

**Minimal Vibration and Lowest Noise**

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**Roots Blower**

**ISO 9001**



# Professional Manufacturer of Roots Blower



**TH Type  
Roots Blower**



**THD Type  
Direct Drive Roots Blower**



**THV Type  
Roots Vacuum Blower**



**TV Type  
Vertical Roots Blower**



**TSW Type  
Submersible Roots Blower**



**THL Type  
Two Section Roots Blower**



**THVE Type (European Style)  
Roots Vacuum Blower**



**TS Type  
Ring Blower**



**THW Type  
Water-Cooled Roots Blower**



**THS Type  
Partial Water-Cooled Roots Blower**



**TMD Type  
Magnetic Drive Pump**



**Diffusers  
Tubes**

※ There are specific catalogs for each types

# Trundean Overview

## Introduction / Operating Principles

Trundean Machinery Industrial Co., Ltd. was founded in 1982. We insist on seeking high-quality talented acquisition of overseas new concepts, to set up a business reputation of excellence and perfection. Trundean Machinery Industrial Co., Ltd. has intensified our spirit and attitude in our quest for perpetual betterment, to seek sustained research and improvement, to persist in aggressively adhering to the policy of "customer first, quality first, service first" to ensure customers with quality after-sale services.

In the past years, with the upgrading of domestic industrial standards, and in view of the imperativeness to enhance market competitiveness, we have passed ISO 9001 in 2002, and passed CE certification in 2005. In this competitive market, we have been seeking product stability, standardized production processes, and continued to renew installation of production equipment and inspection equipment, so that our products are not inferior to those in advanced countries. And we have actively invested in research and development and made improvement on all our products, including Roots Blower, Vertical Blower, Submersible Blower, and Magnetic Drive Pump.

Besides developing the Taiwanese market, Trundean Machinery Industrial Co., Ltd. has actively developed overseas markets, and produced the "TRUNDEAN" brand for sales in overseas markets. Export markets have been extended to more than 60 countries, and our products have been highly recommended by local users. Based on firm and stable quality, Trundean Machinery Industrial Co., Ltd. enthusiastically develops new products and provides sincere and prompt service, providing better service to our customers and establishing excellent cornerstones for our sustainable business operation.

### Patent is to approve our R & D achievement and the glory of leading the industry.



Patent for Roots Blower Series



Patent for THW Type



Patent for TV Type



Patent for TMD Type



Patent for Roots Blower Series



Patent for THW Type



Patent for TV Type



Patent for TMD Type

### Certification is to decide our position in the market and the bridge to the world.



ISO 9001:2000



ISO 9001:2000



CE for Roots Blower Series



CE for TMD Series



ISO 14001:2004

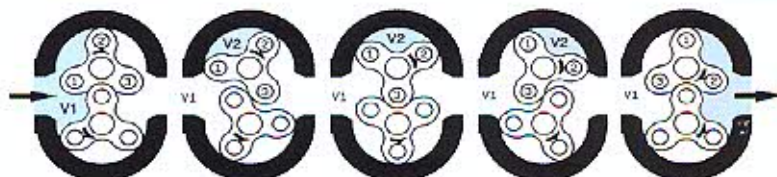


ISO 9001:2008

## Features of TRUNDEAN Roots Blower :

1. The air compartment and the side cover of our blower has a flange and groove rim, which can not only strengthen the blower's operational functions but also prevent eccentric phenomenal resulting from the fastening of the stud, which may shorten the life of the blower.
2. To reduce man-made errors, enhance the precision of the leave wheel, and to higher the blower efficiency, our rotor uses the most advanced one time work process Four-Shaft method.
3. Appropriate clearance between the rotors and the rotors with the casing ensure no direct operational contact, 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.
4. Computerized CNC machines are used to produce components and parts of high quality and precision also saves the user both time and labor during maintenance and replacement.
5. Low Noise & Minimal Vibration: Noise and vibration reduction are the main emphasis in developing the new series of roots blower. The TRUNDEAN Blower rotor concept was adopted based on its flow characteristics which are very stable and even compared to the 2 lobes type, also coupled with 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.

## Principle of Blower Operation :



There are two rotors in the compartment of the blower body, when the rotors operate in opposite direction, they suck air in to balance the pressure created due to the volume V1 change on the inlet side. And the air of the volume V2 will be sent out thru the discharge side and the high pressure will be created thru the discharge.

There is no need to supply any lubrication between two rotors because of the existing clearance between them which gives no worry about the possibility of friction. The blower runs well at high speed and produces clean air, it is also applied to vacuum purpose.

