

TIDEWAY® 3-LOBES ROOTS BLOWERS

TIDEWAY Roots Blowers are modern compact blowers developed through years of research and development. This new 3 lobes blower, also known as Positive Displacement Rotary Blower and Vacuum pump; can attain high performance at a substantially reduced noise and vibration level. A well engineered product to meet today's stringent demands and noise pollution control. Now the Positive Displacement Blowers, Vacuum Pump, and Water Cooling Blowers are available.

TIDEWAY Roots Blowers do not require lubrication in the internal compression air chamber, thus eliminating possible pollution and contamination to the conveying medium. Hence, it can be used on very delicate jobs such as clean air transportation, water aeration, powder conveying, dehumidifying, mixing, etc.

Features:

1. Types

- TW -- Gear Side Oil Lubrication.
- TWS -- Gear Side and Bearing Side Oil Lubrication.
- TWW -- Water Cooled.

2. Size & Capacity

- Bore Size : Diameter 40 mm to 300 mm (1 1/2" ~ 12")
- Flow Rate : 0.36m³/min ~ 160.00m³/min (12.5 ~ 5,700.00 CFM)
- Static Pressure : Maximum achievable

TYPE	SINGLE-STAGE			TWO-STAGE		
	TW	TWS	TWW	TW	TWS	TWW
PRESSURE(Kg/cm ²)	0.8	0.8	1.0	--	1.5	2.0
VACUUM(mmHg)	-500	-500	-550	--	-550	-600

3. Delivers completely oil-free air.
4. Low oscillation and low noise by complete balancing.
5. Small variation in air volume against pressure variation.
6. Superior energy efficiency due to special lobe profile.
7. Simple structure keeps free from trouble.
8. High quality alloy steel gears are adopted. Precisely ground and hardened. which make smooth running and low noise. Long durability is guaranteed.
9. 4 pieces (in models bigger than 200, 6 pieces) of needle bearings are used to support rotors. Which can reduce friction noise, vibration, and increase service time.
10. Rotors are formed and profiled by CNC double column shaper, 4-axes machining in one process guaranty the rotors profile to be uniformed and in high precision.
11. Non-contact labyrinth seals are designed to reduce friction and heat generation, piston rings are set inside to make perfect seal for the air chamber.

FEATURES

Unique Design with Quality Components

Appropriate clearance between the rotors and the rotors with the casing; ensure no direct contact during operation, hence no lubrication is necessary. The synchronous gear drive system and the shaft bearings are the only parts which require lubrication. Separate lateral chambers are designed to house these moving parts with proper seals to prevent oil leakage to the main chamber. Computerized CNC machines are used to produce components and parts of high quality and precision, this saves the user both time and labour during maintenance and replacement.

Low Noise & Minimal Vibration

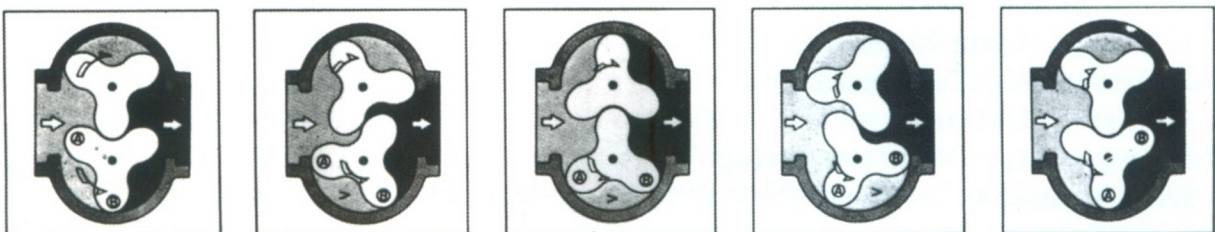
Noise and vibration reduction have been the main emphasis in developing the new series of roots blower. 3 lobes' rotor concept was adopted based on its flow characteristics which is very stable and even, compared to the 2 lobes' type, also coupled the fact that it shows a considerable reduction of both noise and vibration. The extent of reduction can even allow the smaller unit to operate without the need of a silencer.

Blower Mechanism

The basic operating principle is based on a set of two symmetrical rotors rotating in opposite directions. By means of the rotors rotating motion the inlet air volume is expanded. While one of the lobe sweep past the inlet port, one part of the air is captured, compressed and expelled through the outlet port. Figure 5 shows the rotation sequence in stages with air volume V captured between lobe A & B. With a pair of 3 lobes' rotors, a total of 6 such cycle takes place in one full revolution.

Advantages of 3 Lobes' Rotor

While air is captured within the 3 lobes' rotor, the reverse flow pressure variation period is only $2/3$ of that of a conventional 2 lobes' rotor. The peak pressure value is also lower. For these reasons the noise produced from the rapid pressure changes within the blower is greatly reduced. Due to the special design and construction of the rotor, the actual discharge pressure variation shown in Figure 3 is much lower than that of 2 lobes type (See figure 4). Other than lowering the operating noise level, the smooth flow condition also reduces the handling load on the bearings and moving mechanism, this increases the durability of the blower.



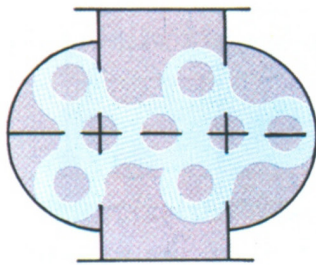
3 LOBES Vs 2 LOBES ROOTS BLOWERS

The conventional 2 lobes blower produces high pressure variation which results in high operating noise and vibration, leading to a shorter service life span of the bearing, gear system and moving mechanism.

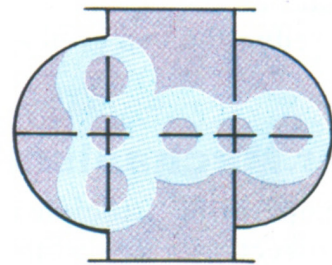
The major advantages of the 3 lobes blower are;

1. Low reverse flow pressure, stable and even flow rate, thus reducing vibration and noise.
2. Low pressure variation (as shown in fig 3) reduces the working load on the bearing and gear system, hence prolonging the service life span.
3. Running on the same rotating speed, the 3 lobes'blower can deliver a larger volume of air as compared to the 2 lobes'type.

▼ **Figure 1. 3 Lobes Blower**

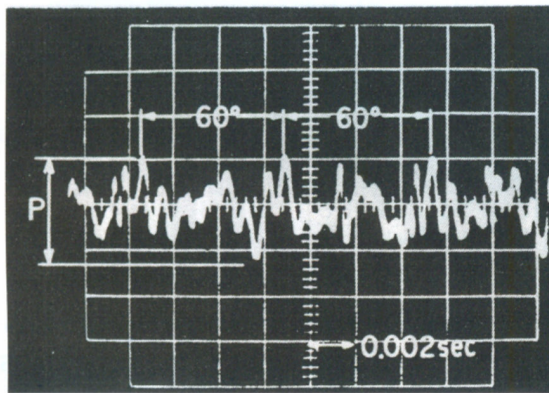


▼ **Figure 2. 2 Lobes BLower**



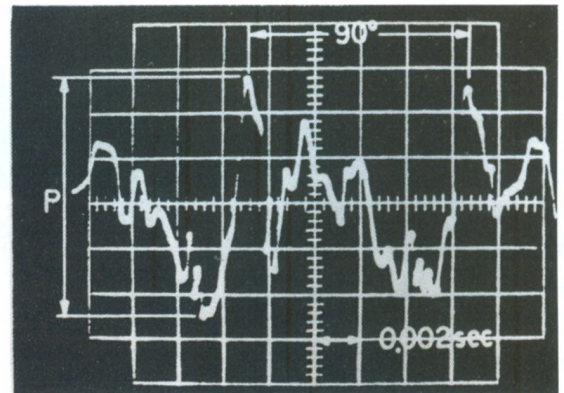
▼ **Figure 3**

(Discharge Pressure Variation of a 3 Lobes Blower)



