550	38	115	1287	100	186	100	760	-	180	22	115	796	247
KSS-125A	440	395	265	25	550	48	135	1843	100	250	100	900	-	250	24	140	1260	408
KSS-125	500	455	265	25	550	48	158	1843	100	250	100	900	-	250	24	140	1260	434
KSS-150	556	510	295	25	550	48	163	1875	100	250	100	900	-	250	29	150	1264	485
KSS-200A	540	497	355	32.5	935	65	198	2230	125	357	100	1300	650	250	27	170	1644	990
KSS-200	620	547	405	32.5	935	65	205	2330	125	345	100	1300	650	250	27	170	1644	1080
KSS-250	680	622	435	32.5	935	65	216	2500	125	356	100	1300	650	250	27	210	1748	1350
KSS-300A	760	717	430	32	937	65	216	2644	150	362	500	3000	1500	300	32	240	1848	1660
KSS-300	828	685	550	35	1035	95	300	3084	250	560	235	2000	1000	300	32	240	1848	2500
KSS-350	925	870	550	35	1030	95	325	4000	250	555	235	2000	1000	300	35	265	2500	3380
KSS-400	995	940	550	35	1030	95	325	4260	250	560	235	2000	1000	350	40	300	2700	3850

# Dimensions

## KSS overall (without motor)

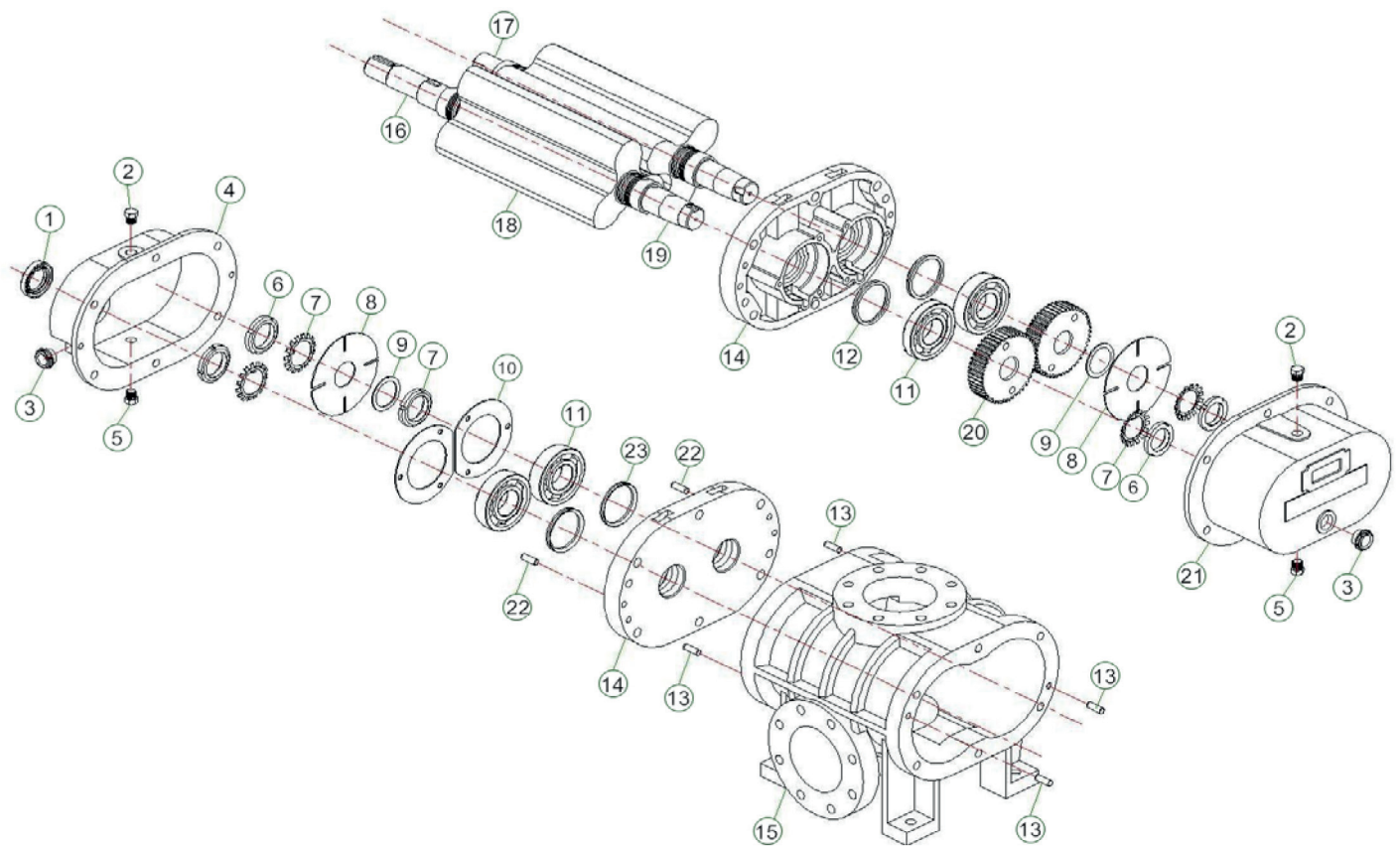
Model KSS-32\*



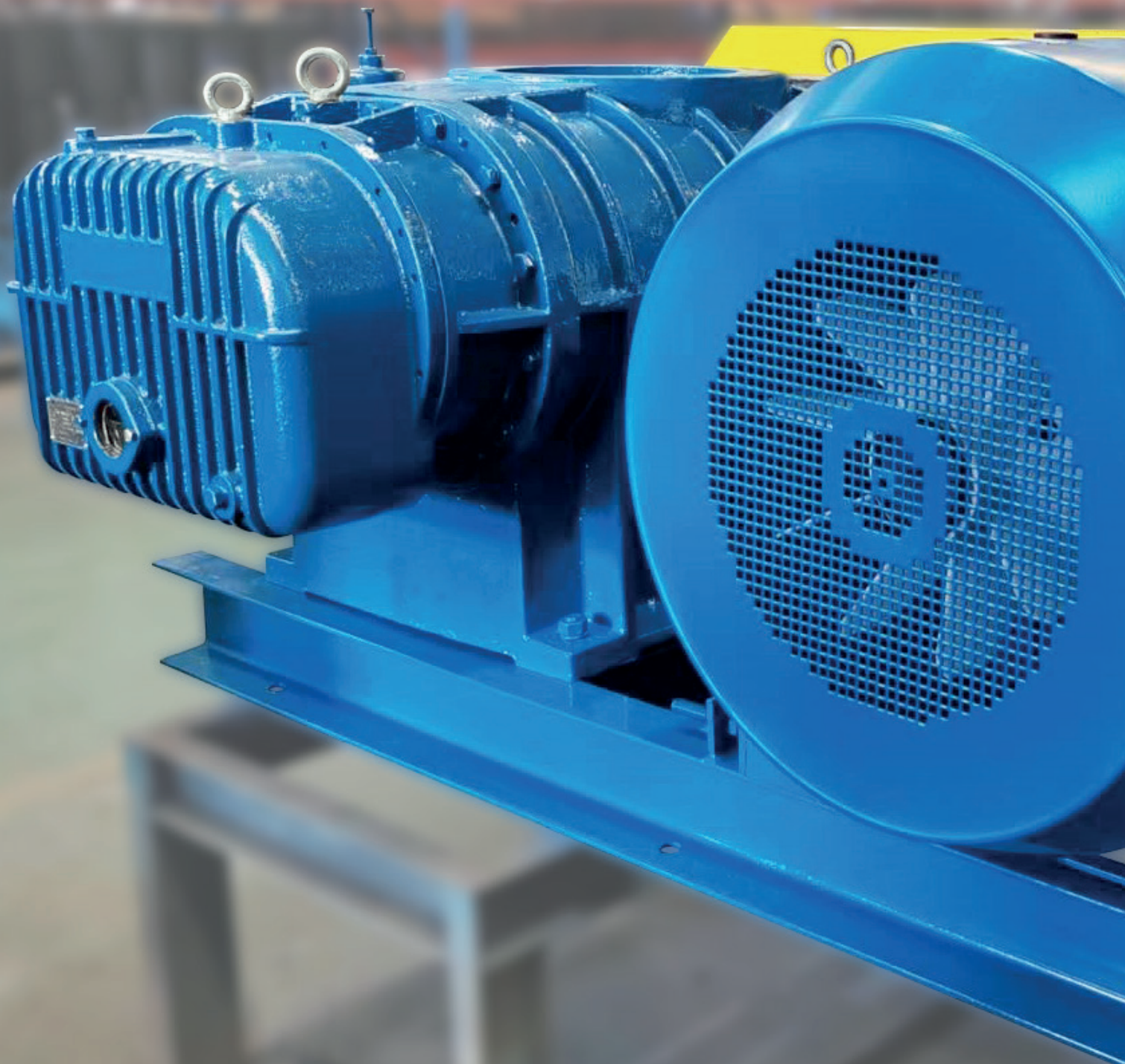
Model	A	B	C	D	E	F	G	H	J	K	L	M	m	R	U	S	T	Wt.(kg)
KSS-32*	134	173	120	13	274	18	93	360	40	95	25	350	-	96	20	-	-	28