## Usage of Performance Table :

The performance table shows relationships among blower type, bore, rpm., discharge pressure, theoretical air capacity and shaft power.

1. The air volume shown in the performance table represents a suction volume under standard suction condition (temp. 20 °C, absolute pressure 1.0332 kg/cm<sup>2</sup>, relative humidity 65%).
2. In case an air flow under the normal condition (0 °C 1.0332 1.0332 kg/cm<sup>2</sup> ABS) is equivalent to a suction pressure, it can be converted to an air flow under the standard condition by means of following formula:

$$Q_s = Q_n \times \frac{\gamma_n}{\gamma_s} \quad \gamma = 0.465 \frac{P - 0.378 \phi \times P_s}{273 + t} \quad \phi : \text{Humidity}(\%) \quad P : \text{Pressure}(\text{mmHg})$$

$Q_n$  : Air flow under normal condition Nm<sup>3</sup>/min       $Q_s$  : Air flow under standard condition (indicated in the performance table, m<sup>3</sup>/min)

$\gamma$  : Air ratio weight(kg/m<sup>3</sup>)       $P_s$  : Water vapor saturation pressure of the temperature(mmHg)       $T$  : Absolute Temperature(273+t)°C

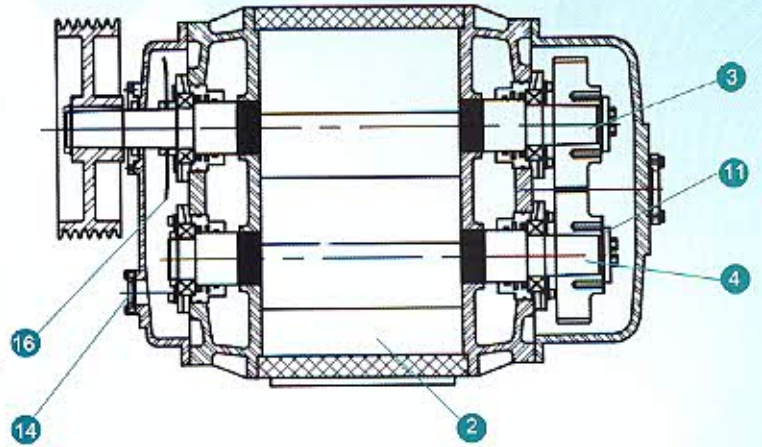
3. An air flow under discharge condition can be converted to an air flow under standard condition :

$$Q_s = Q_d \times \frac{1.0332 + P_d}{1.0332} \times \frac{273 + T_s}{273 + T_d} \quad Q_d : \text{Air flow under discharge condition, m}^3/\text{min} \quad T_s : \text{Suction temperature}$$

$$P_d : \text{Discharge pressure, kgf/m}^2 \quad T_d : \text{Discharge temperature}$$

4. Seek blower type, bore, rpm., and shaft power of the performance table based on the air flow and required discharge pressure obtained as a result of the aforementioned results.
5. The selective range is duplicated depending on blower types. However, as a selective criterion, choose blowers of the smaller type from a economical viewpoint and those of the larger type from a viewpoint of noise level.