▼ **Figure 4**

(Discharge Pressure Variation of a 2 Lobes Blower)



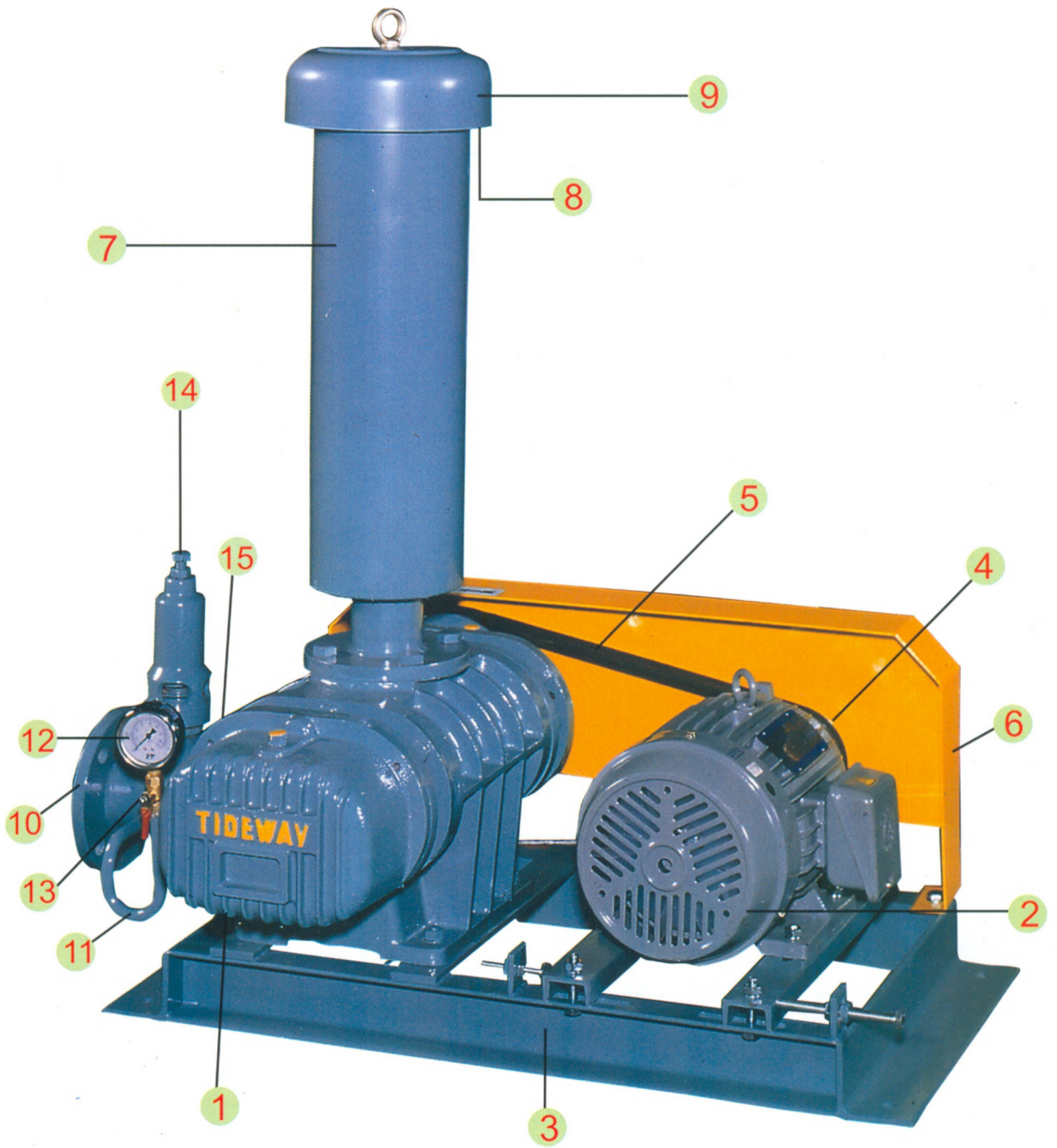
NOTE: Both blowers are operating at 0.5/cm² of discharge pressure.

APPLICATIONS

1. Sewage/Waste Water Aeration
2. Furnace Ash Treatment
3. Dust Collection
4. Pulp & Paper Mill Dewatering
5. Aerating spas
6. Air Extraction
7. Drying
8. Pneumatic Conveying
9. Air Pressured Conveying
10. Agriculture Aeration
11. Blending & Mixing
12. Agitation



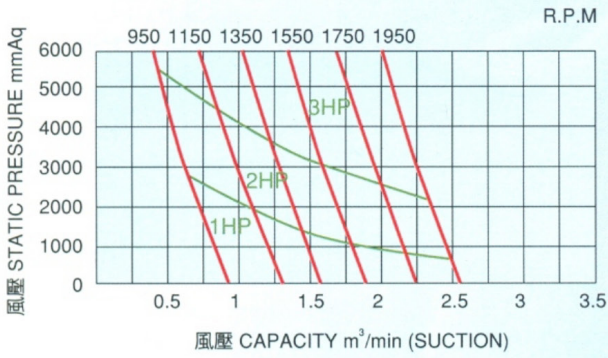
TW & TWS Series



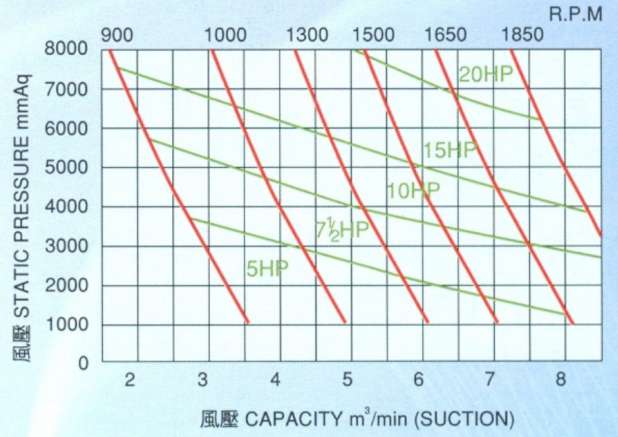
NO.	ACCESSORIES	NO.	ACCESSORIES	NO.	ACCESSORIES
1	BLOWER BODY	6	BELT COVER	11	GAUGE PIPE
2	MOTOR	7	SUCTION SILENCER	12	PRESSURE GAUGE
3	FOUNDATION	8	AIR FILTER	13	"T" JOINT
4	PULLEY	9	RAIN COVER	14	RELIEF VALVE
5	DRIVING BELT	10	BALL VALVE	15	SWING CHECK VALVE