# KSS roots blower

## Exploded view and parts list



- |     |                    |     |                  |     |                  |
|-----|--------------------|-----|------------------|-----|------------------|
| 01. | TC Oil seal        | 10. | Bearing fixtures | 19. | Gear Shaft       |
| 02. | Lubricant plug     | 11. | Bearings         | 20. | Timing gears     |
| 03. | Oil sight window   | 12. | V-ring           | 21. | Oil reservoir    |
| 04. | Oil reservoir      | 13. | Positioning pins | 22. | Positioning pins |
| 05. | Purge plug         | 14. | Bearing case     | 23. | TC Oil seal      |
| 06. | Locking nuts       | 15. | Blower casing    |     |                  |
| 07. | Lock washer        | 16. | Drive shaft      |     |                  |
| 08. | Oil thrower        | 17. | Driven shaft     |     |                  |
| 09. | Oil thrower washer | 18. | Rotors           |     |                  |









# KSS performance table

## Model: 200A, 200 & 250

Note: Inlet flow rate Qs=m³/min

Model	RPM	Type KSS-200A performance															
		1000mmAq		2000mmAq		3000mmAq		4000mmAq		5000mmAq		6000mmAq		7000mmAq		8000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSS-200A	620	17.89	4.94	16.82	9.52	15.89	13.73	15.05	17.59	14.36	21.19	13.75	24.56	13.21	27.67	12.79	30.55
	660	19.42	5.27	18.35	10.14	17.42	14.62	16.58	18.73	15.89	22.56	15.28	26.15	14.74	29.47	14.32	32.55
	700	20.95	5.59	19.87	10.76	18.94	15.50	18.10	19.88	17.41	23.93	16.80	27.74	16.26	31.26	15.84	34.53
	740	22.47	5.91	21.40	11.37	20.47	16.39	19.63	21.02	18.94	25.30	18.33	29.33	17.79	33.06	17.37	36.52
	780	24.00	6.23	22.93	11.99	22.00	17.28	21.16	22.17	20.47	26.67	19.86	30.92	19.32	34.86	18.90	38.52
	830	25.91	6.63	24.84	12.76	23.91	18.39	23.07	23.60	22.38	28.38	21.77	32.91	21.23	37.10	20.81	41.01
	880	27.82	7.04	26.75	13.54	25.82	19.50	24.98	25.03	24.22	30.09	23.68	34.89	23.14	39.33	22.72	43.49
	930	29.73	7.44	28.66	14.31	27.73	20.61	26.89	26.46	26.20	31.81	25.59	36.88	25.05	41.58	24.63	45.98
	990	32.02	7.92	30.95	15.24	30.02	21.95	29.18	28.18	28.49	33.86	27.88	39.26	27.34	44.27	26.92	48.95
	1050	34.31	8.41	33.24	16.16	32.31	23.28	31.47	29.89	30.78	35.91	30.17	41.64	29.63	49.96	29.21	51.93
	1110	36.60	8.90	35.52	17.10	34.59	24.62	33.75	31.62	33.06	38.02	32.44	44.07	31.90	49.70	31.47	45.85
	1180	39.27	9.49	38.19	18.20	37.26	26.19	36.42	33.64	35.73	40.47	35.11	46.91	34.57	52.85	34.14	58.32
	1250	41.95	10.07	4.87	19.30	39.94	27.76	39.10	35.65	38.41	42.93	37.79	49.74	37.25	56.00	36.82	61.81
	1320	44.62	10.65	43.54	20.40	42.61	29.33	41.77	37.67	41.08	45.38	40.46	52.57	39.92	59.15	39.49	65.27
1390	47.29	11.23	46.21	21.50	45.28	30.90	44.44	39.68	43.75	47.83	43.13	55.36	42.59	62.29	42.16	68.74	
1470	50.34	11.90	49.26	22.75	48.33	32.70	47.49	41.99	46.80	50.63	46.18	58.55	45.64	65.88	45.21	72.70	
					48.33												
Model	RPM	Type KSS-200 performance															
		1000mmAq		2000mmAq		3000mmAq		4000mmAq		5000mmAq		6000mmAq		7000mmAq		8000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSS-200	620	23.36	6.36	21.97	12.26	20.75	17.67	19.66	22.64	18.75	27.27	17.96	31.62	17.25	35.69	16.70	39.59
	660	25.35	6.79	23.95	13.05	22.74	18.82	21.64	24.11	20.74	29.03	19.94	33.60	19.30	39.20	18.60	44.80
	700	27.33	7.20	25.92	13.85	24.90	19.96	23.80	25.59	22.71	30.80	21.90	35.63	21.10	40.31	20.66	44.75
	740	29.29	7.62	27.89	14.65	26.68	21.11	25.59	27.07	24.70	32.57	23.89	37.76	23.00	42.63	22.64	47.34
	780	31.26	8.04	29.87	15.45	28.60	22.25	27.50	28.54	26.66	34.34	25.87	39.81	25.17	44.94	24.62	49.92
	830	33.72	8.56	32.33	16.45	31.12	23.69	30.03	30.39	29.13	36.54	28.34	42.36	27.63	47.82	27.09	53.14
	880	36.18	9.09	34.79	17.45	33.58	25.13	32.49	32.23	31.59	38.75	30.80	44.92	30.09	50.70	29.55	56.37
	930	38.50	9.69	37.24	18.47	36.03	26.56	34.94	34.08	34.05	40.96	33.25	47.48	32.55	53.60	32.01	59.59
	990	41.57	10.24	40.18	19.64	38.97	28.27	37.88	36.29	36.99	43.60	36.19	50.55	35.49	57.06	34.95	63.46
	1050	44.50	10.86	43.11	20.84	41.90	30.00	40.82	38.50	39.92	46.25	39.13	53.61	38.43	60.52	37.88	67.33
	1110	47.42	11.51	46.02	22.06	44.82	31.73	40.73	42.84	48.96	42.03	56.74	41.33	64.06	40.78	71.08	75.34
	1180	50.82	12.26	49.43	23.47	48.22	33.75	47.14	43.33	46.24	52.12	45.44	60.39	44.74	68.17	44.18	75.49
	1250	54.23	13.01	52.83	24.89	51.63	35.78	50.55	45.92	49.65	55.28	48.85	64.04	48.16	72.28	47.60	79.90
	1320	57.62	13.76	56.22	26.31	55.02	37.80	53.94	48.52	53.05	58.43	52.25	67.69	51.55	76.38	50.99	84.28
1390	61.00	14.52	59.90	27.73	58.40	39.82	57.32	51.12	56.43	61.59	55.63	71.33	54.93	80.35	54.38	88.67	
1470	64.84	15.37	63.45	29.34	62.26	42.13	61.17	54.08	60.28	64.95	59.49	75.41	58.79	84.86	58.24	93.65	
Model	RPM	Type KSS-250 performance															
		1000mmAq		2000mmAq		3000mmAq		4000mmAq		5000mmAq		6000mmAq		7000mmAq		8000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSS-250	620	32.49	8.21	30.56	15.92	28.86	23.01	27.35	29.49	26.08	35.58	24.98	41.09	23.99	46.18	23.23	51.11
	660	35.24	8.78	33.29	16.97	31.61	24.52	30.08	31.45	28.83	37.91	27.22	44.07	26.74	49.56	25.98	54.85
	700	37.96	9.33	36.00	18.03	34.31	26.03	32.79	33.41	31.54	40.24	30.43	46.79	29.46	52.86	28.70	58.50
	740	40.65	9.89	38.71	19.08	37.03	27.55	35.52	35.36	34.27	42.57	33.16	49.49	32.19	56.04	31.42	62.14
	780	43.36	10.45	41.43	20.14	39.75	29.05	38.23	37.32	36.98	44.90	35.88	52.20	34.91	59.10	34.15	65.77
	830	46.74	11.15	44.81	21.46	43.13	30.94	41.62	39.75	40.37	47.79	39.28	55.58	38.30	62.91	37.55	70.27
	880	50.11	11.84	48.18	22.77	46.51	32.82	45.00	42.19	43.75	50.70	42.66	58.95	41.67	66.72	40.93	74.70
	930	53.46	12.54	51.54	24.09	49.87	34.71	48.36	44.63	47.13	53.61	46.02	62.32	45.05	70.55	44.30	79.02
	990	57.49	13.36	55.57	25.66	53.90	36.96	52.39	47.56	51.16	57.08	50.05	66.37	49.08	75.13	48.34	84.19
	1050	61.50	14.18	59.58	27.24	57.91	39.23	56.41	50.49	55.17	60.57	54.08	70.41	53.11	79.71	52.35	89.37
	1110	65.49	15.07	63.55	28.86	61.90	41.53	60.39	53.46	59.16	64.22	58.04	74.62	57.08	84.47	56.32	94.56
	1180	70.13	16.10	68.21	30.77	66.54	44.21	65.05	56.91	63.81	68.46	62.71	79.53	61.74	90.01	60.97	100.6
	1250	74.78	17.12	72.85	32.66	71.20	46.90	69.71	60.37	68.47	72.72	67.36	84.43	66.41	95.56	65.64	106.6
	1320	79.40	18.15	77.47	34.57	75.82	49.60	74.33	63.83	73.10	76.98	72.00	89.33	71.04	101.12	70.26	112.7
1390	84.00	19.18	82.07	36.48	80.42	52.29	78.93	67.28	77.70	81.23	76.00	94.25	75.64	106.68	74.88	118.9	
1470	89.22	20.35	87.31	38.65	85.67	55.36	84.17	71.24	82.95	85.42	81.86	99.86	80.90	113.03	80.14	125.2	

