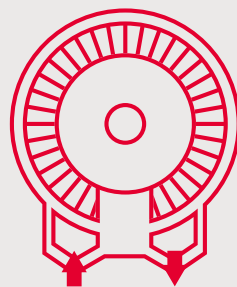


REGENERATIVE BLOWERS AND EXHAUSTERS

- CL Series and TBT Type



ISO 9001 - Cert. 1835

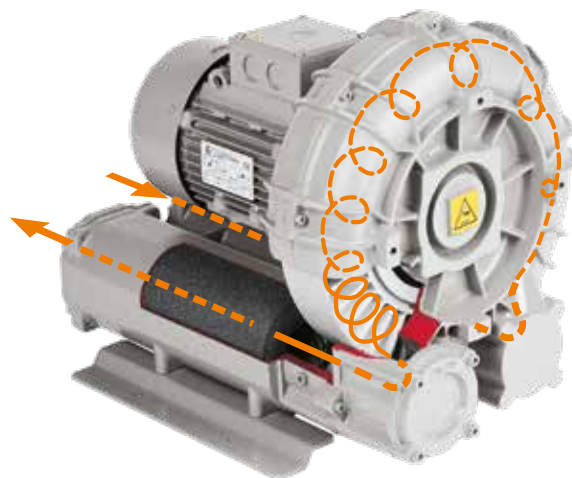


REGENERATIVE BLOWERS and EXHAUSTERS - CL Series

Operating principle

The regenerative blower or exhauster increases the pressure of the aspirated gas by the creation, in the peripheral toroidal channel, of a series of vortices caused by the centrifugal thrust of the impeller.

While the impeller is rotating, the vanes force the gas forward and, because of the centrifugal thrust, outwards, producing a helical motion. During this motion, the gas is recompressed repeatedly with a consequent linear pressure increase along the length of the channel.



Applications and advantages

Regenerative blowers (also called side channel blowers) are suitable for all those applications requiring considerably higher pressures than that which can be achieved using centrifugal fans.

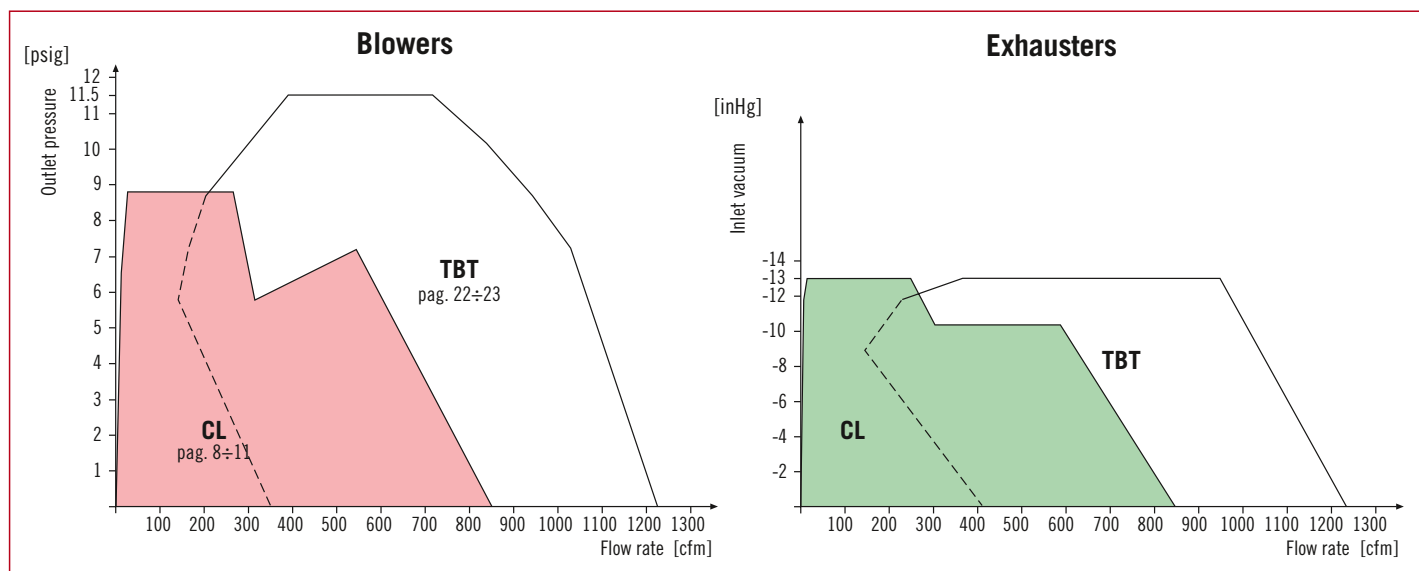
Regenerative exhausters (also called side channel exhausters) are used in all those applications requiring an operating vacuum higher than the one achievable by a fan, but not as high as to require the use of a vacuum pump.