Performance Curves for TWS series

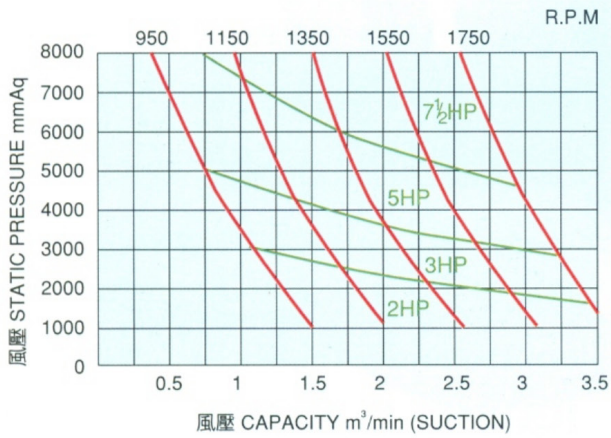
TWS-40



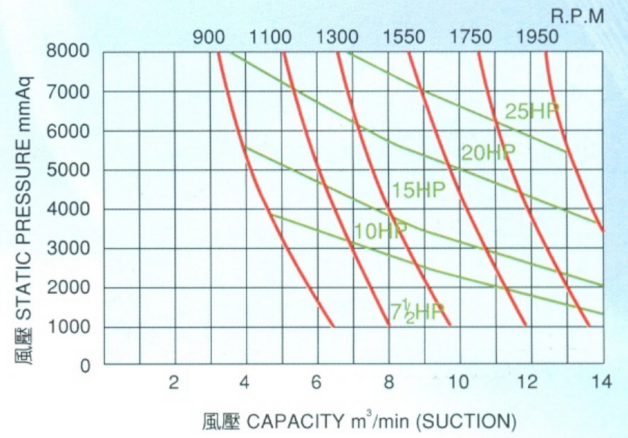
TWS-80



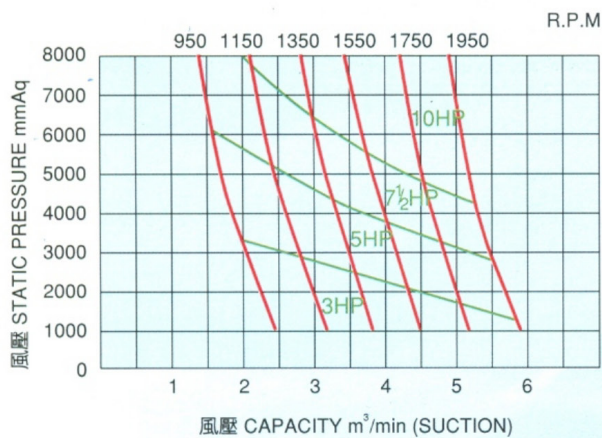
TWS-50



TWS-100

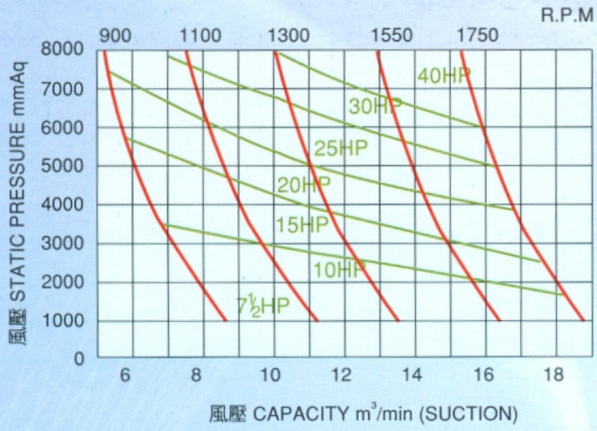


TWS-65

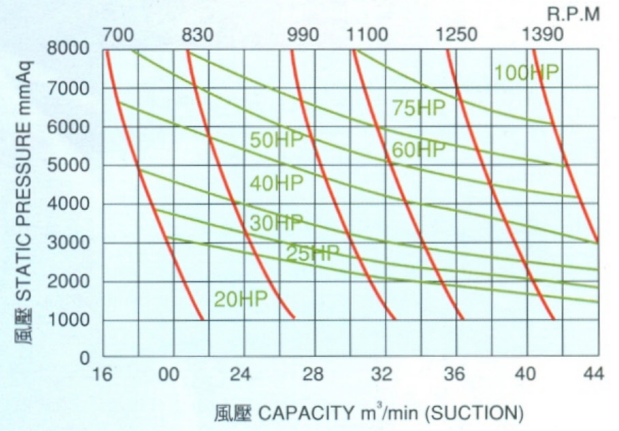


Performance Curves for TWS series

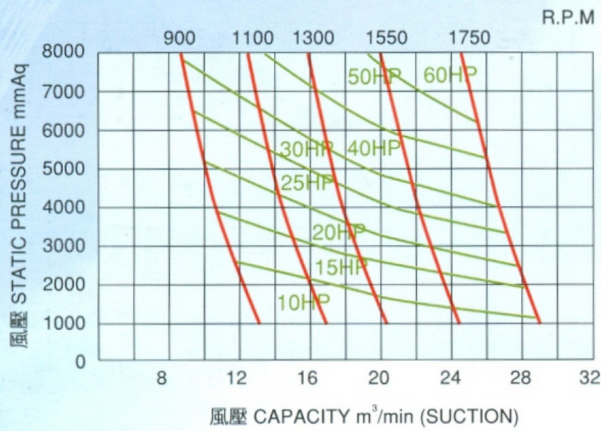
TWS-125A



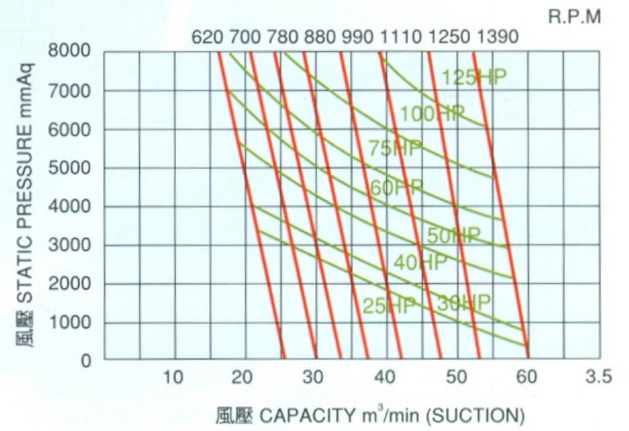
TWS-200A



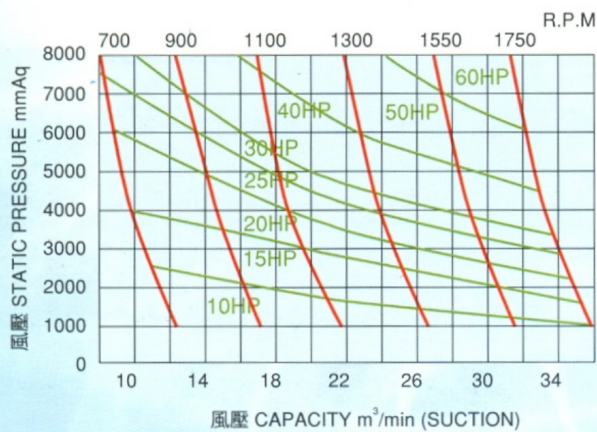
TWS-125



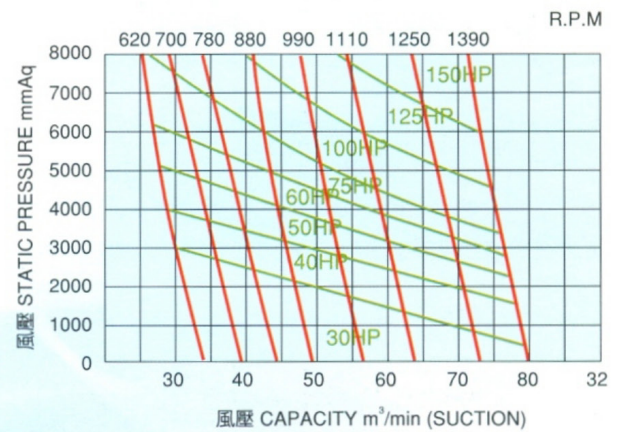
TWS-200



TWS-150



TWS-250



Model	RPM	Type TWS 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
TWS-40	850	0.77	0.27	0.61	0.53	0.50	0.82	0.38	1.00	0.29	1.21	0.23	1.42	0.17	1.61	0.11	1.81
	950	0.94	0.30	0.78	0.59	0.67	0.85	0.55	1.11	0.46	1.34	0.40	1.58	0.33	1.81	0.28	2.02
	1050	1.10	0.33	0.95	0.65	0.82	0.94	0.73	1.22	0.63	1.50	0.55	1.75	0.50	2.00	0.44	2.23
	1150	1.27	0.37	1.12	0.71	1.00	1.03	0.89	1.40	0.79	1.64	0.73	1.92	0.67	2.19	0.61	2.45
	1250	1.44	0.37	1.29	0.77	1.16	1.12	1.06	1.46	0.96	1.78	0.89	2.09	0.83	2.39	0.78	2.55
	1350	1.60	0.43	1.45	0.83	1.33	1.21	1.23	1.58	1.13	1.93	1.06	2.26	1.01	2.56	0.95	2.66
	1450	1.77	0.46	1.62	0.89	1.51	1.30	1.39	1.69	1.31	2.06	1.23	2.42	1.16	2.76	1.12	2.76
	1550	1.93	0.49	1.79	0.95	1.67	1.39	1.56	1.81	1.47	2.21	1.39	2.59	1.33	2.95	1.29	3.08
	1650	2.10	0.52	1.96	1.01	1.84	1.48	1.73	1.93	1.63	2.35	1.57	2.75	1.51	3.14	1.46	3.40
	1750	2.28	0.59	2.12	1.08	2.01	1.57	1.89	2.05	1.80	2.49	1.73	2.92	1.66	3.33	1.62	3.78
	1850	2.44	0.59	2.29	1.14	2.17	1.66	2.06	2.17	1.96	2.63	1.89	3.09	1.83	3.52	1.79	4.04
	1950	2.61	0.62	2.45	1.23	2.34	1.75	2.23	2.29	2.12	2.77	2.05	3.26	1.99	3.70	1.94	4.37

- 1 Qs : Airflow (m³ / min) kW : Axial Power Required (kW)
- 2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +- 5%.

Model	RPM	Type TWS 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
TWS-50	850	1.28	0.45	1.02	0.88	0.83	1.37	0.64	1.66	0.49	2.02	0.37	2.36	0.27	2.69	0.19	3.01
	950	1.56	0.50	1.30	0.98	1.10	1.42	0.93	1.85	0.77	2.24	0.66	2.64	0.55	3.01	0.47	3.37
	1050	1.83	0.55	1.58	1.08	1.37	1.57	1.21	2.04	1.05	2.50	0.93	2.92	0.83	3.33	0.74	3.72