# KSS performance table

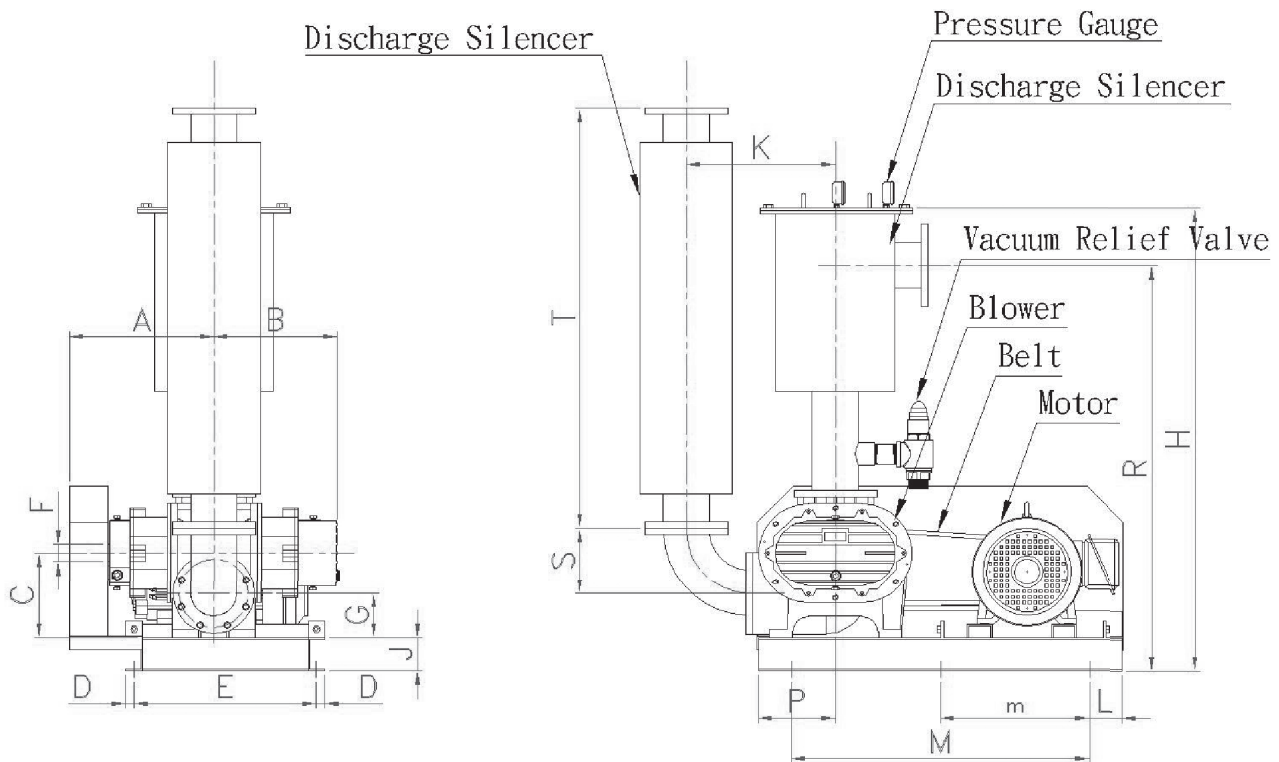
## Model: 300A, 300, 350 & 400

Note: Inlet flow rate Qs=m³/min

Model	RPM	Type KSS-300A performance															
		1000mmAq		2000mmAq		3000mmAq		4000mmAq		5000mmAq		6000mmAq		7000mmAq		8000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSS-300A	620	44,38	11,65	41,65	22,23	39,45	31,81	37,63	40,75	35,97	49	34,49	56,66	33,18	63,77	32,04	70,38
	660	48,01	12,4	45,36	23,75	43,12	33,99	41,29	43,54	39,54	52,25	38,15	60,56	36,84	68,17	35,71	75,27
	700	51,70	13,16	49,03	25,20	46,81	36,19	44,99	46,37	43,33	55,78	41,85	64,50	40,54	72,62	39,40	80,17
	740	55,34	13,91	52,70	26,63	50,50	38,30	48,67	49,05	47,01	58,98	45,53	68,21	44,22	76,87	43,09	84,83
	780	59,01	14,67	56,39	28,08	54,19	40,37	52,36	51,71	50,70	62,17	49,22	71,89	47,91	81,02	46,78	89,41
	830	63,58	15,60	60,96	29,88	58,75	42,96	56,91	55,02	55,26	66,16	53,78	76,50	52,47	86,22	51,34	95,15
	880	68,14	16,54	65,51	31,67	63,31	45,55	61,47	58,35	59,82	70,14	58,33	81,11	57,03	91,41	55,90	100,8
	930	72,66	17,49	70,05	33,48	67,85	48,14	66,01	61,66	64,36	74,13	62,87	85,72	61,57	96,51	60,44	106,6
	990	78,09	18,61	75,48	35,63	73,24	51,24	71,40	65,64	69,75	78,92	68,26	91,25	66,96	102,84	65,83	113,5
	1050	83,49	19,74	80,89	37,79	78,62	54,35	76,79	69,63	75,13	83,70	73,65	96,79	72,33	109,07	71,20	120,4
	1110	88,86	20,88	86,23	39,95	83,99	57,46	82,13	73,60	80,47	88,50	79,00	102,33	77,68	115,31	76,55	127,3
	1180	95,10	22,20	92,49	42,48	90,21	61,09	88,33	78,26	86,67	94,10	85,19	108,80	83,88	122,60	82,75	135,3
	1250	101,34	23,52	98,72	45,01	96,41	64,72	94,53	82,90	92,87	99,70	91,39	115,28	90,08	129,89	88,95	143,4
	1320	107,53	23,52	104,91	47,53	102,61	68,35	100,73	87,55	99,07	105,30	97,59	121,76	96,28	137,17	95,15	151,4
1390	113,68	26,17	111,07	50,06	108,80	71,98	106,88	92,20	105,26	110,89	103,78	128,23	102,37	144,45	101,34	159,5	
1470	120,66	27,68	118,08	52,95	115,79	76,13	113,83	97,51	112,18	117,29	110,71	135,63	109,41	152,78	108,38	168,7	
KSS-300	800	98,94	22,60	96,11	40,56	93,88	58,38	91,77	76,69	89,95	94,00	88,37	112,10	86,79	127,76	85,00	144,7
	900	112,33	25,42	109,50	45,62	107,27	65,65	105,16	86,22	103,34	105,50	101,76	126,08	100,18	143,70	98,59	163,7
	1000	125,72	28,24	122,89	50,69	120,66	72,93	118,55	95,82	116,73	116,70	115,15	140,12	113,57	159,69	111,98	180,8
	1100	139,05	31,06	136,28	55,76	134,05	80,22	131,94	105,36	130,12	128,37	128,54	153,87	126,95	175,63	125,37	198,1
	1200	152,44	33,89	149,67	60,83	147,44	87,51	145,32	114,96	143,51	140,04	141,93	168,08	140,34	191,57	138,76	215,3
	1300	165,82	36,71	163,06	65,89	160,83	94,79	158,71	124,53	156,90	151,70	155,32	182,08	153,73	207,51	152,15	232,6
	1400	179,20	35,93	176,45	70,96	174,22	102,08	172,10	134,11	170,29	163,36	168,71	196,07	167,12	233,46	165,54	250,1
Model	RPM	Type KSS-350 performance															
		1000mmAq		2000mmAq		3000mmAq		4000mmAq		5000mmAq		6000mmAq		7000mmAq		8000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSS-350	600	113,86	26,45	109,57	47,5	106,22	67,72	103,06	89,11	100,36	109,17	98,03	130,7	95,7	149,4	93,38	173,5
	700	134,9	30,88	130,61	55,39	127,26	79,11	124,1	104,02	121,4	127,51	119,07	152,6	116,74	174,4	114,4	202,6
	800	155,94	35,31	151,65	63,3	148,3	91,17	145,14	118,96	142,44	145,75	140,11	174,5	137,78	199,5	135,5	232,3
	900	176,97	39,74	172,69	73,20	169,34	102,05	166,18	133,82	163,48	164,10	161,15	196,35	158,82	224,49	156,49	260,8
	1000	198,01	44,17	193,73	79,10	190,38	114,04	187,22	148,76	184,52	182,44	182,19	218,28	179,86	249,62	177,53	289,9
	1100	218,96	48,60	214,77	87,00	211,42	125,49	208,26	163,66	205,56	200,78	203,23	239,98	200,90	274,67	198,57	318,9
	1200	240,00	53,00	235,81	94,90	232,46	136,95	229,29	178,60	226,59	219,14	224,27	262,05	221,94	299,72	219,61	347,6
	1300	261,02	57,40	256,85	102,80	253,50	148,39	250,33	193,47	247,63	237,44	245,31	283,95	242,98	324,77	240,65	276,3
	1400	282,05	61,80	277,89	110,70	274,54	159,85	271,37	208,40	268,67	255,77	266,35	305,84	264,02	349,83	261,69	405,0
Model	RPM	Type KSS-400 performance															
		1000mmAq		2000mmAq		3000mmAq		4000mmAq		5000mmAq		6000mmAq		7000mmAq		8000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSS-400	600	132,68	30,77	127,69	55,24	123,78	79,5	120,09	104,41	116,95	127,18	114,23	152,7	111,52	174	109,1	202,1
	700	157,19	35,9	152,2	64,44	148,3	92,76	144,61	121,8	141,46	148,4	138,75	178,1	136,04	203	133,6	235,9
	800	181,71	41,03	176,72	73,65	172,82	106	169,13	139,25	165,98	169,51	163,27	203,5	160,56	232	158,2	269,5
	900	206,23	46,16	201,24	86,09	197,33	119,22	193,64	156,58	190,50	190,72	187,79	228,95	185,07	260,94	182,68	303,1
	1000	230,75	51,28	225,76	92,07	221,85	132,46	218,16	174,03	215,02	211,94	212,20	254,48	209,59	290,01	207,2	336,8
	1100	255,15	56,41	250,27	101,27	246,37	145,71	242,68	191,37	239,53	233,15	236,82	279,46	234,11	318,98	231,72	370,5
	1200	279,67	61,55	274,79	110,49	270,88	158,95	267,20	208,81	264,05	254,37	261,34	305,31	258,63	347,95	256,24	404,2

