

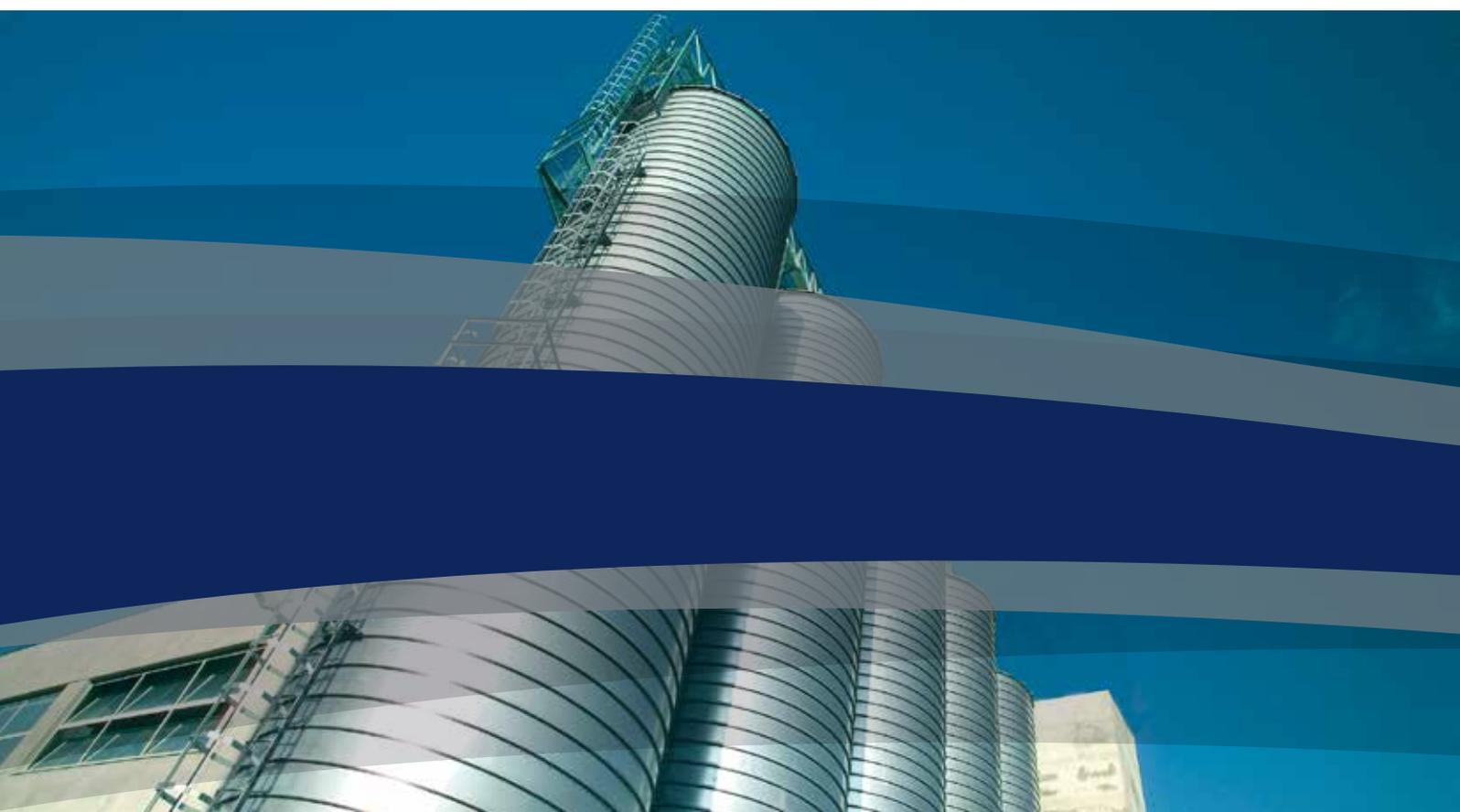
ROBUSCHI®

by Gardner Denver



Vacuum Blowers





Experience and expertise

Robuschi has developed pressure and vacuum solutions since 1941 with manufacturing facilities in Parma (Italy).

A world leader in blowers and pumps for various industries, we are committed to playing a vital role in our communities by engineering efficient products that save energy and preserve the environment. Our equipment, systems and services are dedicated to helping customers' optimise the performance of their processes.

Using modern machining systems and state-of-the-art production processes, our product range is constantly evolving.

Our vacuum range has been developed in line with our customers' exacting requirements and it covers a wide array of technologies, including lobe, screw, and liquid ring pumps to achieve up to 0,001 mbar(a) when operating as a booster.

The simplicity, robustness, efficiency, and cost-effectiveness make our oil-free RB-DV range the smart choice for your application.