The rotating parts are not in contact with the casing. There is therefore no friction during operation and thus no internal lubrication is necessary. The gas moving through the machine remains therefore uncontaminated and completely oil-free.

The other main advantages of using regenerative machines are:

- easy installation;
- low noise level;
- no vibration and therefore complete dynamic stability;
- pulsation free discharge;
- minimal maintenance.

Range of duty



Technical and constructional features

- Casings and impellers are made of aluminium alloy.
- The standard machines for air are manufactured in the so-called “CLOSE COUPLED” version; i.e. the front shield of the electric motor is also the machine motor-side casing half. The impeller, which is dynamically balanced, is fitted directly onto the motor shaft extension.
- The two-pole electric motors, designed for continuous operation, are available in three phase for all the powers shown in the catalogue, and in single phase according to the tables below. They are manufactured according to IEC Specifications with the following standard features:

- for machines without HS suffix and other than CL 1R and CL 2R:

degree of protection: - IP 55

insulation class: - F for powers up to 4 Hp

- H for powers 5.4 Hp and above

line voltages:

Main	Frequency	Motor power	Line voltage
3 - ph	50 Hz	≤ 4 Hp	230 VΔ / 400 VΔ
3 - ph	50 Hz	≥ 5.4 Hp	400 VΔ / 690 VΔ
1 - ph	50 Hz	≤ 3 Hp	230 V
3 - ph	60 Hz	≤ 4.8 Hp	265 VΔ / 460 VΔ
3 - ph	60 Hz	≥ 6.5 Hp	460 VΔ / 795 VΔ
1 - ph	60 Hz	≤ 3 Hp	230 V

For 50 Hz supply, the allowed voltage variation is ± 10% according to IEC 60038 Standard.

For 60 Hz supply, as well as for motors specifically requested for any other voltage at 50 Hz or at 60 Hz, a ± 5% tolerance on supply voltage is allowed, in accordance with IEC 60034 Standard.



- for machines CL 1R and CL 2R:

degree of protection: - IP54

insulation class: - F

line voltages:

Main	Frequency	Motor power	Line voltage
3-ph	50 Hz	≤ 4 Hp	200~240 VΔ / 345~415 VΔ
3-ph	50 Hz	≥ 10 Hp	345~415 VΔ / 600~720 VΔ
1-ph	50 Hz	≤ 2 Hp	220~240 V
3-ph	60 Hz	≤ 4.8 Hp	220~275 VΔ / 380~480 VΔ
3-ph	60 Hz	≥ 11.5 Hp	380~480 VΔ / 660~720 VΔ
1-ph	60 Hz	≤ 2.35 Hp	220~240 V



- for machines with HS suffix:

degree of protection: - IP54

insulation class: - F

line voltages:

Main	Frequency	Motor power	Line voltage
3 - ph	50 Hz	≤ 4 Hp	200~240 VΔ / 345~415 VΔ
3 - ph	50 Hz	≥ 5.4 Hp (●)	345~415 VΔ / 595~720 VΔ
1 - ph	50 Hz	≤ 2 Hp	104~127 V / 208~254 V
1 - ph	50 Hz	3 Hp	230~242 V
3 - ph	60 Hz	≤ 4.6 Hp	208~275 VΔ / 380~480 VΔ
3 - ph	60 Hz	≥ 6.2 Hp (●)	380~480 VΔ / 660~720 VΔ
1 - ph	60 Hz	≤ 2.35 Hp	104~127 V / 208~254 V

(●) with the exception of CL 60 HS 5.4/6.2 Hp whose motor, in the standard version, is manufactured for the line voltages:

at 50 Hz : 200~240 VΔ / 345~415 VΔ

at 60 Hz : 208~275 VΔ / 380~480 VΔ



- The machines meet the requirements of the European Directives 2006/42 (Machines), 2014/35 (Low Voltage), 2014/30 (Electromagnetic Compatibility) and of the applicable harmonised Standards.

Accessories

A complete range of accessories is available for all machines: cartridge type filters for blowers - in-line filters for exhausters - flexible hoses - non return valves - pressure relief valves for blowers - vacuum relief valves for exhausters - pressure and vacuum gauges.