# Dimensions

## KSV overall



Model	A	B	C	D	E	F	G	H	J	K	L	M	m	P	R	S	T
<b>KSV-40</b>	260	238	108	16	332	28	11	1100	46	256	41.5	517	-	121	360	-	589
<b>KSV-50</b>	302	278	175	50	350	28	108	836	75	294	37.5	795	-	245	724	689	592
<b>KSV-65</b>	323	308	173	50	350	28	107	933	75	289	37.5	795	-	245	764	789	596
<b>KSV-80</b>	406	320	213	50	450	38	114	1098	75	332	37.5	945	-	290	1041	943	796
<b>KSV-100</b>	467	370	225	25	550	38	120	1286	100	376	100	760	-	240	1146	993	796
<b>KSV-125A</b>	440	395	265	25	550	48	143	1294	100	477	100	900	-	238	1237	1119	1260
<b>KSV-125</b>	500	455	265	25	550	48	163	1285	100	479	100	900	-	238	1237	1110	1260
<b>KSV-150</b>	556	510	295	25	550	48	172	1932	100	517	100	900	-	238	1298	1215	1264
<b>KSV-200A</b>	540	497	355	32.5	935	65	194	1680	125	691	100	1300	650	410	1630	1480	1644
<b>KSV-200</b>	620	547	405	32.5	935	65	198	1780	125	701	100	1300	650	410	1730	1380	1644
<b>KSV-250</b>	485	622	435	32.5	935	65	216	1945	125	788	100	1300	650	410	1700	1945	1748
<b>KSV-300A</b>	760	716	255	35	1030	65	255	2270	250	1173	235	1530	765	444	1820	1920	1848
<b>KSV-300</b>	758	685	550	35	1035	95	300	2510	250	1062	235	2000	1000	560	2260	2260	2750
<b>KSV-350</b>	925	870	550	35	1030	95	325	2850	250	1088	235	2000	1000	560	2350	2427	3700
<b>KSV-400</b>	995	949	559	35	1030	95	325	3060	250	1170	235	2000	1000	560	2560	2637	4230

# KSV performance table

## KLEE roots blower

Note: Inlet flow rate Qs=m<sup>3</sup>/min

Model	RPM	Type KSV-40 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-40	1250	1,64	0,35	1,41	0,69	1,22	1,04	1,01	1,38	/	/	/	/
	1350	1,80	0,37	1,56	0,75	1,36	1,12	1,15	1,49	/	/	/	/
	1450	1,96	0,4	1,71	0,80	1,51	1,20	1,29	1,60	1,15	2,00	1,03	2,40
	1550	2,11	0,43	1,85	0,86	1,65	1,29	1,43	1,71	1,29	2,14	1,16	2,57
	1650	2,27	0,46	2,01	0,91	1,80	1,37	1,57	1,82	1,43	2,28	1,29	2,74
	1750	2,42	0,48	2,16	0,97	1,96	1,45	1,71	1,93	1,57	2,42	1,43	2,90
	1850	2,58	0,51	2,30	1,02	2,10	1,53	1,85	2,05	1,71	2,56	1,56	3,07
	1950	2,73	0,54	2,46	1,08	2,25	1,62	1,99	2,16	1,84	2,70	1,69	3,23

Model	RPM	Type KSV-50 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-50	1250	2,66	0,58	2,24	1,15	1,86	1,73	1,59	2,30	1,42	2,88	1,23	3,46
	1350	2,92	0,62	2,49	1,24	2,10	1,87	1,83	2,49	1,65	3,11	1,50	3,73
	1450	3,18	0,67	2,73	1,34	2,34	2,00	2,06	2,67	1,87	3,34	1,73	4,01
	1550	3,44	0,71	2,98	1,43	2,59	2,14	2,29	2,86	2,10	3,57	1,95	4,28
	1650	0,00	0,76	3,23	1,52	2,82	2,28	2,52	3,04	2,33	3,80	2,17	4,56
	1750	3,76	0,81	3,48	1,61	3,06	2,42	2,75	3,22	2,56	4,03	2,39	4,84
	1850	4,01	0,85	3,72	1,70	3,30	2,56	2,99	3,41	2,79	4,26	2,61	5,11
	1950	4,26	0,90	3,97	1,80	3,54	2,70	3,22	3,59	3,02	4,49	2,82	5,39

Model	RPM	Type KSV-65 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-65	1250	3,49	0,75	3,11	1,50	2,89	2,25	2,70	2,99	2,50	3,74	2,31	4,49
	1350	3,83	0,81	3,43	1,62	3,21	2,43	3,00	3,23	2,80	4,04	2,60	4,85
	1450	4,17	0,87	3,75	1,74	3,52	2,61	3,30	3,47	3,10	4,34	2,88	5,21
	1550	4,51	0,93	4,08	1,86	3,83	2,78	3,61	3,71	3,39	4,64	3,17	5,57
	1650	4,84	0,99	4,41	1,98	4,15	2,96	3,92	3,95	3,69	4,94	3,46	5,93
	1750	5,18	1,05	4,72	2,10	4,45	3,14	4,21	4,19	3,99	5,24	3,52	6,29
	1850	5,52	1,11	5,05	2,22	4,77	3,32	4,52	4,43	4,29	5,54	4,03	6,65
	1950	5,86	1,17	5,38	2,34	5,09	3,50	4,82	4,67	4,58	5,84	4,32	7,01

Model	RPM	Type KSV-80 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-80	1200	6,22	1,28	5,57	2,55	5,08	3,83	4,49	5,10	4,10	6,38	3,71	7,65
	1300	6,82	1,38	6,14	2,76	5,63	4,15	5,03	5,53	4,63	6,91	4,22	8,29
	1400	7,42	1,49	6,72	2,98	6,18	4,46	5,57	5,95	5,16	7,44	4,73	8,93
	1500	8,02	1,59	7,30	3,19	6,74	4,78	6,11	6,38	5,68	7,97	5,24	9,57
	1600	8,62	1,70	7,87	3,40	7,30	5,10	6,64	6,80	6,20	8,50	5,75	10,21
	1650	8,92	1,75	8,16	3,51	7,58	5,26	6,91	7,02	6,47	8,77	6,00	10,52
	1750	9,51	1,86	8,74	3,72	8,14	5,58	7,45	7,44	7,00	9,30	6,51	11,16
	1850	10,11	1,97	9,31	3,93	8,70	5,90	7,99	7,87	7,52	9,83	7,02	11,80
1950	10,71	2,07	9,88	4,15	9,25	6,22	8,53	8,29	8,05	10,36	7,52	12,44	

Model	RPM	Type KSV-100 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-100	1200	9,04	1,79	8,11	3,57	7,32	5,36	6,80	7,14	6,43	8,93	6,09	10,72
	1300	9,88	1,93	8,92	3,87	8,10	5,80	7,54	7,74	7,17	9,67	6,81	11,61
	1400	10,72	2,08	9,72	4,17	8,88	6,25	8,30	8,33	7,91	10,42	7,51	12,50
	1500	11,56	2,23	10,53	4,46	9,66	6,70	9,05	8,93	8,64	11,16	8,23	13,39
	1600	12,40	2,38	11,33	4,76	10,44	7,14	9,81	9,52	9,38	11,91	8,94	14,29
	1650	12,82	2,46	11,73	4,91	10,83	7,37	10,19	9,82	9,75	12,28	9,30	14,73
	1750	13,65	2,60	12,54	5,21	11,62	7,81	10,94	10,42	10,49	13,02	10,01	15,63
	1850	14,49	2,75	13,34	5,51	12,39	8,26	11,69	11,01	11,23	13,77	10,73	16,52
1950	15,33	2,90	14,15	5,80	13,17	8,71	12,45	11,61	11,97	14,51	11,43	17,41	