Our ultimate goal is always to increase overall efficiency in regard to process stability, availability and economic efficiency. An optimum configuration is made possible only by a thorough understanding of all process variables.

We enhance and add value to our customers, taking on challenges, innovating and working together.

*Robuschi - the perfect partner
for your evolving needs.*

Applications

To satisfy our customers' requirements and technical application specifications, Robuschi offers a wide range of rotary lobe blowers for vacuum operation in various configurations for stationary and mobile applications.

Stationary Applications

Our team of experienced engineers is focused on developing products that offer maximum benefit to each customer. Our wide range of vacuum blowers covers a huge spectrum of industrial applications, ensuring the best choice for your needs.

The key component is a central vacuum system that is able to maximise the production efficiency for various industries. In addition, a capable central vacuum system's integration in production lines allows for minimal maintenance and down times on any production line.

• **Vacuum conveying:** The process of moving bulk dry materials, such as powders (sugar, flour, plastic pellets), within a factory using suction. The material is transferred in a network of tubing from the pick-up point or source to the point where processing takes place. Most vacuum conveying systems transfer the product based on a timed interval to the vacuum receiver. At the end of the timed sequence, the discharge valve can open and the material conveyed can discharge in to the processing area.

• **Plastic granules vacuum conveying**

Thanks to their high performance and flexibility it was possible to replace 24 side channel blowers with 3 Robox vacuum blower packages ensuring an energy savings of around 50% compared to the previously used equipment.



Benefits at a glance

- Heavy-duty and extremely reliable
- Highly efficient
- Long-life solution

- **Food packaging, PET production**

- **Pick & place**

- **Removal of impurities**

- **Pulp drying**

- **Paper converting:** Suction pickup and transfer rolls use a vacuum to transfer the paper from the forming section to the press section, and guide the sheet from one felt to another in the press section. Robox vacuum blower packages are used to keep the sheet of paper adherent to the rollers so it can be transformed. The Robuschi solution applies the vacuum via dry vacuum units that guarantee energy savings of more than 15% compared to traditional liquid ring technology.



Benefits at a glance

- Robust and reliable
- Minimum maintenance
- Environmental friendly without any service liquid
- Highly efficient
- Flexible solution to better combine the operating variables of the paper transformation process



Lifting system

Equipment designed to lift bags from pallets or other surfaces and put them on another surface. Thanks to vacuum suction, bags can be handled in a fast, effective way.

- **Industrial cleaning**
- **Vacuum in glass forming**
- **Coating**
- **Metallisation**
- **Methane gas extraction**

Vacuum blowers are used to remove methane gas from underground coal mine basins.



Benefits at a glance

- Robust and reliable
- Minimum maintenance
- High vacuum thanks to the operation with a closed ("blanked") suction
- Maximum lifespan



Mobile application

It is possible to use a vacuum to transport different types of material, such as food, waste or liquids for use in other processes. Thanks to a Robuschi patented atmospheric air injection device, the Robuschi RB-DV vacuum series can reach vacuum levels of up to 93% on a dead head - 28" Hg without the need to inject water to prevent overheating.

- **Soil gas extraction**
- **Suction vehicles for wastewater:**
Vacuum pumps provide suction pressure for removing and flushing out contaminants from wastewater and cleaning sewer networks
- **Truck-hydroexcavation**
- **Sand oil fields recovery**



Benefits at a glance

- Gases and vapours can be handled
- Patented and unique air inlet design
- Cool operating temperatures
- Low maintenance thanks to its robustness and heavy-duty operation
- Environmentally friendly without any oil contamination or water use

Durability. Performance. Maximum Vacuum.

RB-DV Family

RB-DV - the heart of the Vacuum Blower package

The RB-DV series consists of 3 lobe rotary blowers used as exhausters which makes it possible to reach a high compression ratio. This is accomplished by a patented atmospheric air injection device that reduces overheating of the gas and the energy absorbed by the blower.

The main characteristics of these blowers are as follows:

- **Maximum vacuum 93% - 28" Hg on a dead head**
- **Gases and vapours can be handled**
- **No sliding parts, therefore no wear**
- **Safe operation and minimum maintenance**
- **No oil mist**
- **Atex 2 version available**



Benefits at a glance

1. Splash-lubricated helical tooth synchronized gears for optimum rotor timing
2. High quality lobe profile rotors controlled by three-dimensional instruments for top volumetric efficiency
3. Oversized shafts and robust design for reliable operation
4. Long life steel cage bearings
5. Patex mirrors for clear oil inspection
6. Patent air injection nozzle ensures cool operation under all vacuum conditions



ROBOX

LOBE DV

The Vacuum Blower Package

The Robox Lobe DV is an integrated package designed to operate in a vacuum. It is able to reach up to 100 mbar(a) and deliver flow up to 10,500 m³/h. The Robox Lobe DV is based on the RB-DV air injection vacuum blower, operated by an electric motor through a belt drive.