	1150	2.11	0.61	1.87	1.18	1.66	1.72	1.49	2.34	1.32	2.74	1.21	3.20	1.11	3.65	1.02	4.08
	1250	2.39	0.66	2.15	1.28	1.94	1.86	1.77	2.43	1.60	2.97	1.49	3.48	1.39	3.97	1.30	4.25
	1350	2.66	0.72	2.44	1.38	2.23	2.02	2.05	2.63	1.88	3.21	1.77	3.76	1.67	4.27	1.58	4.43
	1450	2.94	0.77	2.70	1.49	2.51	2.17	2.32	2.82	2.16	3.44	2.05	4.03	1.94	4.60	1.87	4.60
	1550	3.22	0.82	2.98	1.59	2.79	2.32	2.60	3.02	2.44	3.68	2.33	4.31	2.23	4.92	2.15	5.13
	1650	3.50	0.87	3.27	1.69	3.07	2.47	2.88	3.22	2.72	3.92	2.61	4.59	2.51	5.24	2.43	5.66
	1750	3.80	0.93	3.54	1.80	3.34	2.62	3.15	3.42	3.00	4.15	2.88	4.87	2.78	5.55	2.70	6.30
	1850	4.08	0.98	3.82	1.90	3.62	2.77	3.43	3.62	3.27	4.38	3.15	5.15	3.05	5.86	2.97	6.74
	1950	4.36	1.03	4.10	2.00	3.90	2.92	3.71	3.82	3.54	4.61	3.42	5.43	3.32	6.17	3.24	7.28

1 Qs : Airflow (m³ / min) kW : Axial Power Required (kW)

2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +/- 5%.

Model	RPM	Type TWS 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
TWS-65	850	2.15	0.62	1.97	1.21	1.78	1.76	1.61	2.29	1.47	2.78	1.34	3.26	1.24	3.71	1.13	4.15
	950	2.51	0.83	2.32	1.35	2.13	1.96	1.97	2.55	1.81	3.11	1.70	3.64	1.59	4.15	1.49	4.64
	1050	2.87	1.20	2.68	1.49	2.50	2.16	2.32	2.82	2.17	3.44	2.06	4.02	1.94	4.57	1.84	5.13
	1150	3.22	1.35	3.05	1.64	2.85	2.38	2.68	3.09	2.55	3.77	2.42	4.41	2.31	5.03	2.20	5.62
	1250	3.55	1.50	3.40	1.78	3.20	2.59	3.04	3.36	2.90	4.09	2.78	4.79	2.66	5.46	2.56	6.10
	1350	3.92	1.60	3.75	1.92	3.56	2.80	3.39	3.63	3.26	4.42	3.13	5.17	3.03	5.90	2.91	6.59
	1450	4.30	1.70	4.12	2.06	3.92	3.01	3.76	3.90	3.62	4.75	3.49	5.56	3.39	6.34	3.28	7.08
	1550	4.66	1.80	4.47	2.20	4.27	3.21	4.12	4.17	3.97	5.07	3.85	5.94	3.74	6.77	3.63	7.56
	1650	5.01	1.90	4.84	2.34	4.63	3.42	4.47	4.44	4.33	5.40	4.20	6.32	4.10	7.20	3.99	8.54
	1750	5.38	2.00	5.20	2.49	4.99	3.63	4.84	4.70	4.68	5.73	4.57	6.70	4.46	7.64	4.36	8.54
	1850	5.73	2.10	5.55	2.63	5.35	3.83	5.19	4.98	5.03	6.05	4.92	7.08	4.82	8.07	4.71	9.02
1950	6.09	2.20	5.91	2.77	5.70	4.04	5.54	5.25	5.39	6.38	5.27	7.46	5.17	8.50	5.08	9.51	

1 Qs : Airflow (m³ / min) kW : Axial Power Required (kW)

2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +- 5%.