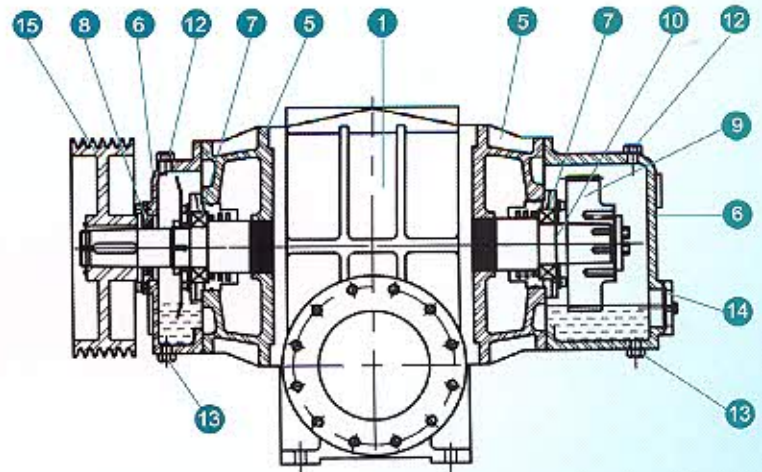
# TH Type Structural Drawing



## TH Type (Pressure Conveyance)

Pressure: 0~6000 mmAq

Power: 1~300 HP



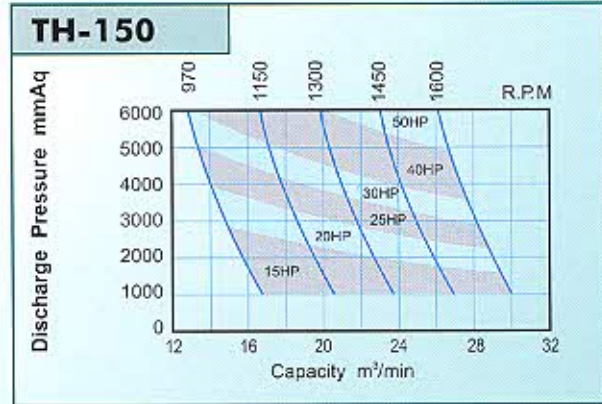
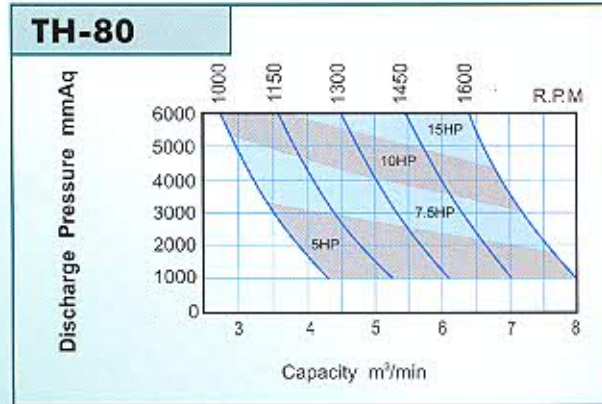
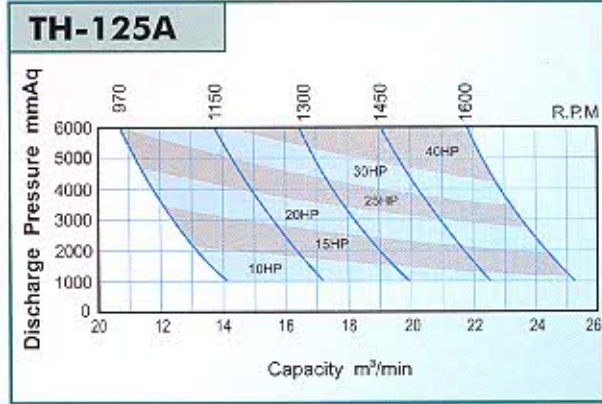
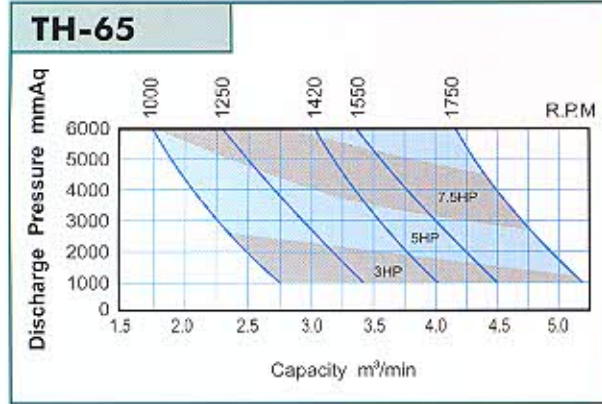
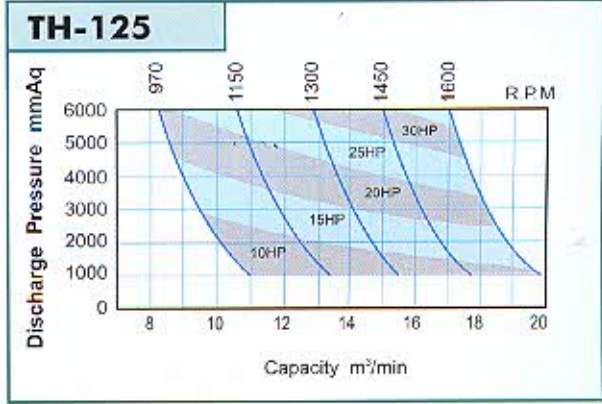
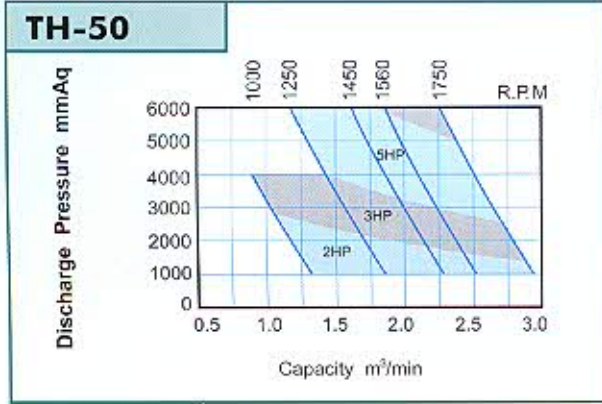
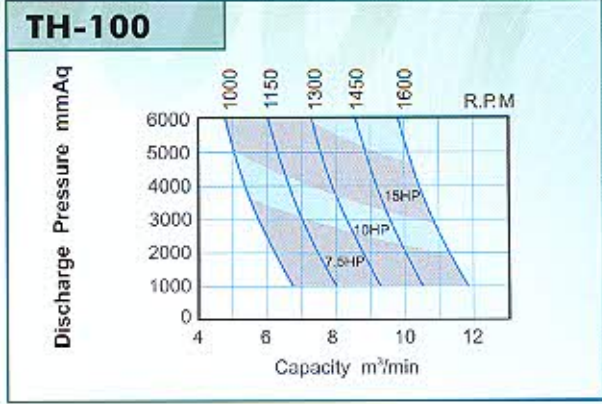