It includes all accessories and a noise enclosure. To user's worldwide, the Robox Lobe package means reliability, extreme sturdiness and compactness to better meet various plant requirements.

New performance cooling fan

- Better air circulation inside the noise enclosure
- Extended operating range capacity
- Greater reliability
- Easy connection by means of a terminal board
- Better efficiency due to inner enclosure's lower temperature

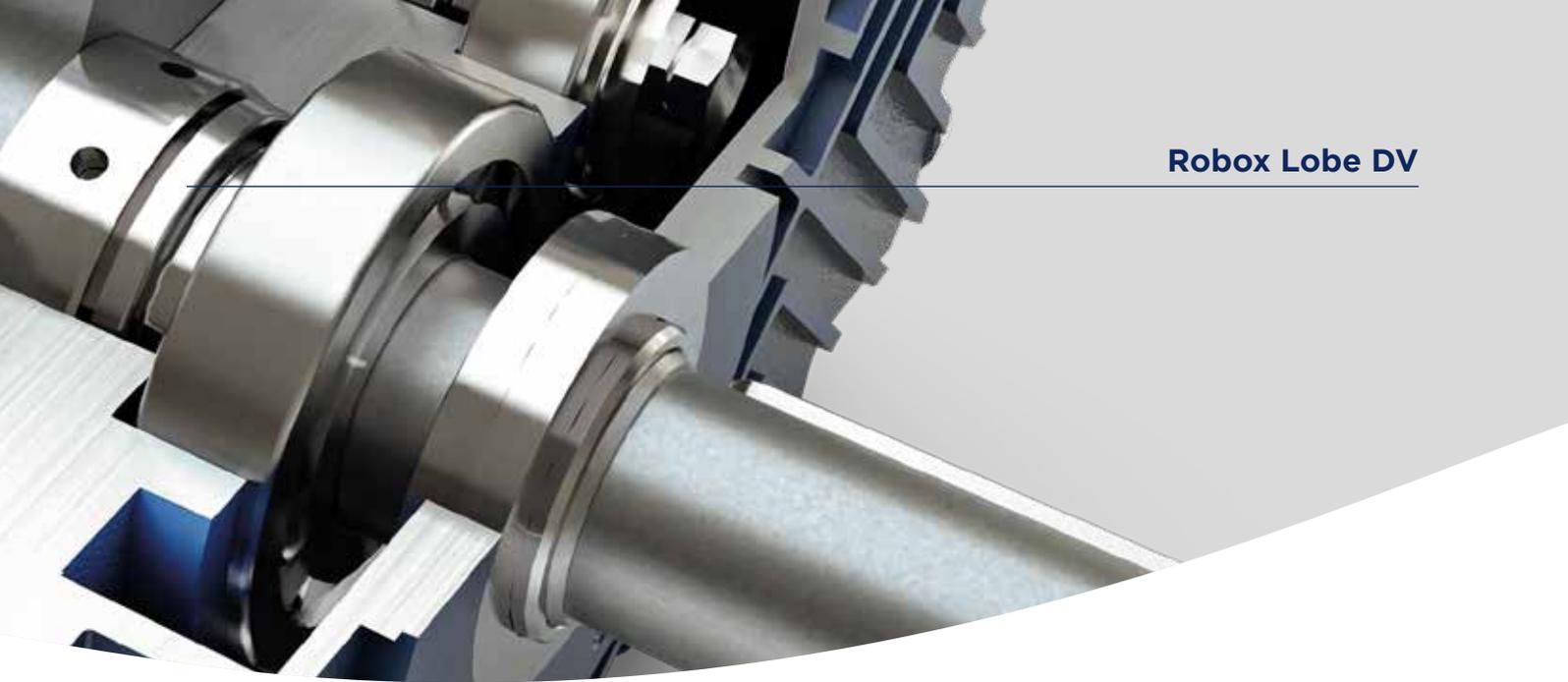
Discharge silencer optimization

- New silencer design for increased energy efficiency

Enhanced noise enclosure

- Restyled and painted noise enclosure
- Robust noise enclosure for heavy-duty application (HT version)





Benefits

Smart and compact design

Robox packages can be placed side by side to significantly reduce their footprint, the dimensions of the blower room, and therefore decrease system costs.

Energy savings

Robox Lobe DV are equipped with IE3 drive motors and with premium efficiency motor (IE4) upon request. Star/Delta starters are also available.

