



# *Roots Type Blowers*

# TSR



# ROOTS TYPE BLOWERS

## TSR Series

### Applications

- Wastewater Aeration
- Activated Sludge Process
- Aquaculture
- Combustion Furnace
- Pneumatic Conveyance
- Vacuum Packaging

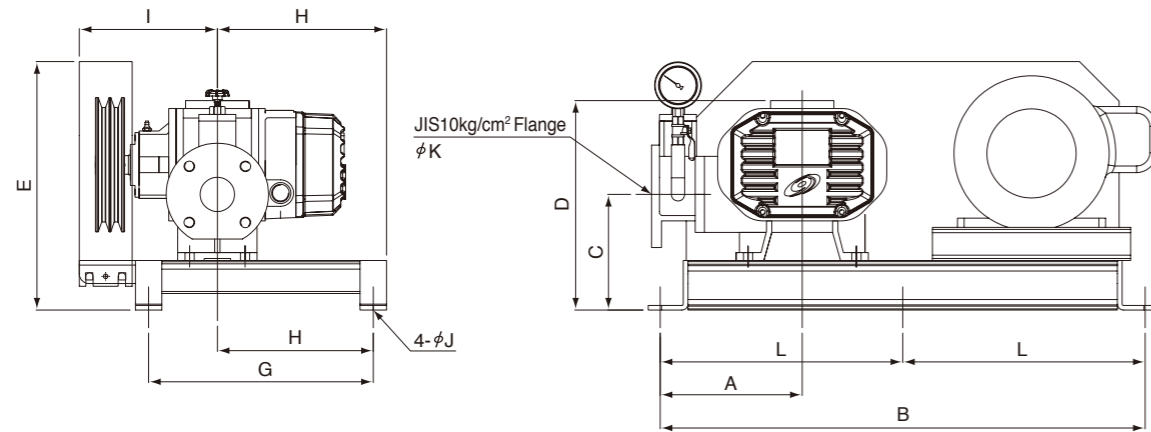
### Accessories

- Silencer (Suction & Discharge)
- T-joint
- Check Valve
- Safety Valve
- Pressure Gauge
- Anti-vibration Joint
- Vibration Rubber
- Anchor Bolt

### Major Standard Specifications

Discharge Bore		mm	50	65	80	100	125	150	200
Fluid	Type	Air							
	Temperature	0 to 40°C							
Blower	Structure	Rotor	3-lobe, Spur Type						
		Shaft Seal	Labyrinth						
		Bearing	Ball Bearings						
	Material	Casing	Gray Cast Iron						
		Shaft	Chrome-molybdenum Steel						
		Rotor	Gray Cast Iron						
Motor	Type	Drip-proof, Indoor Use							
	Pole	4-pole							
	Phase	3-phase							
Discharge Connection		JIS 10kg/cm <sup>2</sup> Flange							

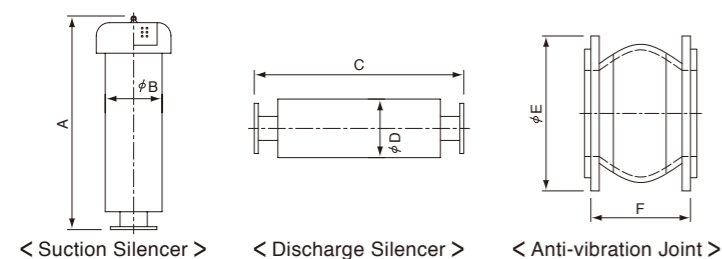
### Dimensions



Unit: mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	Weight (kg)
TSR2-50	215	734	175	317	343	236	340	256	199	15	50	—	55
TSR2-65	215	734	175	317	343	214	340	234	222	15	65	—	58
TSR2-80	257	934	190	372	466	277	420	297	259	15	80	—	116
TSR2-100	257	934	190	385	466	254	420	274	281	15	100	—	131
TSR2-125	303	1060	235	445	530	292	450	317	314	19	125	—	223
TSR2-150	329	1190	250	521	570	341	600	366	385	19	150	—	362
TSR2-200	235	1100	305	646	703	439	730	469	464	19	200	550	547