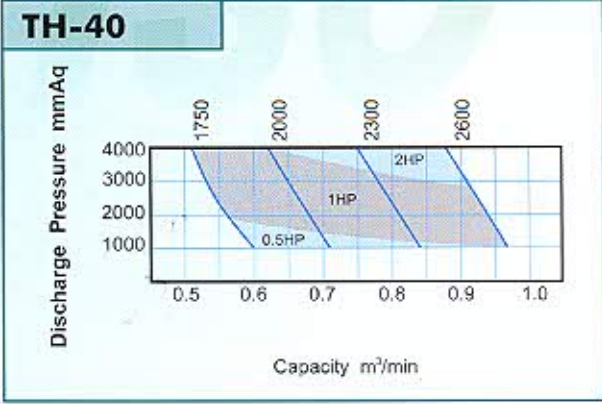
NO.	Name	Material	Q'ty	NO.	Name	Material	NO.
1	Main body	FC25	1	9	Gear	SNM220	2
2	Rotor	FC25	2	10	"S"Ring	SK7	2
3	Drive Shaft	S45C	1	11	Washer	S45C	2
4	Driven Shaft	S45C	1	12	Lubrication Plug	PP	2
5	Bearing Base	FC25	2	13	Drain Plug	FCMB28	2
6	Oil Box	FC25	2	14	Oil Gauge	BRASS	2
7	Bearing	SUJ2	4	15	Pulley	FC20	1
8	Oil Seal	NBR	1	16	Oil Splasher	SS41	1