- Inverter duty motors featuring a variable frequency driver (VFD) for wide turndown capability
- More efficient belts with additional noise reduction

Easy maintenance

The Robox Lobe DV allows maintenance operations to be carried out in an even easier and effortless manner:

- Simplified access: all maintenance operations are performed from the front with the removal of the front panel or panels and/or the opening of the upper panel with gas springs
- Effortless adjustment and replacement of the soundproof filter SPF by simply opening the noise enclosure's upper panel (or removal of the front panel)
- Easy oil change: an oil change can be performed directly from the front panel, which is easily accessible





TRB-DV

Compact Solution for Mobile Application

TRB- DVs come in completely assembled compact package sets with a noise enclosure developed for truck vacuum handling wet and /or dry waste.

It is possible to install the TRB-DV with up to a 5° degree tilt. The power take off connection can be made by either hydraulic motor or V- belt transmission.

The following options are available: left side clock wise opening door; left side counter clock wise opening door; right side clock wise opening door; right side counter clock wise opening door



Oil refilling

Oil draining

Oil level

Benefits at a glance

- No oil mist from the blower discharged into the environment
- No water cooling required
- Compact design takes up less space, and allows for flexible positioning on trucks and easy installation
- Simple maintenance thanks to easy access to lubricants for easy draining and refilling, and a front mounted glass providing a clear view of the oil level
- Stainless steel noise enclosure available upon request

Options and accessories

The wide range of options and accessories available for the Robox Lobe DV and TRB-DV packages means units can be configured to meet the customer's exacting requirements.

Robox Lobe DV package - "plug & play" version

It is possible to select from various Robox blower package configurations, according to customers' requirements.

The unit can also be equipped with a main power electric cabinet that includes:

- Star/delta starter
- Soft starter
- Frequency converter

Valves

RVV: Direct relief valve for vacuum operation.

WR: Check valve to prevent any machine damage due to an unexpected plant interruption.



Silencers

SDL - SCE

To further reduce the noise levels generated, absorption silencers are fitted in particular sections of the system's pipework that are connected to the Robox unit.



Vacuum silencer kit

A specific kit for Robox packages in vacuum operation, consisting of SDL absorption silencers and SPS exhaust silencers. This reduces the sound level generated by the exhaust outlet by approximately 25 dB(A) within the frequency field ranging from 200 Hz to 20 kHz.



Manifolds

Third inlet manifolds grant the cooling air conveyance with the possibility to select two different versions, depending on equipment configuration: CC version, short manifold and CL version, long manifold.