# KSV performance table

## KLEE roots blower

Note: Inlet flow rate  $Q_s = m^3/min$

Model	RPM	Type KSV-125A performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-125A	1180	13,20	2,57	12,01	5,15	11,06	7,72	10,07	10,29	9,20	12,87	8,52	15,44
	1250	14,06	2,73	12,84	5,45	11,86	8,18	10,85	10,90	9,96	13,63	9,25	16,35
	1320	14,92	2,88	13,66	5,76	12,66	8,64	11,62	11,51	10,72	14,39	9,98	17,27
	1390	15,78	3,03	14,49	6,06	13,46	9,09	12,39	12,12	11,48	15,16	10,71	18,19
	1470	16,77	3,21	15,44	6,41	14,37	9,62	13,28	12,82	12,34	16,03	11,54	19,23
	1560	17,87	3,40	16,49	6,80	15,40	10,21	14,27	13,61	13,31	17,01	12,49	20,41
	1650	18,98	3,60	17,56	7,20	16,42	10,79	15,26	14,39	14,28	17,99	13,42	21,59
	1750	20,20	3,82	18,74	7,63	17,57	11,45	16,37	15,26	15,36	19,08	14,47	22,90
1850	21,43	4,03	19,91	8,07	18,71	12,10	17,48	16,14	16,45	20,17	15,51	24,21	

Model	RPM	Type KSV-125 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-125	1180	18,92	3,76	17,05	7,52	15,78	11,28	14,51	15,04	13,81	18,80	12,80	22,56
	1250	20,17	3,98	18,25	7,97	16,95	11,95	15,63	15,94	14,91	19,92	13,86	23,90
	1320	21,43	4,21	19,46	8,41	18,13	12,62	16,77	16,83	16,02	21,04	14,93	25,24
	1390	22,69	4,43	20,67	8,86	19,29	13,29	17,90	17,72	17,12	22,15	16,01	26,58
	1470	24,12	4,69	22,04	9,37	20,63	14,06	19,19	18,74	18,38	23,43	17,22	28,11
	1560	25,74	4,97	23,60	9,94	22,12	14,92	20,65	19,89	19,81	24,86	18,60	29,83
	1650	27,35	5,26	25,14	10,52	23,63	15,78	22,10	21,04	21,23	26,29	19,98	31,55
	1750	29,15	5,58	26,87	11,15	25,30	16,73	23,72	22,31	22,81	27,89	21,50	33,46
1850	30,94	5,90	28,59	11,79	26,97	17,69	25,33	23,58	24,38	29,48	23,03	35,38	

Model	RPM	Type KSV-150 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-150	1180	24,30	4,85	21,84	9,70	20,42	14,55	19,11	19,40	18,28	24,25	17,04	29,10
	1250	25,92	5,14	23,40	10,27	21,93	15,41	20,57	20,55	19,70	25,69	18,42	30,82
	1320	27,54	5,42	24,95	10,85	23,44	16,27	22,03	21,70	21,13	27,12	19,80	32,55
	1390	29,16	5,71	26,51	11,42	24,94	17,14	23,49	22,85	22,55	28,56	21,17	34,27
	1470	31,02	6,04	28,28	12,08	26,67	18,12	25,16	24,17	24,18	30,21	22,75	36,25
	1560	33,10	6,41	30,29	12,82	28,61	19,23	27,03	25,64	26,01	32,06	24,52	38,47
	1650	35,18	6,78	32,28	13,56	30,54	20,34	28,90	27,12	27,85	33,91	26,29	40,69
	1750	37,50	7,19	34,51	14,38	32,70	21,58	30,99	28,77	29,88	35,96	28,25	43,15
1850	39,81	7,60	36,73	15,21	34,85	22,81	33,07	30,41	31,93	38,01	30,23	45,62	

Model	RPM	Type KSV-200A performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-200A	990	32,08	8,94	29,49	14,87	27,66	21,38	25,98	27,22	24,73	33,05	23,30	39,85
	1050	34,21	9,43	31,54	15,84	29,65	22,36	27,91	28,19	26,60	35,97	25,12	41,80
	1110	36,35	9,91	33,59	16,62	31,64	23,33	29,84	30,13	28,49	37,91	26,94	44,71
	1180	38,78	10,50	36,02	17,69	33,90	25,27	32,02	32,08	30,71	39,85	29,00	46,66
	1250	41,31	11,08	38,35	18,86	36,25	26,24	34,29	34,02	32,85	41,80	31,14	49,57
	1320	43,84	11,66	40,78	19,44	38,51	28,19	36,57	36,94	35,07	44,71	33,29	52,49
	1390	46,27	13,34	43,20	20,41	40,85	29,16	38,75	37,91	37,21	46,66	35,36	55,40

Model	RPM	Type KSV-200 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-200	990	41,20	11,00	37,92	18,80	35,53	26,00	33,39	34,00	31,77	43,00	29,92	50,00
	1050	44,00	11,60	40,61	20,00	38,04	28,00	35,82	37,00	34,23	45,00	32,30	53,00
	1110	46,70	12,20	43,20	21,00	40,64	30,00	38,34	39,00	36,61	48,00	34,60	56,00
	1180	49,90	13,10	46,27	22,00	43,62	31,00	41,22	41,00	39,42	50,00	37,32	59,00
	1250	53,10	13,80	49,34	24,00	46,59	33,00	44,10	44,00	42,24	53,00	40,04	63,00
	1320	56,30	14,50	52,42	25,00	49,57	35,00	46,98	46,00	45,06	56,00	42,76	66,00
	1390	59,50	15,20	55,49	26,00	52,55	38,00	49,86	48,00	47,87	59,00	45,56	70,00

# KSV performance table

## KLEE roots blower

Note: Inlet flow rate  $Q_s = m^3/min$

Model	RPM	Type KSV-250 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-250	990	55,60	14,15	51,46	24,66	48,45	34,30	45,72	46,10	43,65	55,74	41,40	66,46
	1050	59,30	15,00	55,10	25,73	51,80	36,45	49,05	48,24	46,90	59,00	44,46	69,88
	1110	63,00	15,75	58,56	27,87	55,24	39,66	52,29	51,46	50,16	62,18	47,60	73,97
	1180	67,20	16,72	62,69	28,94	59,24	41,80	56,16	54,67	53,94	66,46	51,26	79,33
	1250	71,50	17,80	66,82	31,09	63,24	45,02	60,03	58,81	57,64	69,68	54,83	83,62
	1320	75,80	18,76	70,94	32,16	67,24	47,17	63,90	60,00	61,42	73,97	58,48	87,90
1390	80,10	19,72	74,88	34,30	71,15	49,31	67,95	63,25	65,21	78,26	62,14	93,26	

Model	RPM	Type KSV-300A performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-300A	1000	76,8	20,7	71,0	34,0	67,0	47,3	63,1	63,7	60,5	76,9		
	1150	90,0	23,8	83,2	39,1	78,5	54,4	73,9	73,2	71,0	88,4		
	1300	101,6	26,9	95,0	44,2	90,1	61,5	85,6	80,4	82,3	99,1		
	1450	115,5	30,0	108,1	49,3	102,4	68,5	97,5	89,7	93,6	110,6		

Model	RPM	Type KSV-300 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-300	900	111,5	26,6	103,9	50,1	98,2	71,6	92,6	91,4	88,7	109,7	84,0	126,7
	1000	124,5	29,6	116,7	57,0	110,6	80,9	104,6	102,9	100,4	123,3	95,3	142,1
	1100	138,1	34,5	129,7	63,9	123,1	90,2	116,7	114,4	112,3	136,8	106,8	157,6
	1200	151,7	39,5	142,6	70,8	135,6	99,5	128,8	125,9	124,1	150,4	118,2	171,9
	1300	165,3	44,5	155,6	83,6	148,2	108,8	141,0	137,4	136,0	164,0	129,7	188,4
	1400	178,0	47,9	167,6	90,0	159,6	117,2	151,9	148,0	146,5	176,6	139,7	202,9

Model	RPM	Type KSV-350 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-350	900	175,8	39,7	172,8	70,1	169,8	101,5	166,8	132,9	163,8	164,3	160,8	195,7
	1000	201,8	45,1	198,8	77,9	195,8	112,8	192,8	147,7	189,8	182,6	186,8	217,4
	1100	224,2	49,6	221,2	85,7	218,2	124,0	215,2	162,5	212,2	200,9	209,2	239,1
	1200	247,0	54,1	244,0	93,5	241,0	135,3	238,0	177,3	235,0	219,2	232,0	260,8
	1300	270,2	58,6	267,2	101,3	264,2	146,6	261,2	192,1	258,2	237,5	255,2	282,5
	1400	293,9	63,1	290,9	109,0	287,9	157,9	284,9	206,9	281,9	255,8	288,9	304,2