※ Could be manufactured by special material

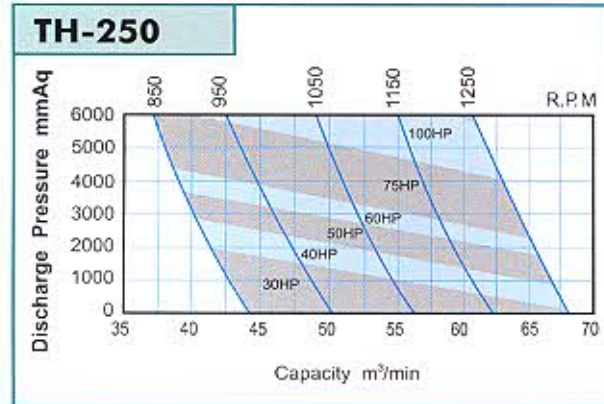
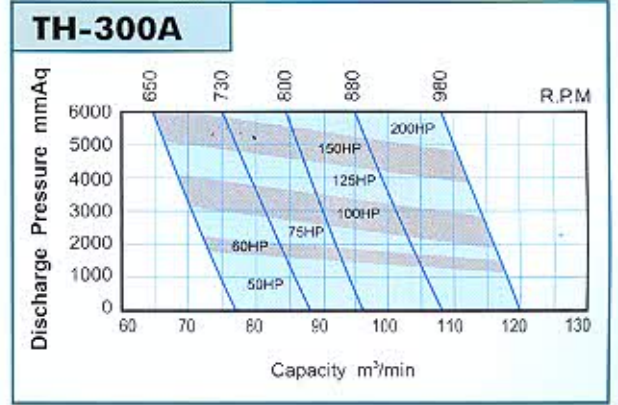
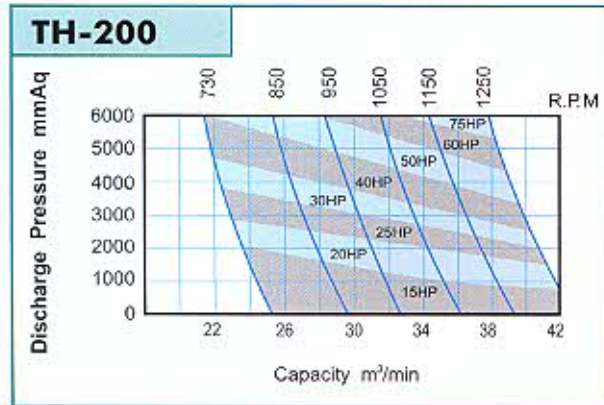
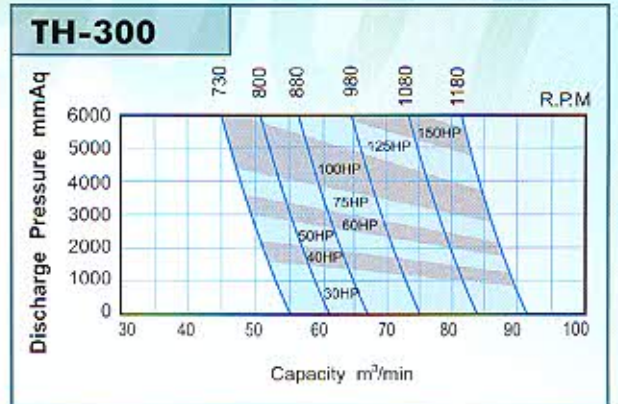
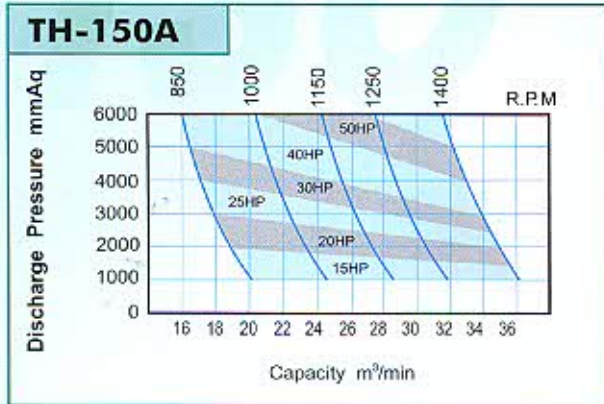
## TH Type Performance Table (Pressure Conveyance)