Technical Data

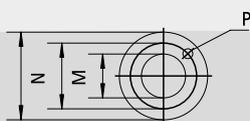
Performances

RB-DV - TRB-DV

Blowers	size mm	RPM	VACUUM														
			30%		50%		60%		70%		80%		85%		90%		
			m³/h	kW	m³/h	kW	m³/h	kW	m³/h	kW	m³/h	kW	m³/h	kW	m³/h	kW	
45	2000	236	3.6	182	5.5	143	6.4	82	7.4								
	2500	320	4.5	266	6.9	227	8.0	166	9.2	41	10.4						
	3000	404	5.4	350	8.2	311	9.6	250	11.0	125	12.4						
	3500	488	6.3	434	9.6	395	11.2	334	12.9	209	14.5	71	15.3				
	4000	572	7.0	518	11.0	479	12.8	418	14.7	293	16.6	155	17.5				
	4500	656	8.1	602	12.3	563	14.4	502	16.5	377	18.6	239	19.7				
	5000	740	9.1	686	13.7	647	16.1	586	18.4	461	20.7	323	21.9	8	23.1		
65	2000	521	6.0	453	9.6	404	11.4	327	13.2	168	15.0						
	2500	683	7.8	615	12.3	566	14.6	489	16.8	330	19.1	155	20.2				
	3000	845	9.8	777	15.2	728	17.9	651	20.6	492	23.3	317	24.7				
	3500	1007	12.0	939	18.3	890	21.5	813	24.6	654	27.8	479	29.3	81	30.9		
	4000	1169	14.5	1101	21.7	1052	25.3	975	28.9	816	32.5	641	34.3	243	36.1		
	4500	1331	17.2	1263	25.3	1214	29.4	1137	33.4	978	37.5	803	39.5	405	41.5		
	4800	1429	19.1	1360	27.7	1311	32.0	1234	36.3	1076	40.7	900	42.8	502	45.0		
85	1500	814	9.9	671	15.9	570	18.9	413	21.9	94	24.9						
	2000	1174	13.7	1031	21.7	930	25.7	773	29.7	454	33.7	103	35.7				
	2500	1534	18.0	1391	28.0	1290	33.0	1133	38.0	814	43.0	463	46				
	3000	1894	22.8	1751	34.8	1650	40.8	1493	46.8	1174	52.8	823	55.8	27	58.8		
	3500	2263	27.4	2111	42.3	2010	49.3	1853	56.3	1534	63.3	1183	66.8	387	70.3		
	3800	2470	32.0	2327	47.2	2226	54.8	2069	62.4	1750	70.0	1399	73.8	603	77.6		
105	1500	1596	18.2	1402	29.0	1262	34.5	1043	39.9	592	45.3	94	48.1				
	1750	1922	21.7	1728	34.4	1588	40.7	1396	47.1	918	53.4	420	56.6				
	2000	2248	25.5	2054	40.0	1914	47.2	1695	54.4	1244	61.7	746	65.3				
	2250	2574	29.5	2380	45.8	2240	53.9	2021	62.1	1570	70.2	1072	74.3				
	2500	2900	33.8	2706	51.9	2566	61.0	2346	70.0	1896	79.1	1398	83.6	266	88.1		
	2750	3226	38.5	3032	57.4	2892	68.3	2676	78.3	2222	88.3	1724	93.2	592	98.2		
	3000	3552	43.5	3358	65.2	3218	76.1	2998	86.9	2548	97.8	2050	103.2	918	108.6		
125	1070	2152	24.4	1882	39.1	1689	46.5	1390	53.9	784	61.3	117	65.0				
	1200	2475	27.7	2205	44.3	2012	52.5	1713	60.8	1107	69.1	440	73.2				
	1340	2823	31.4	2552	49.9	2360	59.2	2061	68.4	1455	77.6	787	82.3				
	1500	3220	35.9	2950	56.6	2757	66.9	2459	77.3	1852	87.6	1185	92.8				
	1680	3667	41.2	3397	64.4	3205	75.9	2906	87.5	2299	99.1	1632	104.9	121	110.7		
	1875	4152	47.3	3881	73.2	3689	86.1	3390	99.0	2784	112.0	2116	118.4	606	124.9		
	2100	4711	54.9	4440	83.9	4248	98.4	3949	112.9	3343	127.3	2675	134.6	1164	141.8		
	2200	4959	58.5	4689	88.8	4496	104.0	4197	119.2	3591	134.4	2924	142.0	1413	149.6		
	2400	5456	66.1	5185	99.2	4993	115.8	4694	132.3	4088	148.9	3420	157.2	1910	165.4		
145	1070	4675	51.3	4186	82.4	3848	98.0	3339	113.6	2342	129.1	1263	136.9				
	1200	5356	58.3	4867	93.2	4529	110.7	4020	128.1	3023	145.6	1944	154.3				
	1340	6089	66.1	5600	105.1	5262	124.6	4754	144.1	3756	163.6	2677	173.3	258	183.1		
	1500	6927	75.4	6438	119.0	6100	140.9	5592	162.7	4594	184.5	3515	195.4	1096	206.3		
	1680	7870	86.5	7381	135.4	7043	159.8	6535	184.2	5537	208.7	4458	220.9	2039	233.1		
	1800	8498	94.2	8009	146.6	7672	172.8	7163	199.0	6166	225.2	5087	238.3	2667	251.4		
	2000	9546	107.9	9057	166.1	8719	195.2	8211	224.3	7213	253.0	6134	267.9	3715	282.5		

TRB-DV application field

RB-DV Flange Drilling



R Manometer connection G 3/8"
Dimension W with tolerance m6

PN10 UNI 2236

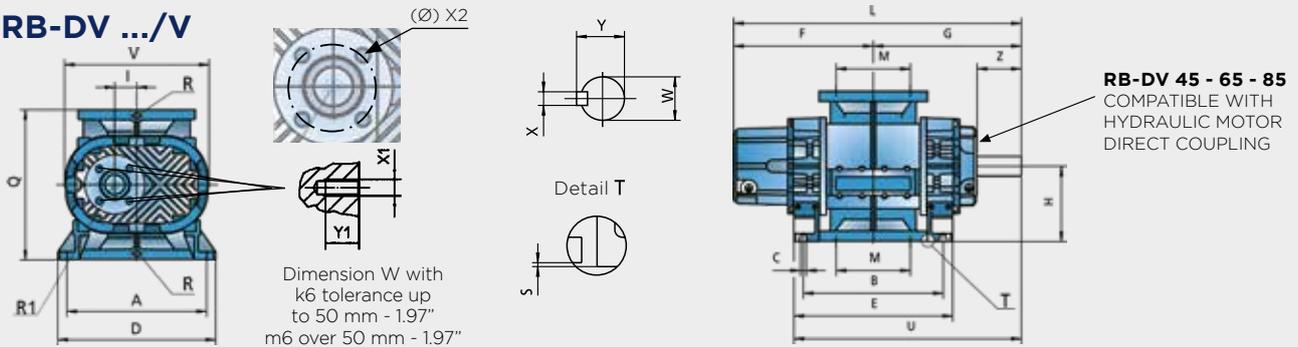
M DN		N	O	P	HOLES
80	mm	160	200	18	4
150	mm	240.2	285	23	8
200	mm	296	340	23	8
250	mm	350	405	24	12
300	mm	400	475	24	12