\* Weight excluding motor and silencer

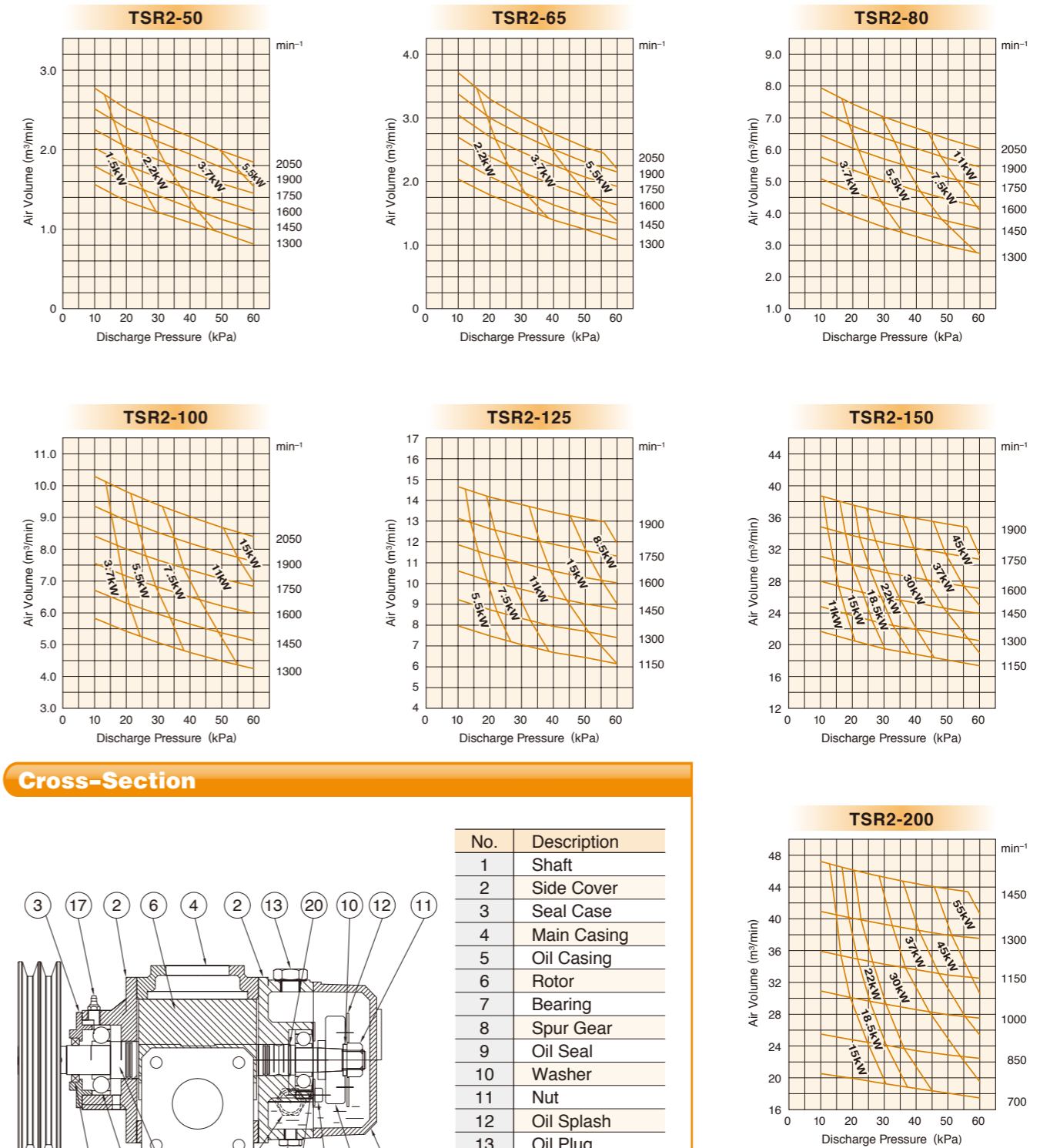


Unit: mm

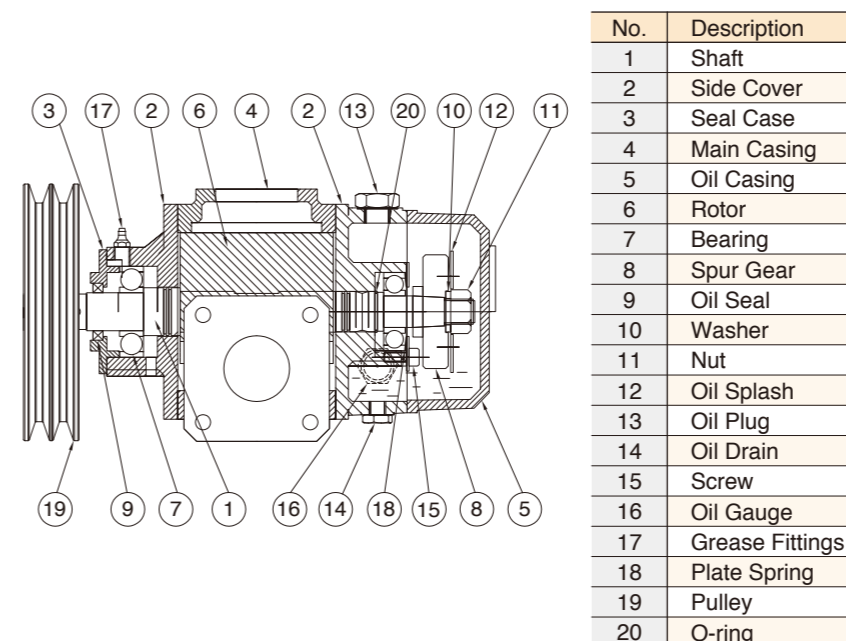
Pipe Bore	A	B	C	D	E	F
φ 50	680	165	660	165	155	110
φ 65	680	165	660	165	175	115
φ 80	780	216	760	216	185	130
φ 100	830	268	760	268	210	135
φ 125	1010	280	1190	350	250	170
φ 150	1150	350	1190	350	280	180
φ 200	1575	500	1735	525	330	210

Tsurumi TSR-series is a V-belt driven, roots type blower designed for compressing air or creating vacuum. The precisely machined, well-balanced 3-lobe rotor reduces the pulsating noise and vibration, and also it ensures stable performance. The TSR-series is applicable to a wide variety of applications.