Model	RPM	Type TWS 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
TWS-80	800	3.11	1.40	2.73	2.12	2.39	2.81	2.07	3.51	1.79	4.31	1.52	5.43	1.29	6.55	1.09	7.67
	900	3.76	1.50	3.48	2.32	3.14	3.14	2.81	3.84	2.53	4.64	2.27	5.76	2.02	6.88	1.82	8.00
	1000	4.50	1.60	4.23	2.53	3.88	3.47	3.56	4.25	3.27	5.52	3.02	6.64	2.79	7.06	2.59	8.18
	1100	5.25	1.70	4.98	2.75	4.63	3.80	4.31	4.70	4.02	5.71	3.77	6.83	3.54	7.95	3.34	9.07
	1200	5.78	1.80	5.50	2.91	5.16	4.03	4.84	5.04	4.59	6.05	4.35	7.17	4.11	8.29	3.91	9.41
	1300	6.47	1.90	6.15	3.20	5.81	4.25	5.49	5.60	5.30	6.72	5.02	7.84	4.79	8.96	4.59	10.08
	1400	6.99	2.00	6.71	3.47	6.37	4.59	6.05	5.82	5.76	7.05	5.50	8.28	5.28	9.56	5.07	10.84
	1500	7.49	2.10	7.21	3.50	6.87	5.04	6.55	6.27	6.26	7.50	6.00	8.96	5.78	10.42	5.57	11.88
	1600	8.30	2.20	8.03	3.92	7.68	5.26	7.34	6.66	7.07	8.06	6.82	9.52	6.59	10.98	6.39	12.44
	1650	8.58	2.25	8.30	4.03	7.96	5.37	7.64	6.83	7.35	8.28	7.09	9.74	6.87	11.20	6.67	12.66
	1750	9.18	2.35	8.86	4.25	8.50	5.71	8.17	7.28	7.90	8.73	7.63	10.30	7.40	11.87	7.20	13.44
1850	9.70	2.45	9.34	4.70	9.00	6.04	8.68	7.61	8.40	9.18	8.13	10.86	7.91	12.30	7.70	13.77	

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Model	RPM	Type TWS 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
TWS-100	850	5.78	1.46	5.13	2.82	4.55	4.04	4.02	5.19	3.57	6.03	3.17	7.20	2.81	8.10	2.50	8.96
	950	6.68	1.64	6.02	3.17	5.45	4.55	4.92	5.83	4.47	6.91	4.07	8.10	3.71	9.11	3.40	10.07
	1000	7.58	1.83	6.92	3.52	6.35	5.06	5.82	6.48	5.37	7.79	4.96	9.00	4.61	10.13	4.30	11.18
	1100	8.47	2.01	7.82	3.87	7.24	5.56	6.72	7.12	6.27	8.67	5.86	9.90	5.51	11.14	5.08	12.29
	1200	9.37	2.19	8.72	4.22	8.14	6.07	7.62	7.77	7.17	9.55	6.76	10.80	6.41	12.15	6.10	13.41
	1300	10.27	2.38	9.62	4.57	9.04	6.58	8.52	8.42	8.07	10.43	7.66	11.70	7.31	13.17	7.00	14.53
	1400	11.17	2.56	10.52	4.92	9.94	7.08	9.48	9.07	8.97	11.31	8.56	12.60	8.21	14.18	7.90	15.69
	1550	12.54	2.76	11.89	5.09	11.31	7.84	10.79	10.04	10.23	12.63	9.82	13.95	9.47	15.70	9.16	17.31
	1650	13.43	2.98	12.78	5.62	12.20	8.34	11.67	10.69	11.22	13.13	10.82	14.85	10.46	16.71	10.15	18.43
	1750	14.32	3.21	13.66	6.15	13.09	8.85	12.56	11.33	12.11	13.62	11.71	15.75	11.35	17.72	11.04	19.55
	1850	15.20	3.43	14.76	6.68	14.31	9.35	13.78	11.98	13.33	14.26	12.86	16.65	12.51	18.73	12.17	20.67
1950	16.09	3.66	15.54	7.21	15.10	9.86	14.63	12.63	14.18	14.62	13.77	17.55	13.42	19.74	13.11	21.79	

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- 2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +/- 5%.

Model	RPM	Type TWS 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
TWS-125	780	11.52	3.69	10.50	5.97	9.71	8.15	9.15	10.42	8.58	12.60	8.01	14.88	7.59	17.06	7.18	19.24
	830	12.43	3.92	11.41	6.30	10.62	8.69	10.06	11.08	9.48	13.47	8.92	15.86	8.48	18.25	8.11	20.64
	880	13.33	4.13	12.31	6.62	11.52	9.12	10.85	11.73	10.39	14.23	9.82	16.72	9.37	19.22	8.94	21.72
	930	14.12	4.34	13.21	6.95	12.43	9.67	11.74	12.38	11.18	15.10	10.73	17.70	10.28	20.31	9.88	22.92
	990	15.25	4.56	14.27	7.39	13.54	10.21	12.88	13.14	12.31	15.96	11.74	18.79	11.23	21.61	10.94	24.43
	1050	16.43	4.78	15.31	7.82	14.57	10.86	13.92	13.90	13.32	16.83	12.80	19.87	13.42	23.02	12.06	26.06
	1100	17.39	5.10	16.43	8.25	15.70	11.29	15.00	14.55	14.46	17.81	13.92	21.07	13.44	24.98	12.90	28.90
	1180	18.64	5.32	17.59	8.69	16.94	12.16	16.27	15.64	15.60	18.90	15.16	22.80	14.68	26.06	14.14	29.32
	1250	19.99	5.54	18.97	9.23	18.19	12.82	17.59	16.40	17.06	19.98	16.54	23.89	16.04	27.80	15.50	31.71
	1320	21.24	5.86	20.22	9.77	19.43	13.47	18.87	17.59	18.29	21.07	17.73	25.19	17.28	29.32	16.74	32.69
	1390	22.47	6.19	21.46	10.21	20.66	14.12	20.10	18.14	19.54	22.81	18.98	27.15	18.52	30.41	17.99	33.67
1470	23.94	6.52	22.93	10.75	22.15	14.99	21.46	19.11	20.90	23.89	20.45	28.24	19.99	34.75	19.45	36.94	

- 1 Qs : Airflow (m³ / min) kW : Axial Power Required (kW)
- 2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +/- 5%.

Model	RPM	Type TWS 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
TWS-150	780	15.17	4.45	13.87	7.41	13.04	10.26	12.21	13.11	11.50	16.07	10.91	18.92	10.41	21.77	10.04	24.62
	830	16.24	4.79	15.06	7.87	14.23	10.83	13.40	13.91	12.69	16.99	12.10	20.18	11.55	23.37	11.18	26.56
	880	17.43	5.02	16.24	8.21	15.30	11.51	14.58	14.82	13.87	18.01	13.16	24.32	12.81	24.63	12.43	27.94
	930	18.62	5.13	17.43	8.66	16.48	12.20	15.65	15.62	15.06	19.04	14.34	22.80	13.85	26.56	12.52	30.32
	990	19.92	5.59	18.86	9.23	17.90	12.88	17.08	16.53	16.36	20.18	15.77	23.94	15.31	27.70	14.91	31.46
	1050	21.34	5.93	20.16	9.80	19.21	13.68	18.49	17.56	17.78	21.43	17.08	25.08	16.47	28.73	16.16	32.50
	1100	22.77	6.15	21.58	10.26	20.63	14.36	19.80	18.47	19.21	22.57	18.49	27.38	18.00	32.20	17.62	37.00
	1180	24.30	6.50	23.12	11.51	22.29	15.28	21.46	19.61	20.75	25.08	20.16	29.64	19.67	34.20	19.28	38.76
	1250	25.97	6.95	24.78	11.51	23.83	16.18	23.12	20.75	22.41	26.22	21.82	30.78	21.33	35.34	20.95	39.90
	1320	27.62	7.30	26.32	12.77	25.49	16.99	24.66	21.89	24.07	27.37	23.36	31.92	22.88	36.48	22.53	41.04
	1390	29.16	7.64	27.98	12.77	27.03	17.90	26.32	23.90	25.60	28.50	25.01	34.20	24.56	39.90	24.17	46.60
	1470	31.06	8.09	29.88	13.45	28.93	18.92	28.10	25.08	27.51	30.78	26.92	36.48	26.43	42.18	26.06	47.88

1 Qs : Airflow (m³ / min) kW : Axial Power Required (kW)

2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +/- 5%.