ANSI 125 FF

M DN		M	O	P	HOLES
3	mm	152.4	200	18	4
6	mm	240.2	285	23	8
8	mm	296	340	23	8
10	mm	362	405	24	12
12	mm	431.8	475	24	12

Dimensions and Weights

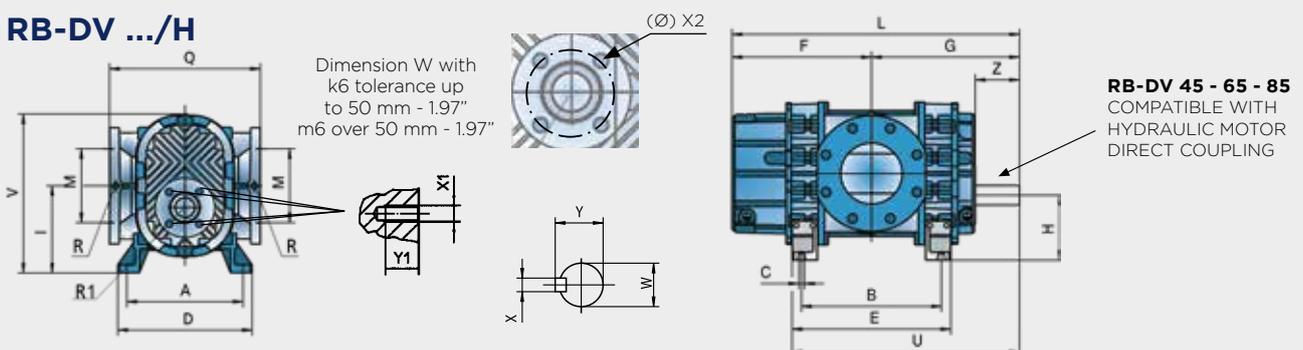
RB-DV .../V



Blower size (mm)	Ø*	A	B	C	D	E	F	G	H mm-0.5	I	L	M	Q	S	U	V	W	Z	X	Y	R1	X1	X2	Y1	Weight kg
45	85	295	275	12	331	311	273	295	160	42.5	568	80	319	1	452	295	38	80	10	41	50	4 x M8	100	15	97
65	107	340	341	14	385	387	340	361	185	53.5	701	150	369	1	555	345	48	110	14	52	62.5	4 x M10	125	15	160
85	135	370	431	18	420	482	405	423	225	67.5	828	150	449	1	665	415	55	110	16	59	70	4 x M10	140	15	250
105	168	430	501	18	486	557	463	497	265	84	960	200	529	1	776	522	60	140	18	64					400
125	212	550	590	22	640	646	528	568	300	106	1096	250	599	1	891	618	70	140	20	75					605
145	270	680	747	26	770	805	641	695	360	135	1336	300	719	1	1098	790	85	170	22	90					1040

*= Gear diameter

RB-DV .../H

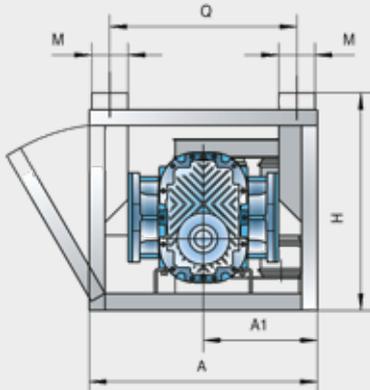


Blower size (mm)	Ø*	A	B	C	D	E	F	G	H mm-0.5	I	L	M	Q	U	V	W	Z	X	Y	R1	X1	X2	Y1	Weight kg
45	85	266	275	12	302	311	273	295	132	175	568	80	318	452	320	38	80	10	41	50	4 x M8	100	15	97
65	107	283	341	14	328	387	340	361	160	213	701	150	368	555	385	48	110	14	52	62.5	4 x M10	125	15	160
85	135	325	431	18	375	482	405	423	180	247	828	150	448	665	455	55	110	16	59	70	4 x M10	140	15	250
105	168	392	501	18	448	557	463	497	200	284	960	200	528	776	545	60	140	18	64					400
125	212	435	590	22	526	646	528	568	250	356	1096	250	598	891	670	70	140	20	75					605
145	270	570	747	26	640	805	641	695	280	415	1336	300	718	1098	815	85	170	22	90					1040