Model	RPM	Type KSV-400 performance											
		-1000mmAq		-2000mmAq		-3000mmAq		-4000mmAq		-5000mmAq		-6000mmAq	
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw
KSV-400	900	203,5	45,0	197,5	80,8	191,5	117,6	185,5	153,4	179,5	190,2		
	1000	228,4	50,0	222,4	89,8	216,4	130,7	210,4	170,5	204,4	211,3		
	1100	253,7	55,0	247,7	98,8	241,7	143,8	235,7	187,6	229,7	232,4		
	1200	279,5	60,0	273,5	107,8	267,5	156,9	261,5	204,6	255,5	253,5		

# KBWP performance table

## KLEE roots blower

Note: Inlet flow rate  $Q_s = m^3/min$

Model	Bore Inch(mm)	RPM	8000mmAq		9000mmAq		10000mmAq		Cooling Water Volume L/min
			$Q_s$	kw	$Q_s$	kw	$Q_s$	kw	
KBWP-40	1.5(40)	1450	0,94	3,21	0,81	3,61	0,67	4,01	4
		1550	1,07	3,43	0,94	3,86	0,81	4,28	
		1650	1,21	3,65	1,07	4,10	0,94	4,56	
		1750	1,34	3,87	1,21	4,35	1,07	4,84	
		1850	1,47	4,09	1,34	4,60	1,20	5,11	
		1950	1,60	4,31	1,47	4,85	1,33	5,39	
KBWP-50	2(50)	1450	1,84	5,34	1,73	6,01	1,66	6,68	4
		1550	2,10	5,71	1,99	6,43	1,92	7,14	
		1650	2,36	6,08	2,25	6,84	2,18	7,60	
		1750	2,62	6,45	2,51	7,26	2,44	8,06	
		1850	2,87	6,82	2,77	7,67	2,70	8,52	
		1950	3,13	7,19	3,03	8,09	2,95	8,98	
KBWP-65	2 1/2(65)	1350	2,82	6,47	2,69	7,28	2,58	8,09	6
		1450	3,16	6,95	3,03	7,82	2,92	8,68	
		1550	3,50	7,43	3,37	8,35	3,26	9,28	
		1650	3,83	7,91	3,71	8,89	3,59	9,88	
KBWP-80	3(80)	1300	4,13	11,06	3,78	12,44	3,44	13,82	8
		0	4,73	11,91	4,38	13,39	4,04	14,88	
		1500	5,33	12,76	4,98	14,35	4,64	15,95	
		1600	5,93	13,61	5,57	15,31	5,24	17,01	
		1650	6,23	14,03	5,87	15,79	5,54	17,54	
		1750	6,82	14,88	6,47	16,74	6,13	18,60	
		1850	7,42	15,73	7,07	17,70	6,73	19,67	
		1950	8,02	16,58	7,67	18,66	7,33	20,73	
KBWP-100	4(100)	1200	6,69	14,29	6,43	16,07	6,20	17,86	10
		1300	7,53	15,48	7,27	17,41	7,04	19,35	
		1400	8,37	16,67	8,11	18,75	7,88	20,84	
		1500	9,21	17,86	8,95	20,09	8,72	22,32	
KBWP-125A	5(125)	1180	9,15	20,59	8,52	23,16	7,78	25,73	12
		1250	10,01	21,81	9,38	24,53	8,64	27,26	
		1320	10,87	23,03	10,24	25,91	9,50	28,78	
		1390	11,73	24,25	11,10	27,28	10,36	30,31	
		1470	12,71	25,64	12,08	28,85	11,34	32,06	
		1560	13,82	27,21	13,19	30,62	12,45	34,02	
		1650	14,92	28,78	14,29	32,38	13,56	35,98	
		1750	16,15	30,53	15,52	34,35	14,78	38,16	
KBWP-125	5(125)	1850	17,38	32,27	16,75	36,31	16,01	40,34	12
		1180	14,35	30,09	13,55	33,85	12,61	37,61	
		1250	15,61	31,87	14,80	35,86	13,86	39,84	
		1320	16,87	33,66	16,06	37,86	15,12	42,07	
		1390	18,12	35,44	17,32	39,87	16,38	44,30	
		1470	19,56	37,48	18,75	42,17	17,81	46,85	
		1560	21,18	39,78	20,37	44,75	19,43	49,72	
		1650	22,79	42,07	21,98	47,33	21,04	52,59	
KBWP-150	6(150)	1750	24,59	44,62	23,78	50,20	22,84	55,77	15
		1850	26,38	47,17	25,57	53,07	24,64	58,96	
		1180	18,97	38,80	17,61	43,65	16,42	48,49	
		1250	20,59	41,10	19,23	46,23	18,04	51,37	
		1320	22,21	43,40	20,85	48,82	19,66	54,25	
		1390	23,83	45,70	22,47	51,41	21,28	57,12	
		1470	25,69	48,33	24,32	54,37	23,13	60,41	
		1560	26,58	52,26	25,43	58,80	24,03	65,33	
KBWP-200A	8(200)	1050	28,81	55,43	27,66	62,36	26,26	69,29	20
		1110	31,04	58,60	29,89	65,92	28,49	73,25	
		1180	33,64	62,29	32,49	70,08	31,09	77,87	
		1250	36,24	65,99	35,09	74,24	33,70	82,48	
		1320	38,84	69,68	37,70	78,39	36,30	87,10	
		1390	41,44	73,38	40,30	82,55	38,90	91,72	
KBWP-200	8(200)	990	34,38	67,19	32,65	75,59	30,84	83,99	25
		1050	37,25	71,27	35,51	80,18	33,71	89,08	
		1110	40,12	75,34	38,38	84,76	36,58	94,17	
		1180	43,46	80,09	41,73	90,10	39,92	100,11	
		1250	46,81	84,84	45,07	95,45	43,27	106,05	
		1320	50,15	89,59	48,42	100,79	46,61	111,99	
		1390	53,50	94,34	51,76	106,14	49,96	117,93	
KBWP-250	10(250)	1050	51,94	95,02	50,36	106,90	48,32	118,78	25
		1110	55,76	100,45	54,18	113,01	52,15	125,57	
		1180	60,22	106,79	58,64	120,14	56,61	133,48	
		1250	64,68	113,12	63,10	127,26	61,07	141,40	
		1320	69,14	119,46	67,56	134,39	65,53	149,32	
		1390	73,60	125,79	72,02	141,52	69,99	157,24	



# KBWP performance table

## KLEE roots blower

Note: Inlet flow rate  $Q_s = \text{m}^3/\text{min}$

Model	Bore Inch(mm)	RPM	8000mmAq		9000mmAq		10000mmAq		Cooling Water Volume L/min
			$Q_s$	kw	$Q_s$	kw	$Q_s$	kw	
KBWP-300	12(300)	1480	79,33	133,94	77,76	150,68	75,72	167,42	30
		600	55,28	111,50	52,93	125,44	50,60	139,38	
		700	68,65	130,08	66,30	146,34	63,97	162,60	
		800	82,02	148,67	79,67	167,25	77,34	185,83	
		900	95,39	167,25	93,04	188,16	90,70	209,06	
		1000	108,75	185,83	106,41	209,06	104,07	232,29	
		1100	122,12	204,42	119,77	229,97	117,44	255,52	
		1200	135,49	223,00	133,14	250,88	130,81	278,75	
		1300	148,86	241,58	146,51	271,78	144,18	301,98	
		1400	162,23	260,17	159,88	292,69	157,55	325,21	

# KBDP performance table

## KLEE roots blower

**Note: Inlet flow rate Qs=m<sup>3</sup>/min**

Model		RPM		Type KBDP-50 performance(KSS-50+KSS-40)																		Cooling Water Volume(L/min)					
				1000mmAq		1100mmAq		1200mmAq		1300mmAq		1400mmAq		1500mmAq		1600mmAq		1700mmAq		1800mmAq				1900mmAq		2000mmAq	
				Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw			Qs	kw	Qs	kw
KBDP-50	1250	1.61	4.61	1.53	5.07	1.45	5.53	1.41	5.99	1.37	6.45	1.35	6.91	1.32	7.37	1.27	7.83	1.21	8.29	1.18	8.75	1.14	9.21	160	8		
	1350	1.87	4.98	1.82	5.48	1.77	5.97	1.72	6.47	1.66	6.96	1.62	7.47	1.58	7.97	1.53	8.46	1.47	8.96	1.44	9.45	1.40	9.95				
	1450	2.13	5.34	2.08	5.88	2.03	6.41	1.98	6.95	1.92	7.49	1.88	8.02	1.84	8.55	1.79	9.08	1.73	9.62	1.70	10.15	1.66	10.69				
	1550	2.39	5.71	2.34	6.28	2.29	6.85	2.24	7.43	2.18	8.00	2.14	8.57	2.10	9.14	2.05	9.71	1.99	10.28	1.95	10.85	1.92	11.42				
	1650	2.65	6.08	2.60	6.69	2.55	7.30	2.50	7.91	2.44	8.51	2.40	9.12	2.36	9.73	2.31	10.34	2.25	10.95	2.21	11.55	2.18	12.16				
	1750	2.91	6.45	2.86	7.10	2.81	7.74	2.76	8.39	2.70	9.03	2.66	9.68	2.62	10.32	2.57	10.96	2.51	11.61	2.47	12.25	2.44	12.90				
	1850	3.17	6.82	3.12	7.50	3.07	8.18	3.02	8.87	2.96	9.55	2.92	10.23	2.87	10.91	2.82	11.59	2.77	12.27	2.73	12.95	2.70	13.64				
1950	3.43	7.19	3.38	7.91	3.32	8.62	3.27	9.34	3.22	10.06	3.18	10.78	3.13	11.50	3.08	12.22	3.03	12.94	2.99	13.65	2.95	14.37					
Type KBDP-65 performance(KSS-65+KSS-50)																											
Type KBDP-80 performance(KSS80+KSS-80)																											
Type KBDP-100 performance(KSS-100+KSS-80)																											
Type KBDP-125 performance(KSS-125+KSS-125A)																											
Type KBDP-150 performance(KSS-150+KSS-125A)																											
Type KBDP-200A performance(KSS-200A+KSS-200A)																											