### Performance Curves



### Cross-Section



## Selection Table

Model (Discharge Bore in mm)	Speed (min <sup>-1</sup> )	Suction air volume at standard condition (Qs in m <sup>3</sup> /min) and required power (La in kW)											
		10kPa (1020mmHzO)		20kPa (2040mmHzO)		30kPa (3060mmHzO)		40kPa (4080mmHzO)		50kPa (5100mmHzO)		60kPa (6120mmHzO)	
		Qs	La	Qs	La	Qs	La	Qs	La	Qs	La	Qs	La
TSR2-50 (50)	1300	1.56	0.76	1.35	1.11	1.21	1.43	1.08	1.76	0.95	2.13	0.81	2.45
	1450	1.79	0.88	1.58	1.25	1.42	1.60	1.27	1.97	1.12	2.35	1.00	2.73
	1600	2.02	0.95	1.80	1.38	1.65	1.79	1.49	2.21	1.35	2.64	1.23	3.06
	1750	2.25	1.03	2.03	1.50	1.87	1.98	1.72	2.44	1.57	2.93	1.45	3.40
	1900	2.51	1.13	2.27	1.66	2.10	2.18	1.94	2.71	1.77	3.25	1.64	3.77
2050	2.77	1.24	2.51	1.81	2.32	2.39	2.15	2.97	1.97	3.56	1.83	4.14	
TSR2-65 (65)	1300	2.04	1.00	1.79	1.42	1.59	1.79	1.39	2.18	1.25	2.53	1.08	2.80
	1450	2.35	1.11	2.08	1.59	1.84	2.01	1.63	2.48	1.46	2.91	1.34	3.42
	1600	2.70	1.24	2.39	1.77	2.15	2.28	1.94	2.86	1.77	3.41	1.63	4.05
	1750	3.04	1.37	2.70	1.95	2.46	2.55	2.25	3.24	2.07	3.91	1.92	4.67
	1900	3.38	1.49	3.00	2.13	2.73	2.79	2.50	3.55	2.30	4.29	2.15	5.15
2050	3.71	1.62	3.29	2.31	3.00	3.02	2.75	3.86	2.54	4.66	—	—	
TSR2-80 (80)	1300	4.32	1.56	3.92	2.40	<del>3.56</del>	<del>3.09</del>	3.27	3.77	2.97	4.37	2.74	5.24
	1450	5.09	1.80	4.68	2.79	4.33	3.65	4.04	4.58	3.75	5.45	3.52	6.32
	1600	5.77	1.96	5.36	3.05	5.02	4.04	4.72	5.11	4.43	6.15	4.20	7.18
	1750	6.46	2.12	6.05	3.31	5.70	4.43	5.40	5.64	5.12	6.85	4.88	8.05
	1900	7.20	2.31	6.74	3.62	6.36	4.84	6.04	6.17	5.72	7.49	5.46	8.82
2050	7.94	2.51	7.44	3.93	7.02	5.25	6.68	6.69	6.33	8.14	6.04	9.60	
TSR2-100 (100)	1300	5.83	1.98	5.42	3.13	5.06	4.20	4.75	5.36	4.48	6.51	4.25	7.67
	1450	6.71	2.21	6.31	3.50	5.96	4.72	5.65	5.93	5.37	7.22	5.13	8.52
	1600	7.56	2.39	7.16	3.83	6.81	5.23	6.50	6.62	6.22	8.01	5.98	9.44
	1750	8.41	2.58	8.01	4.15	7.66	5.74	7.35	7.31	7.07	8.80	6.83	10.37