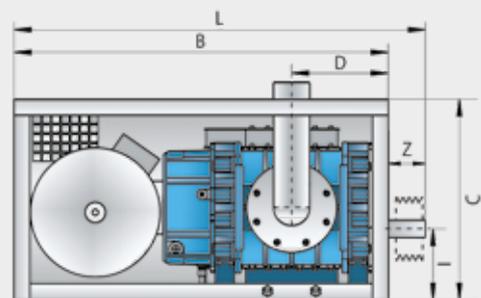
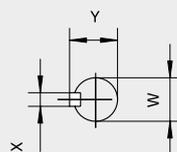
*= Gear diameter

TRB-DV

Left side opening door enclosure.



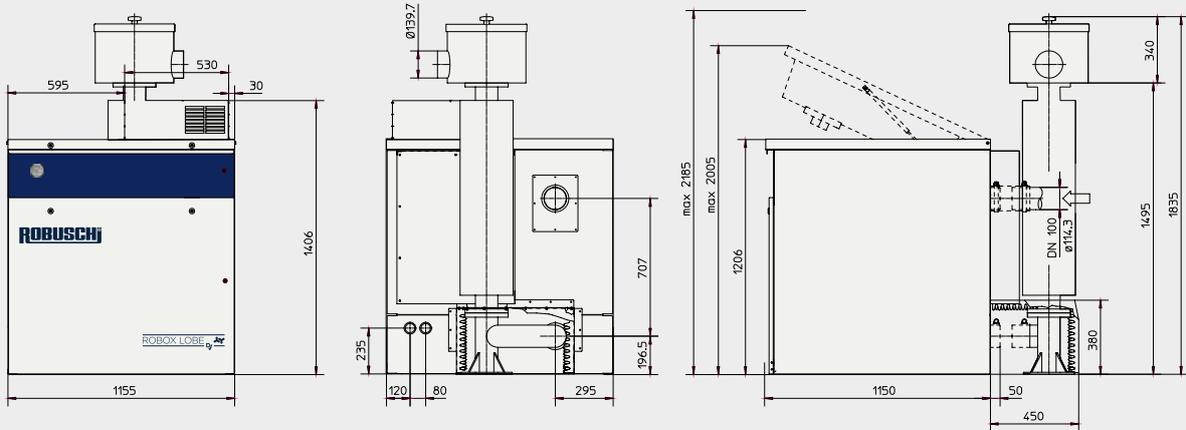
Right side opening door enclosure available too.



Blower size (mm)	A	B	C	A1	D	H	L	M	Q	W	Z	X	Y	Weight kg
65	660	1090	560	330	250	610	1200	100	530	48	110	14	51.5	320
85	720	1190	650	360	310	700	1300	100	590	55	110	16	59	435