Models	Speed R.P.M	1000 mmAq		2000 mmAq		3000 mmAq		4000 mmAq		5000 mmAq		6000 mmAq	
		m <sup>3</sup> /min	kw	m <sup>3</sup> /min	kw	m <sup>3</sup> /min	kw	m <sup>3</sup> /min	kw	m <sup>3</sup> /min	kw	m <sup>3</sup> /min	kw
TH-40	1750	0.60	0.26	0.56	0.39	0.54	0.53	0.51	0.66				
	2000	0.71	0.30	0.68	0.45	0.65	0.60	0.62	0.75				
	2300	0.84	0.34	0.81	0.51	0.78	0.69	0.75	0.86				
	2600	0.97	0.38	0.84	0.57	0.91	0.78	0.88	0.97				
TH-50	1000	1.33	0.72	1.18	1.07	1.04	1.45	0.90	1.81	0.77	2.15	0.64	2.44
	1250	1.86	0.91	1.71	1.35	1.57	1.82	1.43	2.27	1.31	2.69	1.18	3.06
	1450	2.29	1.05	2.14	1.56	2.00	2.10	1.86	2.62	1.74	3.11	1.61	3.53
	1560	2.53	1.13	2.38	1.68	2.24	2.26	2.10	2.82	1.97	3.35	1.84	3.80
	1750	2.94	1.27	2.78	1.88	2.65	2.54	2.51	3.17	2.38	3.75	2.25	4.27
TH-65	1000	2.76	1.2	2.48	1.9	2.27	2.5	2.06	3.1	1.85	3.7	1.75	4.3
	1250	3.41	1.5	3.14	2.2	2.93	2.9	2.72	3.6	2.51	4.3	2.31	5.0
	1420	4.03	1.7	3.76	2.5	3.55	3.3	3.34	4.2	3.23	5.0	3.03	5.8
	1550	4.48	1.8	4.23	2.7	4.00	3.6	3.79	4.5	3.58	5.4	3.37	6.3
TH-80	1000	4.38	1.5	3.94	2.4	3.57	2.8	3.25	4.3	2.97	5.2	2.72	6.1
	1150	5.27	1.8	4.85	2.9	4.48	3.9	4.16	5.0	3.87	6.0	3.61	7.1
	1300	6.17	2.0	5.74	3.2	5.37	4.4	5.05	5.6	4.76	6.8	4.51	8.0
	1450	7.07	2.2	6.65	3.6	6.28	5.0	5.96	6.3	5.66	7.6	5.41	9.0
	1600	7.96	2.5	7.54	4.0	7.17	5.5	6.85	6.9	6.55	8.4	6.30	9.9
TH-100	1000	6.72	2.3	6.22	3.5	5.72	4.8	5.38	6.1	5.04	7.4	4.80	8.7
	1150	8.00	2.8	7.42	4.2	7.02	5.5	6.58	7.2	6.34	8.5	6.14	10.0
	1300	9.26	3.0	8.71	4.6	8.26	6.3	7.89	8.0	7.57	9.7	7.31	11.4
	1450	10.50	3.4	9.96	5.2	9.51	7.0	9.14	9.0	8.82	10.8	8.57	12.7
TH-125	1600	11.8	3.7	11.2	5.7	10.8	7.8	10.4	9.9	10.1	12.0	9.82	14.1
	970	11.0	3.4	10.2	5.7	9.5	7.9	8.9	10.2	8.5	12.5	8.0	14.8
	1150	13.5	4.0	12.7	6.7	12.1	9.4	11.5	12.1	11.0	14.8	10.6	17.5
	1300	15.6	4.5	14.8	7.6	14.2	10.6	13.8	13.6	13.1	16.7	12.7	19.8
	1450	17.7	5.0	16.9	8.5	16.2	11.8	15.6	15.2	15.2	18.7	14.7	22.1
TH-125A	1600	19.8	5.5	19.0	9.3	18.3	13.0	17.7	16.8	17.3	20.6	16.8	24.4
	970	14.1	4.2	13.1	7.1	12.4	9.9	11.7	13.0	11.2	15.7	10.7	18.5
	1150	17.2	5.0	16.3	8.4	15.6	11.8	14.8	15.4	14.4	18.6	13.8	22.0
	1300	19.9	5.7	18.9	9.5	18.2	13.3	17.5	17.4	17.0	21.0	16.5	24.8
TH-150	1450	22.5	6.3	21.6	10.6	20.9	14.8	20.2	19.4	19.6	23.4	19.1	27.7