	1900	9.35	2.81	8.91	4.52	8.53	6.25	8.19	7.98	7.88	9.59	7.62	11.32
2050	10.29	3.04	9.81	4.89	9.39	6.76	9.03	8.66	8.69	10.39	8.40	12.27	
TSR2-125 (125)	1150	7.97	2.58	7.49	4.16	7.06	5.72	6.69	7.29	6.45	8.87	6.15	10.45
	1300	9.22	2.96	8.75	4.78	8.32	6.60	7.95	8.43	7.71	10.29	7.40	12.24
	1450	10.61	3.34	10.10	5.41	9.73	7.48	9.34	9.56	9.02	11.70	8.77	14.04
	1600	11.87	3.68	11.36	5.97	10.99	8.25	10.60	10.55	10.28	12.96	10.03	15.48
	1750	13.13	4.03	12.63	6.52	12.26	9.02	11.88	11.53	11.57	14.23	11.32	16.92
1900	14.66	4.42	14.16	7.13	13.79	9.90	13.42	12.70	13.12	15.74	—	—	
TSR2-150 (150)	1150	21.65	6.05	20.52	10.01	19.48	14.10	18.77	18.32	18.06	22.48	17.34	26.58
	1300	24.79	6.88	23.66	11.38	22.62	16.02	21.91	20.88	21.19	25.62	20.48	30.42
	1450	27.97	7.70	26.86	12.74	25.94	17.94	25.23	23.45	24.52	28.77	23.91	34.26
	1600	31.11	8.50	30.00	14.20	29.08	20.00	28.37	26.16	27.66	32.13	27.05	38.14
	1750	34.81	9.30	33.71	15.65	32.81	22.06	32.11	28.86	31.40	35.49	30.71	42.03
1900	38.71	10.15	37.55	17.09	36.59	24.08	35.86	31.56	35.15	38.89	—	—	
TSR2-200 (200)	700	20.56	5.93	19.96	9.97	19.30	14.22	18.70	18.48	18.10	22.41	17.50	26.23
	850	25.53	7.04	24.80	12.08	24.16	17.25	23.43	22.43	22.90	27.18	22.46	31.82
	1000	30.93	8.39	30.06	14.32	29.30	20.68	28.60	26.82	27.93	32.53	27.53	38.38
	1150	35.93	9.74	35.06	16.38	34.30	23.78	33.60	30.85	32.93	37.41	32.53	44.14
	1300	40.93	10.75	40.06	18.43	39.30	26.60	38.60	34.59	37.93	42.12	37.53	49.92
1450	47.19	11.76	46.33	20.47	45.23	29.43	44.33	38.33	43.76	46.83	—	—	

1.5kW	5.5kW	15kW	30kW	55kW
2.2kW	7.5kW	18.5kW	37kW	
3.7kW	11kW	22kW	45kW	

**Note** The above motors have been selected with minimum 5% margin.  
 The standard condition is defined as the temperature of 20°C, absolute pressure of 101.3kPa, and relative humidity of 65%.

We reserve the right to change the specifications and designs for improvement without prior notice.

# TSURUMI MANUFACTURING CO., LTD.

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