Model	RPM	Type TWS 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
TWS-200	620	26.97	7.00	25.09	11.90	23.53	16.80	22.31	22.00	21.31	26.00	20.20	32.00	19.31	37.00	18.54	42.00
	660	28.97	7.50	27.08	12.70	25.64	17.90	24.42	23.00	23.31	28.00	22.31	34.00	21.42	39.00	20.65	44.00
	700	30.97	7.90	29.08	13.40	27.64	18.90	26.42	24.00	25.31	30.00	24.31	37.00	25.53	44.00	24.75	47.00
	740	33.08	8.30	31.19	14.10	29.64	20.00	28.42	26.00	27.42	31.00	26.31	38.00	25.53	44.00	24.75	50.00
	780	35.08	8.70	33.19	14.90	31.75	21.00	30.53	27.00	29.42	33.00	28.42	40.00	27.53	46.00	26.75	52.00
	830	37.63	9.40	35.74	15.90	34.19	23.00	32.97	29.00	31.86	37.00	30.97	43.00	30.08	49.00	29.30	55.00
	880	40.18	10.00	38.18	16.90	36.74	24.00	35.52	31.00	34.52	39.00	33.52	45.00	32.63	52.00	31.86	59.00
	930	42.74	10.40	40.85	17.70	39.29	25.00	38.07	32.00	37.07	40.00	36.08	47.00	35.19	54.00	33.30	61.00
	990	45.73	11.00	43.85	18.80	42.40	26.00	41.18	34.00	40.07	43.00	39.07	50.00	38.18	58.00	37.41	66.00
	1050	48.84	11.60	46.95	20.00	45.40	28.00	44.18	37.00	43.18	45.00	42.18	53.00	41.29	61.00	40.52	69.00
	1110	51.84	12.20	49.95	21.00	48.51	30.00	47.29	39.00	46.18	48.00	45.18	56.00	44.29	65.00	43.51	74.00
	1180	55.39	13.10	53.50	22.00	52.06	31.00	50.84	41.00	49.73	50.00	48.73	59.00	47.84	68.00	47.06	77.00
	1250	58.94	13.80	57.05	24.00	55.61	33.00	54.39	44.00	53.28	53.00	52.28	63.00	51.39	72.00	50.62	83.00
1320	62.49	14.50	60.61	25.00	59.16	35.00	57.94	46.00	56.83	56.00	55.83	66.00	54.95	77.00	54.17	88.00	
1390	66.05	15.20	64.16	26.00	62.72	38.00	61.49	48.00	60.38	59.00	59.50	70.00	58.50	81.00	56.61	92.00	

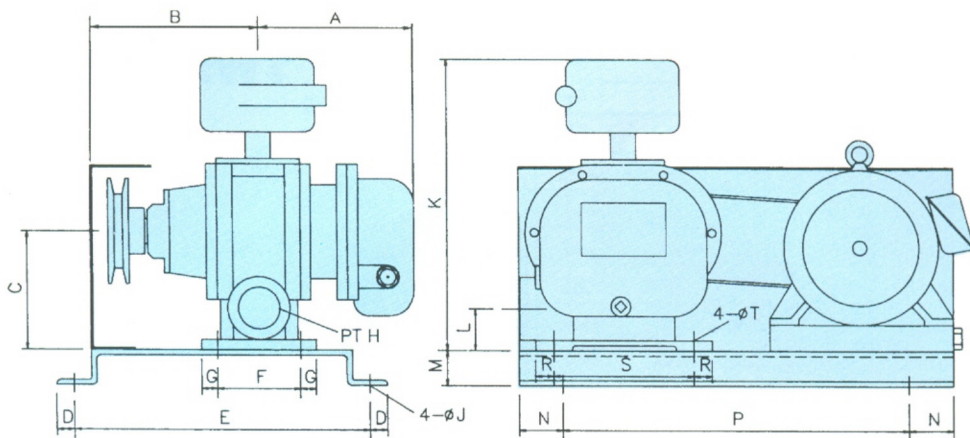
1 Qs : Airflow (m³ / min) kW : Axial Power Required (kW)

2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +- 5%.

Model	RPM	Type TWS 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
TWS-250	620	36.63	9.11	34.41	15.65	32.75	22.51	31.30	30.02	29.97	35.38	28.75	42.88	28.19	48.24	27.20	53.60
	660	39.41	9.76	37.19	16.62	35.52	23.58	33.97	31.09	32.75	37.52	31.52	45.02	41.51	50.38	29.42	55.74
	700	41.96	10.29	39.85	17.69	38.07	25.73	36.63	32.16	35.52	40.74	34.30	48.24	33.19	54.67	32.41	61.10
	740	44.73	10.83	42.62	18.65	40.85	26.80	39.41	34.30	38.07	42.88	36.96	50.38	35.96	57.89	35.08	65.40
	780	47.51	11.36	45.18	19.72	43.51	27.87	42.18	36.45	40.85	45.02	39.74	52.53	38.63	61.10	37.74	69.67
	830	50.95	12.00	48.62	20.90	46.84	30.00	45.51	38.60	44.29	48.24	43.07	55.74	41.96	64.32	39.07	72.90
	880	54.28	12.65	52.06	22.51	50.28	31.10	48.95	40.74	47.62	50.38	46.51	58.96	45.51	68.61	44.40	78.26
	930	57.72	13.40	55.50	23.58	53.84	32.16	52.50	42.88	51.06	52.53	49.84	62.18	49.51	71.82	48.29	81.46
	990	61.72	14.15	59.50	24.66	57.83	34.30	56.39	46.10	55.06	55.74	54.06	66.46	52.95	77.18	51.62	87.90
	1050	65.82	15.00	63.71	25.73	61.83	36.45	60.50	48.24	59.16	59.00	58.05	69.88	57.05	81.47	56.17	93.06
	1110	69.93	15.75	67.71	27.87	65.93	39.66	64.49	51.46	63.27	62.18	62.16	73.97	61.05	85.76	60.16	97.55
	1180	74.59	16.72	72.48	28.94	70.71	41.80	69.26	54.67	68.04	66.46	66.93	79.33	65.82	91.12	64.82	102.90
	1250	79.37	17.80	77.26	31.09	75.48	45.02	74.04	58.81	72.71	69.68	71.60	83.62	70.60	96.48	69.60	109.30
1320	84.14	18.76	82.03	32.16	80.25	47.17	78.81	60.00	77.48	73.97	76.37	87.90	75.37	101.48	74.48	115.10	
1390	88.91	19.72	86.58	34.30	84.92	49.31	83.81	63.25	82.25	78.26	81.14	93.26	79.92	108.30	79.03	123.30	

- 1 Qs : Airflow (m³ / min) kW : Axial Power Required (kW)
- 2 The indicated Axial Powers are the blower powers, when selecting electric motor powers, please multiply the values by factor 1.1; tolerance of above airflow and axial power is +/- 5%.