	1600	25.2	7.0	24.2	11.7	23.5	16.4	22.8	21.4	22.3	25.9	21.8	30.6
	970	16.8	4.9	15.7	8.4	14.9	11.8	14.2	15.2	13.5	18.6	12.9	22.0
	1150	20.6	5.8	19.5	9.9	18.6	14.0	17.9	18.0	17.3	22.1	16.7	26.1
	1300	23.7	6.6	22.6	11.2	21.8	15.8	21.1	20.4	20.4	25.0	19.9	29.5
TH-150A	1450	26.9	7.4	25.8	12.5	24.9	17.6	24.2	22.7	23.6	27.9	23.0	33.0
	1600	30.0	8.1	28.9	13.8	28.1	19.4	27.4	25.1	26.7	30.7	26.1	36.4
	850	20.7	6.1	19.5	10.2	18.3	14.3	17.5	18.4	16.7	22.6	18.1	26.7
	1000	25.0	7.1	23.7	12.0	22.6	16.9	21.7	21.7	20.9	26.6	20.3	31.4
	1150	29.3	8.2	27.9	13.8	26.9	17.7	25.9	22.8	25.2	30.6	24.5	36.1
TH-200	1250	32.2	8.9	30.8	15.0	29.7	21.1	28.8	27.2	28.0	33.3	27.3	39.3
	1400	36.4	10.0	35.0	16.9	34.0	23.6	33.0	30.4	32.3	37.3	31.6	44.0
	730	24.6	6.7	23.8	11.2	23.2	15.9	22.7	20.5	22.1	25.1	21.7	29.7
	850	28.6	7.8	27.7	13.1	27.0	18.5	26.4	24.0	25.6	29.2	25.3	34.6
	950	32.0	8.7	31.0	14.6	30.2	20.7	29.5	26.7	28.8	32.6	28.3	38.7
TH-250	1050	35.3	9.6	34.3	16.2	33.3	22.8	32.6	29.5	31.8	36.1	31.3	42.7
	1150	38.7	10.5	37.5	17.7	36.5	25.0	35.7	32.3	34.9	39.5	34.2	46.8
	1250	42.1	11.4	40.8	19.3	44.7	27.2	38.8	35.1	38.0	43.0	37.2	50.9
	730	38.6	9.7	37.5	16.6	36.6	23.7	35.9	30.8	35.2	37.9	34.5	44.8
	850	44.9	11.2	43.7	19.4	42.6	27.6	41.8	35.8	40.9	44.1	40.2	52.2
	950	50.1	12.6	48.8	21.6	47.7	30.8	46.7	40.1	45.8	49.3	44.9	58.3
TH-300	1050	55.4	13.9	54.0	23.9	52.7	34.1	51.6	44.3	50.6	54.5	49.7	64.5
	1150	60.7	15.2	59.1	26.2	57.7	37.3	56.5	48.5	55.4	59.7	54.4	70.6
	1250	65.9	16.6	64.3	28.5	62.8	40.6	61.4	52.8	60.3	64.9	59.2	76.8
	730	52.8	15.7	50.8	27.4	49.2	39.1	47.8	50.8	46.5	62.5	45.4	74.8
	800	58.4	17.1	56.4	29.9	54.8	42.6	53.4	55.4	52.0	68.1	50.9	81.6
	880	64.8	18.8	62.8	32.8	61.1	46.7	59.7	60.7	58.3	74.6	57.2	89.4
TH-300A	980	72.9	20.7	70.9	36.2	69.2	51.4	67.8	66.9	66.4	82.3	65.2	98.6
	1080	81.1	22.9	79.1	39.9	77.4	56.7	76.0	73.8	74.6	90.8	73.4	108.7
	1180	89.3	25.0	87.3	43.6	85.6	62.0	84.1	80.6	82.7	99.2	81.6	118.7
	650	74.8	21.9	72.2	39.1	69.9	55.2	68.1	72.5	66.3	89.7	64.8	97.8
	730	85.2	24.2	82.6	43.7	80.4	62.1	78.6	80.5	76.9	100.0	75.3	118.5
TH-300A	800	94.4	26.5	91.8	47.2	89.7	67.9	87.8	88.6	86.1	109.3	84.5	130.0
	880	105.3	29.9	102.6	51.8	100.3	74.8	98.4	97.8	96.6	120.8	95.1	143.8
	980	117.8	33.4	115.5	58.7	113.4	82.8	109.6	109.3	108.9	134.6	108.1	159.9