# KBDP performance table

## KLEE roots blower

Note: Inlet flow rate Qs=m<sup>3</sup>/min

Model	RPM	Type KBDP-200 performance(KSS-200+KSS-200A)																				Cooling Water Volume(L/min)			
		1000mmAq		1100mmAq		1200mmAq		1300mmAq		1400mmAq		1500mmAq		1600mmAq		1700mmAq		1800mmAq		1900mmAq		2000mmAq		Air	Blower
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw		
KBDP-200	990	36.10	74.66	35.65	82.13	35.20	89.59	34.80	97.06	34.40	104.52	33.70	109.95	33.01	115.38	32.83	124.89	32.65	134.39	31.75	141.85	30.84	149.32	400	45
	1050	38.90	79.19	38.45	87.10	38.00	95.02	37.60	102.94	37.20	110.86	36.48	116.74	35.76	122.62	35.64	132.58	35.51	142.53	34.61	150.45	33.71	158.37		
	1110	41.60	83.71	41.15	92.08	40.70	100.45	40.25	108.82	39.80	117.19	39.16	123.53	38.51	129.86	38.45	140.27	38.38	150.68	37.48	159.05	36.58	167.42		
	1180	44.80	88.99	44.35	97.89	43.90	106.79	43.50	115.69	43.10	124.58	42.41	131.11	41.72	137.63	41.73	148.91	41.73	160.18	40.83	169.08	39.92	177.98		
	1250	48.00	94.27	47.55	103.70	47.10	113.12	46.70	122.55	46.30	131.98	45.62	139.03	44.94	146.08	45.00	157.88	45.07	169.68	44.17	179.11	43.27	188.54		
	1320	51.20	99.55	50.75	109.50	50.30	119.46	49.90	129.41	49.50	139.37	48.82	146.95	48.15	154.52	48.28	166.85	48.42	179.18	47.52	189.14	46.61	199.09		
	1390	54.40	104.83	54.00	115.31	53.60	125.79	53.15	136.27	52.70	146.76	52.03	154.86	51.36	162.97	51.56	175.83	51.76	188.69	50.86	199.17	49.96	209.65		

Model	RPM	Type KBDP-250 performance(KSS-250+KSS-200)																				Cooling Water Volume(L/min)			
		1000mmAq		1100mmAq		1200mmAq		1300mmAq		1400mmAq		1500mmAq		1600mmAq		1700mmAq		1800mmAq		1900mmAq		2000mmAq		Air	Blower
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw				
KBDP-250	990	49.60	97.99	49.15	107.79	48.70	117.59	48.20	127.39	47.70	137.19	47.18	146.99	46.67	156.79	46.14	166.59	45.60	176.39	45.05	186.18	44.50	195.98	400	50
	1050	53.30	103.93	52.80	114.32	52.30	124.72	51.85	135.11	51.40	145.50	50.89	155.90	50.38	166.29	49.86	176.68	49.35	187.08	48.84	197.47	48.32	207.86		
	1110	57.00	109.87	56.50	120.86	56.00	131.84	55.50	142.83	55.00	153.82	54.54	164.80	54.09	175.79	53.59	186.78	53.10	197.77	52.62	208.75	52.15	219.74		
	1180	61.30	116.80	60.80	128.48	60.30	140.16	59.80	151.84	59.30	163.52	58.86	175.20	58.41	186.88	57.94	198.56	57.47	210.24	57.04	221.92	56.61	233.60		
	1250	65.50	123.73	65.00	136.10	64.50	148.47	64.05	160.85	63.60	173.22	63.17	185.59	62.74	197.96	62.29	210.34	61.84	222.71	61.45	235.08	61.07	247.45		
	1320	69.80	130.66	69.30	143.72	68.80	156.79	68.35	169.85	67.90	182.92	67.48	195.98	67.07	209.05	66.64	222.11	66.21	235.18	65.87	248.25	65.53	261.31		
	1390	74.10	137.58	73.60	151.34	73.10	165.10	72.55	178.86	72.00	192.62	71.70	206.38	71.39	220.14	70.99	233.89	70.58	247.65	70.28	261.41	69.99	275.17		

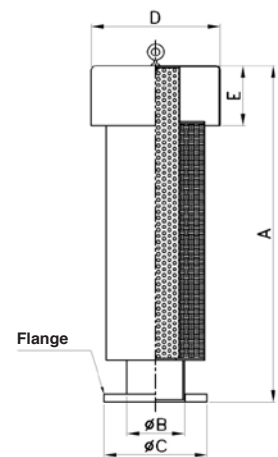
Model	RPM	Type KBDP-300 performance(KSS-300+KSS-300)																				Cooling Water Volume(L/min)			
		1000mmAq		1100mmAq		1200mmAq		1300mmAq		1400mmAq		1500mmAq		1600mmAq		1700mmAq		1800mmAq		1900mmAq		2000mmAq		Air	Blower
		Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw	Qs	kw				
KBDP-300	700	73.90	169.83	72.90	184.60	71.90	199.37	71.05	215.98	70.20	232.60	69.42	246.38	68.65	260.17	67.47	276.43	66.30	292.69	65.13	308.95	63.97	325.21	500	55
	800	87.30	194.09	86.30	210.97	85.30	227.85	84.45	246.84	83.60	265.82	82.81	281.58	82.02	297.33	80.84	315.92	79.67	334.50	78.50	353.08	77.34	371.67		
	900	100.80	218.35	99.80	237.34	98.80	256.33	97.95	277.69	97.10	299.05	96.24	316.78	95.39	334.50	94.21	355.41	93.04	376.31	91.87	397.22	90.70	418.13		
	1000	114.10	242.62	113.10	263.71	112.10	284.81	111.25	308.54	110.40	332.28	109.58	351.97	108.75	371.67	107.58	394.90	106.41	418.13	105.24	441.36	104.07	464.58		
	1100	127.60	266.88	126.60	290.08	125.60	313.29	124.75	339.40	123.90	365.51	123.01	387.17	122.12	408.83	120.95	434.39	119.77	459.94	118.61	485.49	117.44	511.04		
	1200	141.00	291.14	140.00	316.46	139.00	341.77	138.15	370.25	137.30	398.73	136.40	422.37	135.49	446.00	134.32	473.88	133.14	501.75	131.98	529.63	130.81	557.50		
	1300	154.60	315.40	153.60	342.83	152.60	370.25	151.75	401.11	150.90	431.96	149.88	457.57	148.86	483.17	147.69	513.37	146.51	543.56	145.35	573.76	144.18	603.96		
	1400	166.49	339.66	165.42	369.20	164.34	398.73	163.42	431.96	162.51	465.19	162.37	492.76	162.23	520.33	161.05	552.86	159.88	585.38	158.71	617.90	157.55	650.42		

# Accessories

## Dimensions

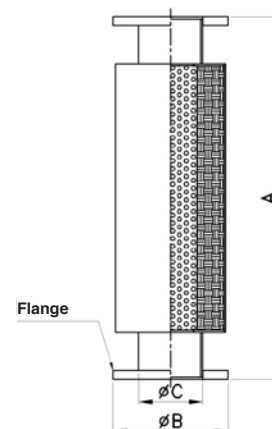
### Suction Silencer

Type	A	øB	øC	D	E	Flange	Fitting Model
SS32	112	32	26	156	36	1" PF	KSS-32
SS40	400	60	130	170	70	JIS 2" 5K	KSS-40
SS50	546	60	140	200	80	JIS 2" 10K	KSS-50
SS65	548	76	165	235	85	JIS 2½" 10K	KSS-65
SS80	818	89	217	310	160	JIS 3" 10K	KSS-80
SS100	818	114	240	350	160	JIS 4" 10K	KSS-100
SS125	1310	139	280	400	185	JIS 5" 10K	KSS-125, KSS-125A
SS150	1312	165	300	450	190	JIS 6" 10K	KSS-150
SS200	1500	216	400	500	280	JIS 8" 10K	KSS-200, KSS-200A
SS250	1700	267	400	500	280	JIS 10" 10K	KSS-250
SS300	1824	319	550	560	280	JIS 12" 10K	KSS-300
SS350	2750	377	700	775	910	JIS 14" 10K	KSS-350
SS400	3000	700	775	910	910	JIS 16" 10K	KSS-400