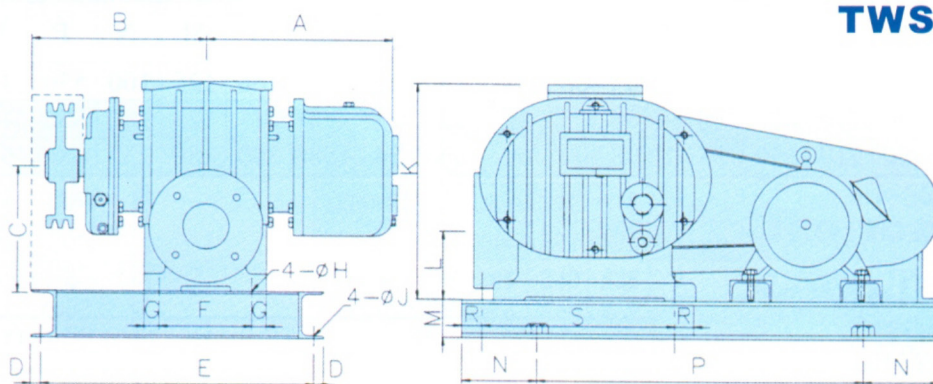
TW & TWS Dimensions



UNITS: mm

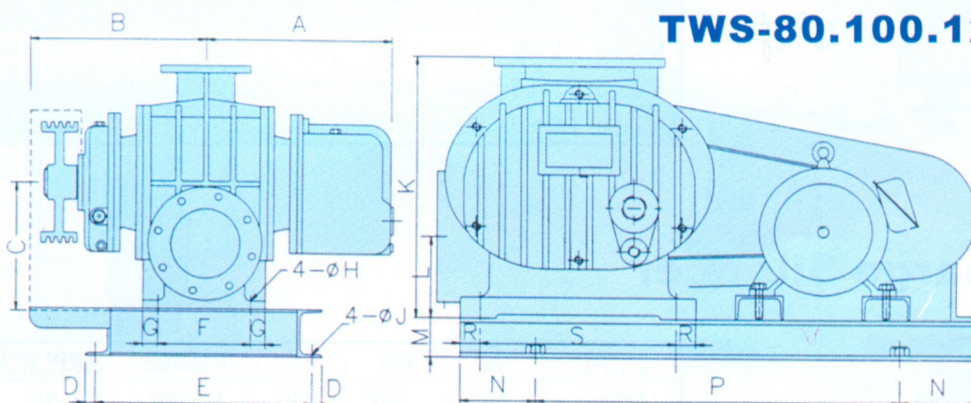
MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Wt. (kg.)
TW-40	150	160	120	20	340	80	15	15	12	340	40	40	50	400	18	135	10	50

TWS-50.65



MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	Wt. (kg.)
TWS-50	271	277	175	20	410	165	23	14	15	270	100	75	50	620	23	196	100
TWS-65	312	302	175	20	410	195	28	14	15	274	100	75	50	620	25	196	105

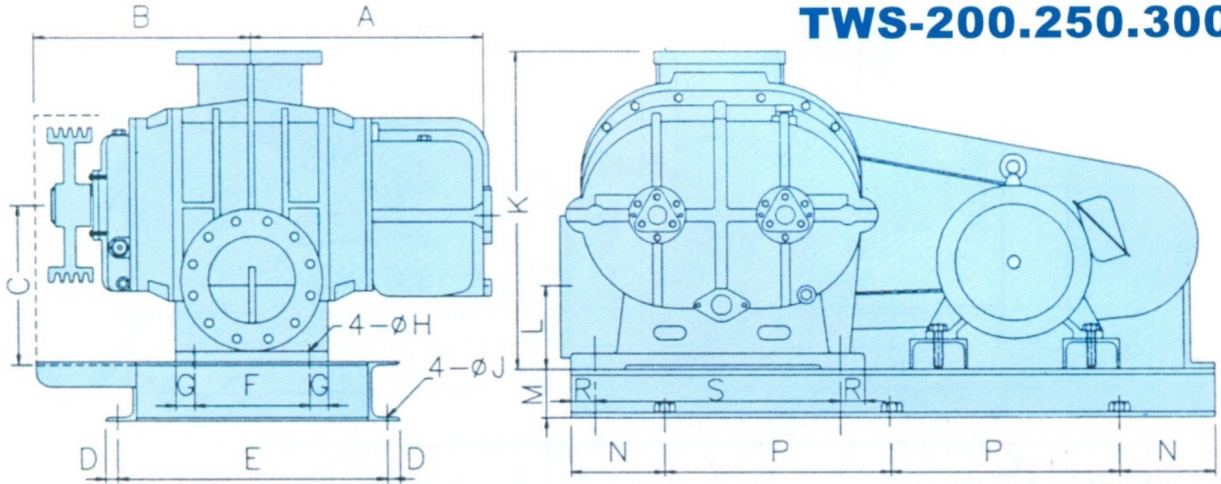
TWS-80.100.125.150



MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	Wt. (kg.)
TWS-80	326	419	213	20	510	195	20	16	15	388	110	75	100	670	23	196	183
TWS-100	370	449	225	25	550	275	27	16	15	406	124	100	100	760	35	232	216
TWS-125	470	446	265	25	550	310	30	19	19	510	160	100	100	900	30	355	356
TWS-125A	420	450	265	25	550	210	25	19	19	517	134	100	100	900	26	346	334
TWS-150	550	570	295	25	550	428	30	19	19	540	167	100	100	900	28	355	415
TWS-200A	620	620	355	30	740	239	43	23	23	600	200	100	100	1300	40	555	810

TWS-DIMENSIONS

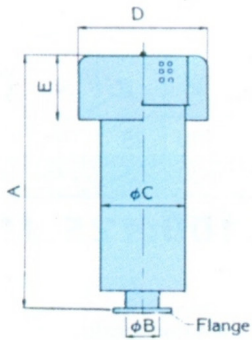
TWS-200.250.300



UNITS: mm.

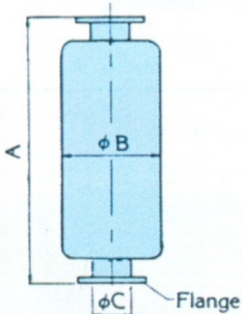
MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	Wt. (kG.)
TWS-200	610	645	405	30	940	400	43	23	24	735	186	125	100	550	40	550	1080
TWS-250	690	720	435	30	940	525	45	23	24	800	221	125	100	550	40	550	1250
TWS-300	780	810	550	35	1030	500	60	34	24	1080	300	150	235	1000	50	700	2550

Accessories: Inlet Silencer



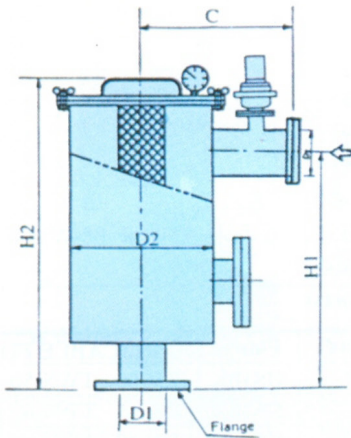
TYPE	A	φB	φC	φD	E	Flange	APPLICABLE FOR
SS50	700	50	140	220	80	JIS10k	TW-50 TWS-50
SS65	700	65	165	235	85	JIS10k	TW-65 TWS-65
SS80	900	80	210	310	145	JIS10k	TW-80 TWS-80
SS100	1000	100	240	350	160	JIS10k	TW-100 TWS-100
SS125	1250	125	280	400	185	JIS10k	TW-125 TWS-125
SS150	1450	150	300	450	190	JIS10k	TW-150 TWS-150
SS200	1500	200	400	500	210	JIS10k	TW-200 TWS-200
SS250	1700	250	400	500	210	JIS10k	TW-250 TWS-250
SS300	1800	300	500	650	350	JIS10k	TW-300 TWS-300

Discharge Silencer



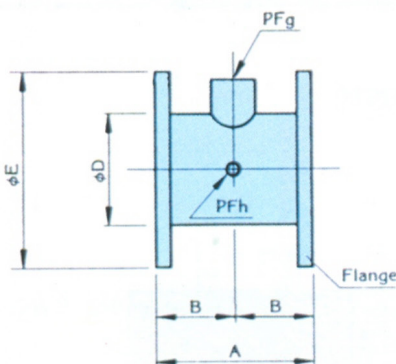
TYPE	A	φB	φC	Flange	APPLICABLE FOR
DS50	560	140	50	JIS10k	TW-50 TWS-50
DS65	640	165	65	JIS10k	TW-65 TWS-65
DS80	850	210	80	JIS10k	TW-80 TWS-80
DS100	950	240	100	JIS10k	TW-100 TWS-100
DS125	1150	280	125	JIS10k	TW-125 TWS-125
DS150	1350	300	150	JIS10k	TW-150 TWS-150
DS200	1600	400	200	JIS10k	TW-200 TWS-200
DS250	1700	400	250	JIS10k	TW-250 TWS-250
DS300	1800	500	300	JIS10k	TW-300 TWS-300