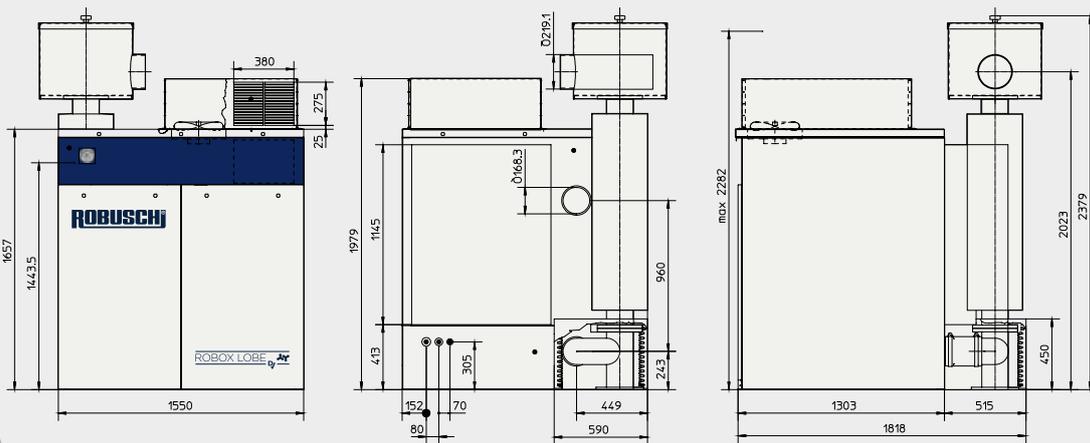
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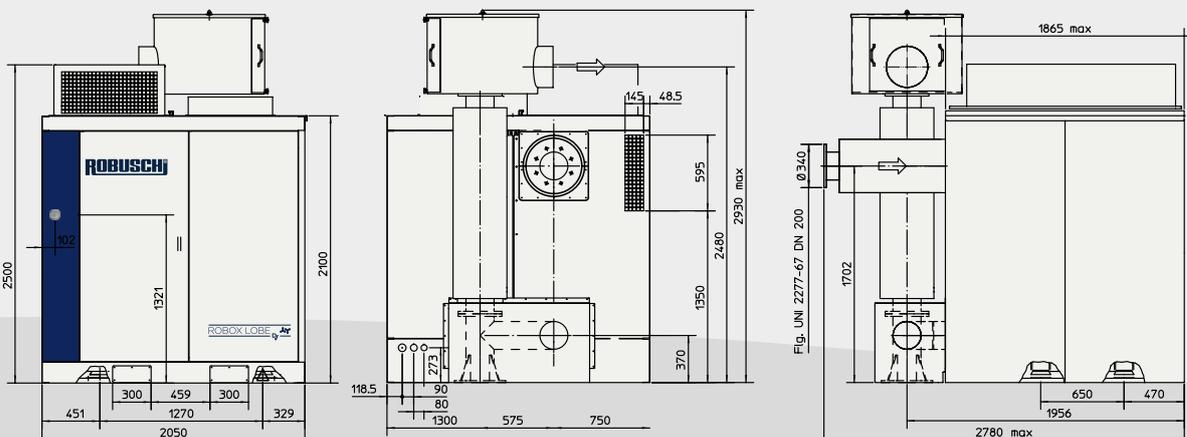
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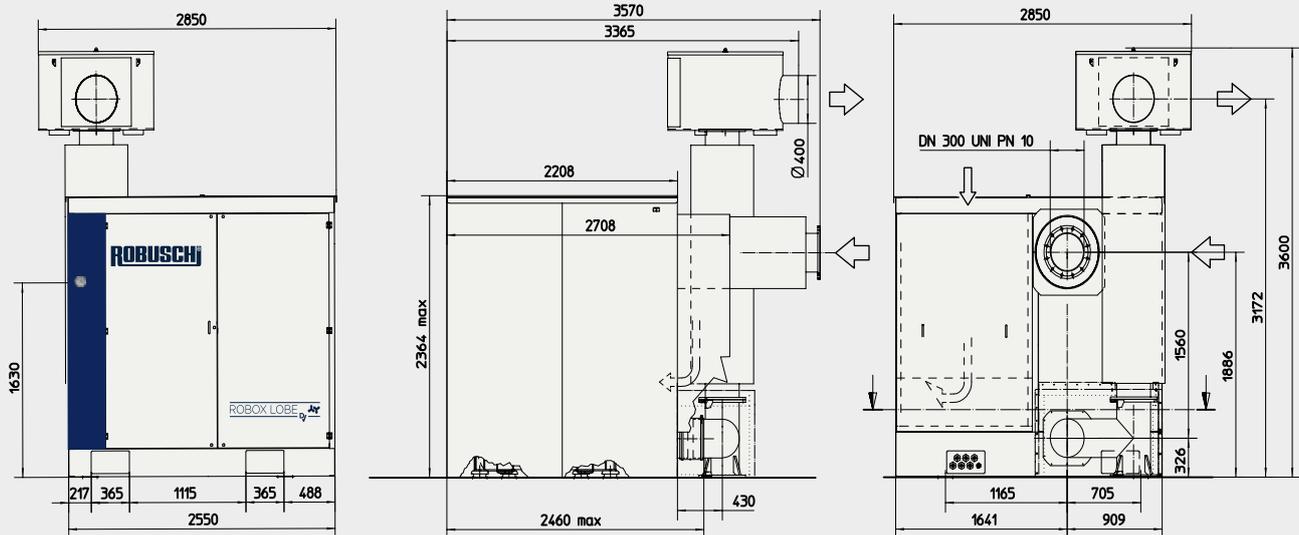
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ROBUSCH
LOBE_q



Robox Lobe DV configuration equipped with vacuum silencer kit

ROBOX 
LOBE_{DV}



Performances

Robox Lobe DV Blower Size		MAX CAPACITY m ³ /h	MAX VACUUM mbar(a)	MAX MOTOR POWER kW
2	45	680	100	30
	65	1090	100	45
3	85	2310	100	90
4	105	3350	100	132
	125	5150	100	200
5	145	9000	100	315

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