### Discharge Silencer

Type	A	øB	øC	Flange	Fitting Model
DS50	592	60	140	JIS 2" 5K	KSS-40, 50
DS65	596	76	165	JIS 2½" 10K	KSS-65
DS80	796	89	217	JIS 3" 10K	KSS-80
DS100	796	114	240	JIS 4" 10K	KSS-100
DS125	1260	139	280	JIS 5" 10K	KSS-125, 125A
DS150	1264	165	300	JIS 6" 10K	KSS-150
DS200	1644	216	400	JIS 8" 10K	KSS-200, 200A
DS250	1748	267	400	JIS 10" 10K	KSS-250
DS300	1848	319	550	JIS 12" 10K	KSS-300
DS350	2500	377	700	JIS 14" 10K	KSS-350
DS400	2700	426	700	JIS 16" 10K	KSS-400

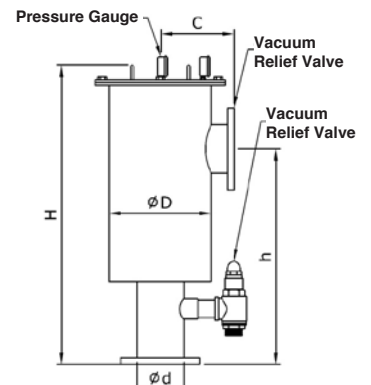


# Accessories

## Dimensions

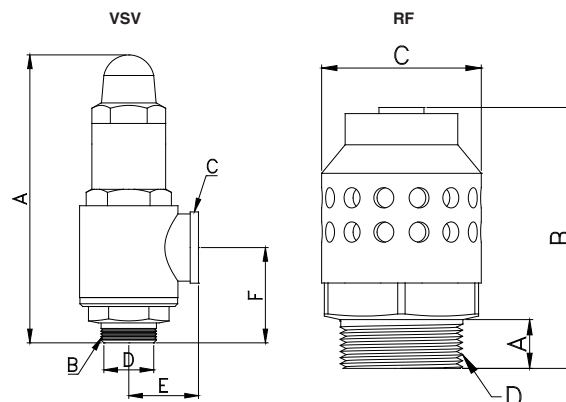
### Suction Filter Tank (KBAV)

Type	H	h	C	$\phi D$	$\phi d$	Flange	Fitting Model
FT40	764	524	222	244	60	JIS 2" 5K	KBAV-50
FT50	764	524	222	244	60	JIS 2" 10K	KBAV-50
FT65	630	440	222	244	76	JIS 2½" 10K	KBAV-65
FT80	927	613	202	244	89	JIS 3" 10K	KBAV-80
FT100	981	667	202	244	114	JIS 4" 10K	KBAV-100
FT125	929	704	280	360	139	JIS 5" 10K	KBAV-65, 125A
FT150	1020	735	280	360	168	JIS 6" 10K	KBAV-150
FT200	1125	770	335	470	216	JIS 8" 10K	KBAV-200, 200A
FT250	1300	900	335	470	267	JIS 10" 10K	KBAV-250
FT300	1400	1000	405	600	319	JIS 12" 10K	KBAV-300
FT350	1600	1100	455	700	377	JIS 14" 10K	KBAV-350
FT400	1800	1300	455	700	426	JIS 16" 10K	KBAV-400



### Vacuum Relief Valve

Type	A	B	C	D	E	F	Fitting Model
VSV 1¼"	210	1¼"	1¼"	1¼"	51	70	KBAV-40, 50, 65, 80
VSV 2"	255	2"	2"	2"	67	89	KBAV-100, 125, 200A, 200, 250
RF 4"	35	168	128	4"	-	-	KBAV-300A, 300, 350, 400

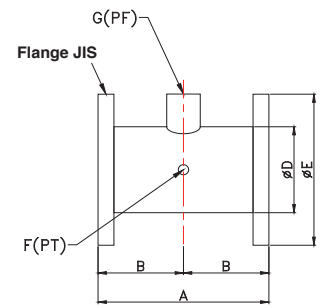


# Accessories

## Dimensions

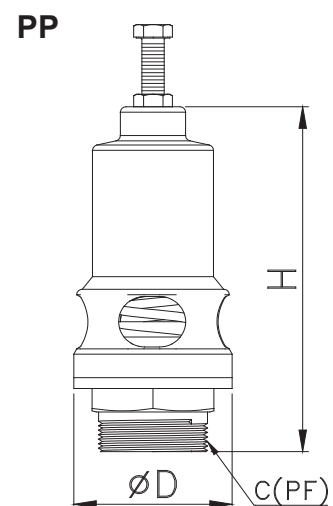
### "T"-Joint

Type	A	B	øD	øE	G	F	Flange	Fitting Model
HJ50	150	75	60	155	1□"	□"	JIS 2" 10K	KSS-40, 50
HJ65	150	75	76	175	1□"	□"	JIS 2½" 10K	KSS-65
HJ80	180	90	89	185	1□"	□"	JIS 3" 10K	KSS-80
HJ100	180	90	114	210	2"	□"	JIS 4" 10K	KSS-100
HJ125	250	125	139	250	2"	□"	JIS 5" 10K	KSS-125, 125A
HJ150	250	125	165	280	2"	□"	JIS 6" 10K	KSS-150
HJ200	250	125	216	330	3"	□"	JIS 8" 10K	KSS-200, 200A
HJ250	250	125	267	400	3"	□"	JIS 10" 10K	KSS-250
HJ300	300	150	319	445	3"	□"	JIS 12" 10K	KSS-300, 300A
HJ350	400	200	377	490	DN150	□"	JIS 14" 10K	KSS-350
HJ400	400	200	426	560	DN150	□"	JIS 16" 10K	KSS-400



### Relief Valve

Type	H	øD	C	Fitting Model
PP □"	182	72	1□"	KSS-32
PP 1□"	182	72	1□"	KSS-40, 50, 65
PP 2"	192	85	2"	KSS-80, 100, 125A, 125, 150
PP 3"	231	115	3"	KSS-200A, 200, 250, 300A, 300
SD 150	292	225	DN150	KSS-350, 400

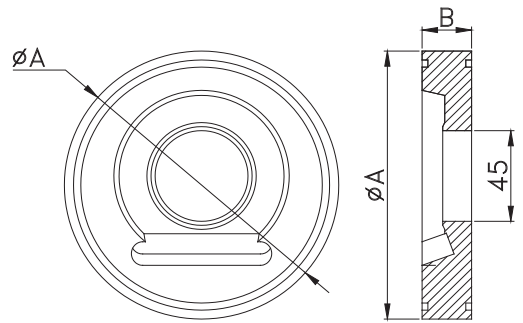


# Accessories

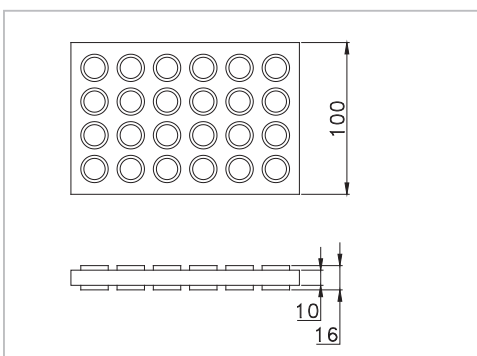
## Dimensions

### Check Valve

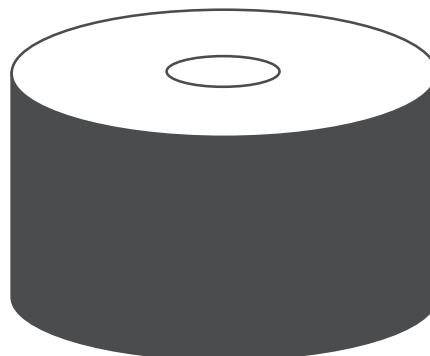
Type	$\phi A$	$\phi a$	B
KSS-40, KSS-50	101	26	20
KSS-65	125	36	24
KSS-80	133	45	24
KSS-100	157	65	22
KSS-125, KSS-125A	187	88	24
KSS-150	217	110	29
KSS-200, KSS-200A	269	138	27
KSS-250	330	186	27
KSS-300, KSS-300A	380	212	32
KSS-350	428	260	35
KSS-400	482	290	40



### Vibration Isolater



Fitting Model: All KSS types.



$\text{Ø}50\text{mm} * 75\text{mm}$ . Fitting Model: KSS-40, 50, 65, 80, 100.

# Accessories

## Silence canopy (optional)

### 1. Material

The inside of the silence canopy use fiber glass and foaming material for making sure of good effect and outside material is made of SS 41.

### 2. Noise level [dB]

The silence canopy can reduce the noise 15dB~20dB.

### 3. Air circulation

The outlet fan of the silence canopy can increase air circulation and remove heat.





# Accessories

## Other optional solutions

- Ceramic bearing for longer life time
- Direct motor coupling
- Water cooled model
- Stainless steel.

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