Inlet Filter Chamber



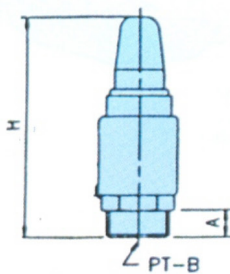
TYPE	ϕD_1	ϕD_2	C	H ₁	H ₂	Flange	APPL. FOR
FT50	50	244	222	340	530	JIS10k	TWSV-50
FT65	65	244	222	440	630	JIS10k	TWSV-65
FT80	80	244	222	525	730	JIS10k	TWSV-80
FT100	100	285	240	525	730	JIS10k	TWSV-100
FT125	125	360	280	505	730	JIS10k	TWSV-125
FT150	150	360	280	595	880	JIS10k	TWSV-150
FT200	200	470	335	650	1000	JIS10k	TWSV-200
FT250	250	470	335	800	1200	JIS10k	TWSV-250
FT300	300	600	405	1000	1400	JIS10k	TWSV-300

T-Joint



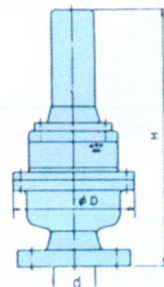
TYPE	A	B	ϕD	ϕE	g	h	Flange	APPLICABLE FOR
HJ50	50	244	222	340	1 1/4"	1/4"	JIS10k	TW-50 TWS-50
HJ65	65	244	222	440	1 1/4"	1/4"	JIS10k	TW-65 TWS-65
HJ80	80	244	222	525	1 1/4"	1/4"	JIS10k	TW-80 TWS-80
HJ100	100	285	240	525	2"	1/4"	JIS10k	TW-100 TWS-100
HJ125	125	360	280	505	2"	1/4"	JIS10k	TW-125 TWS-125
HJ150	150	360	280	595	2"	1/4"	JIS10k	TW-150 TWS-150
HJ200	200	470	335	650	3"	1/4"	JIS10k	TW-200 TWS-200
HJ250	250	470	335	800	3"	1/4"	JIS10k	TW-250 TWS-250
HJ300	300	600	405	1000	3"	1/4"	JIS10k	TWS-300

Pressure Relief Valve



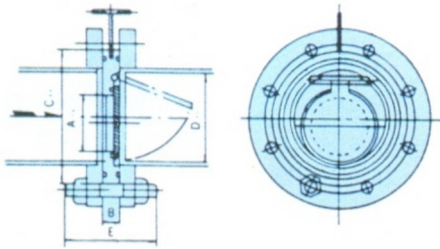
TYPE	A	H	APPLICABLE FOR
SV1 1/4"	25	150	TWS-50.65.80 TWS-50.65.80
SV 2"	25	180	TW-125.150.100 TWS-125.150.100
SV 3	30	250	TW-200.250. TWS-200.250.300

Vacuum Safety Valve



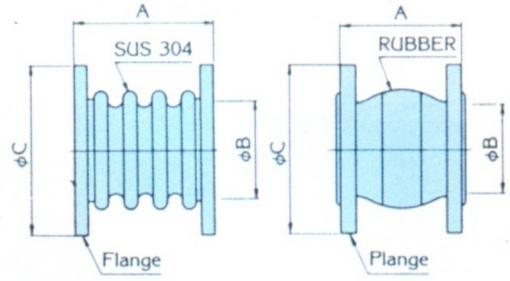
TYPE	d	D	H	APPLICABLE FOR
VB-40	40A	165	330	TW-50.65.80 TWS-50.65.80
VB-65	65A	200	410	TW-125.150.100 TWS-125.150.100
VB-80	80A	230	510	TW-200.250. TWS-200.250.300

Check Valve



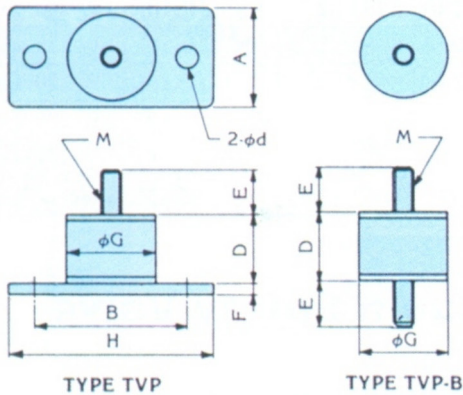
TYPE	Nominal Dia	dφ	A	B	C	E
DCV-50	50A	52.7	25	20	104	86
DCV-65	65A	65.9	36	24	124	108
DCV-80	80A	78.1	46	24	134	108
DCV-100	100A	102.3	67	24	159	108
DCV-125	125A	126.6	88	25	190	115
DCV-150	150A	151	108	26	220	115
DCV-200	200A	200	138	28	270	127
DCV-250	250A	251.4	185	28	331	127
DCV-300	300A	300	220	30	370	150

Expansion joint



TYPE	A	φB	φC	Flange	APPLICABLE FOR
EJ50	85	50	130	JIS10K	TW-50 TWS-50
EJ65	95	65	155	JIS10K	TW-65 TWS-65
EJ80	110	80	180	JIS10K	TW-80 TWS-80
EJ100	115	100	210	JIS10K	TW-100 TWS-100
EJ125	140	125	250	JIS10K	TW-125 TWS-125
EJ150	150	150	280	JIS10K	TW-150 TWS-150
EJ200	170	200	330	JIS10K	TW-20 TWS-20
EJ250	210	250	400	JIS10K	TW-250 TWS-250
EJ300	240	300	445	JIS10K	TW-300

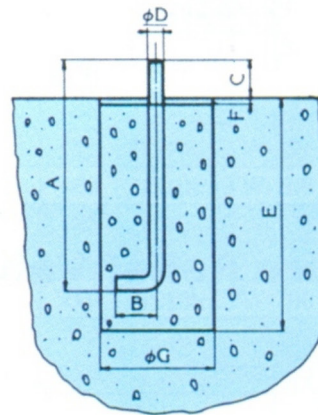
Vibration Isolator



TYPE	A	B	D	E	F	φG	M	φd	H	APPLICABLE FOR
TVP 102	60	90	40	25	6	50	M12	12	140	TW-50.65.80.100 TWS-50.65.80.100
TVP 103	80	120	55	35	9	70	M16	15	160	TW-125.150 TWS-125.150
TVP 104	110	160	80	45	12	100	M20	19	210	TW-200.250.300 TWS-200.250.300

TYPE	D	E	φG	M	APPLICABLE FOR
TVP 102B	40	25	50	M12	TW-50.65.80.100 TWS-50.65.80.100
TVP 103B	55	35	70	M16	TW-125.150 TWS-125.150
RVP 104B	80	45	100	M20	TW-200.250.300 TWS-200.250.300

Anchor Bolt



TYPE	A	B	C	D	E	F	φG	APPLICABLE FOR
M12	165	30	25	12	165	5	100	TW-50.65.80.100 TWS-50.65.80.100
M16	245	45	40	16	245	5	120	TW-125.150 TWS-125.150
M20	325	55	55	20	325	5	150	TW-200.250.300 TWS-200.250.300