# TH Type Performance Curve (Pressure Conveyance)

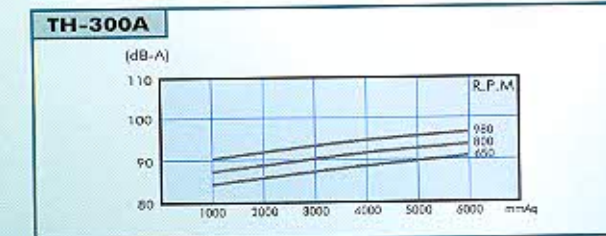
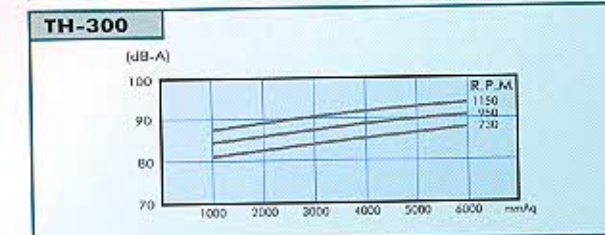
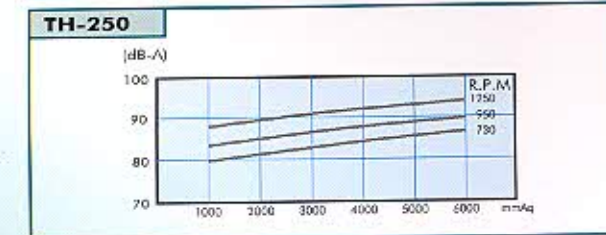
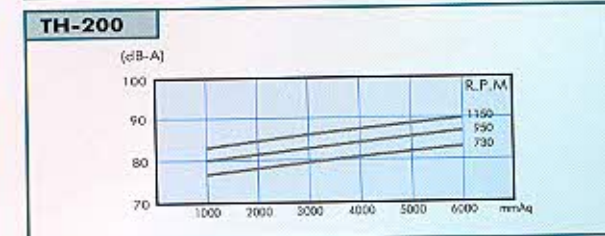
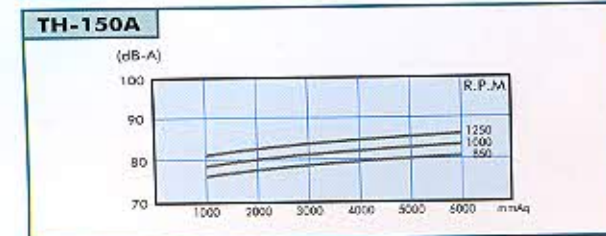
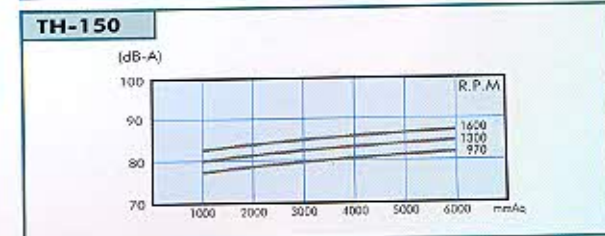
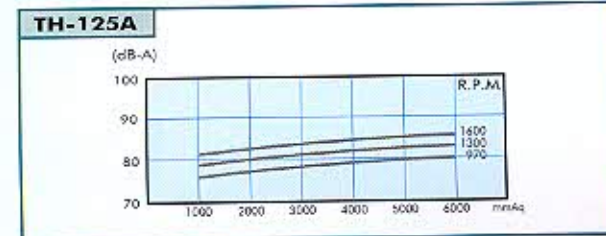
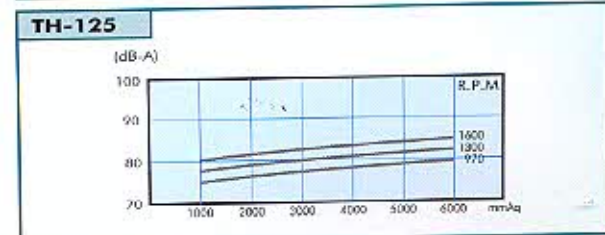
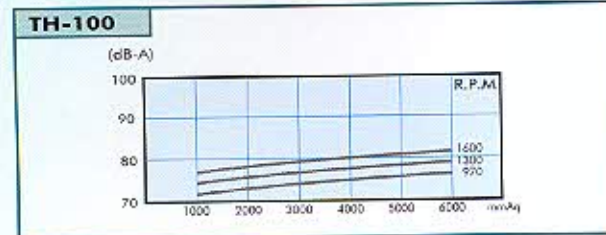
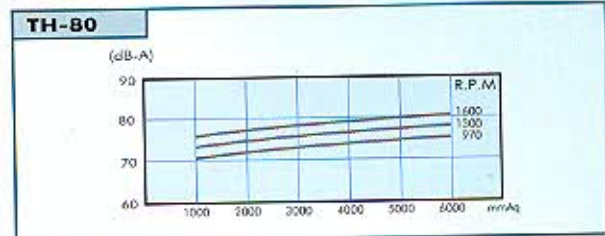
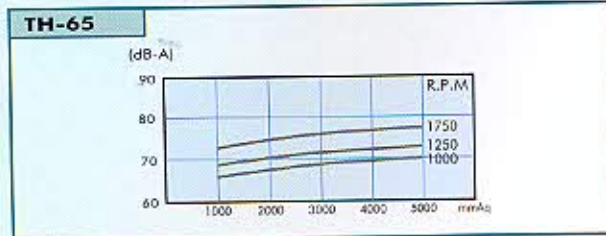
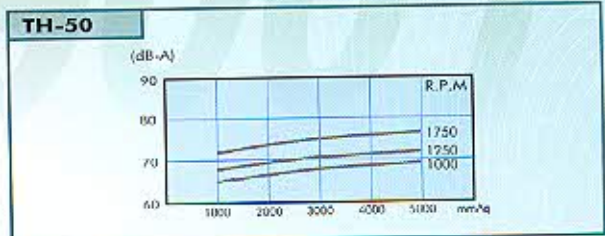
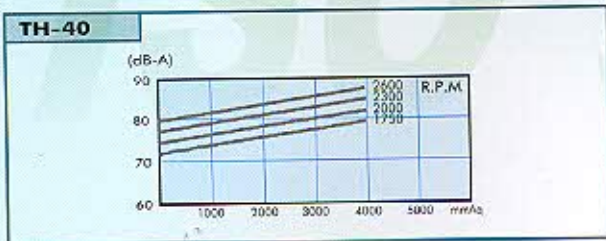


# TH Type Performance Curve (Pressure Conveyance)





# TH Type Noise Level Curve



- Noise Level measured at a distance of 1 meter for the blower fitted with a standard silencer.
- Noise level may be different according to the extent pipe length and environmental conditions.

All of TRUNDEAN's products have been improved which reduce more noise level.