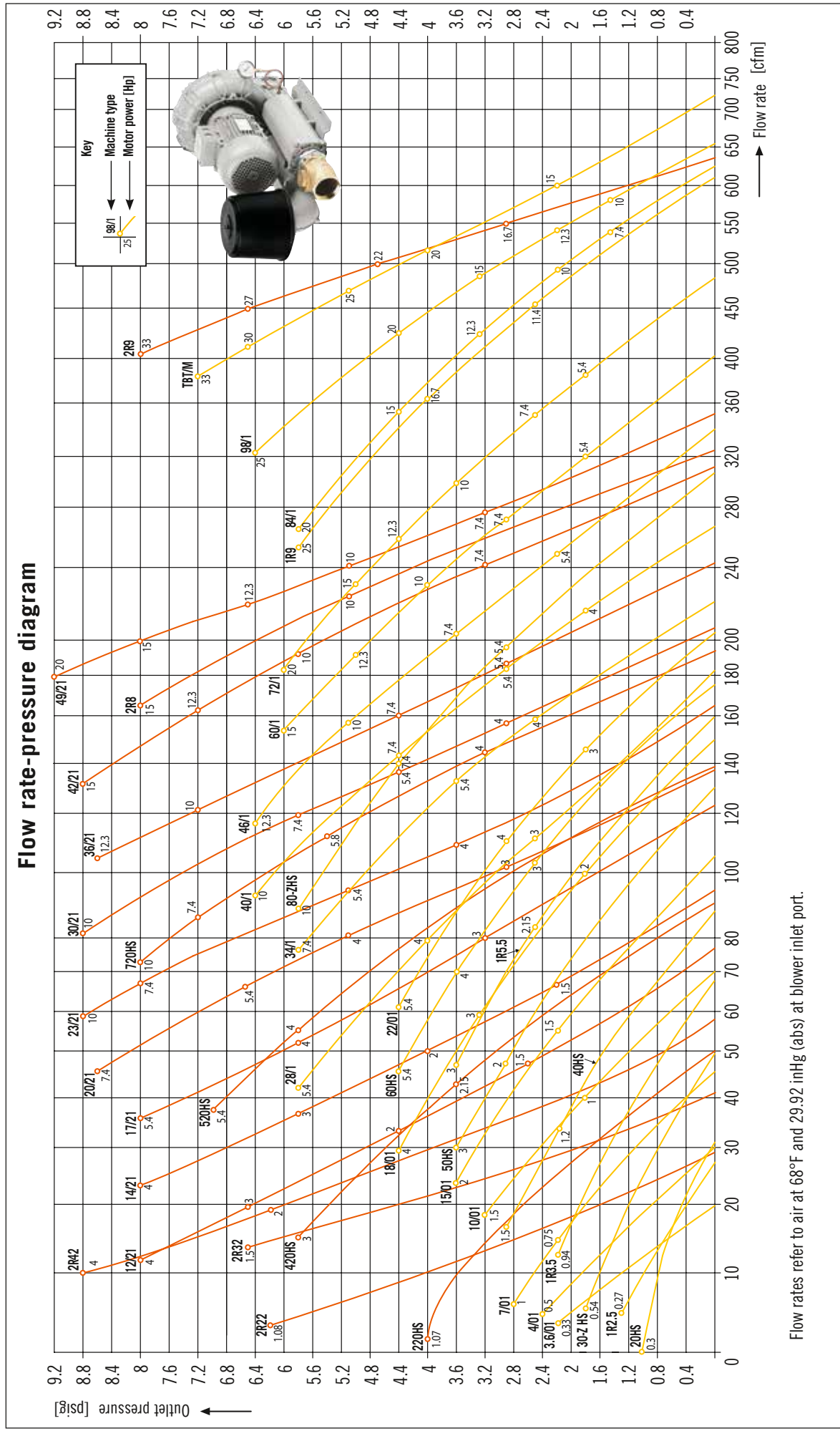
Note

In this catalogue are shown performance and accessories for blowers only. Dimensions of CL and TBT are shown both for regenerative blowers and exhausters.

This catalogue is for informational purposes only. It should not be considered as a binding description of the products or their performance.



Most of the blower models for air are also manufactured in conformity to the requirements of the European Directive 2014/34/EU (ATEX) for Zones 1 and 2, 21 and 22 and can be fitted with IECEx certified motors upon request.



		Temperature rise [°F]																
Outlet pressure [psig]		0.8	1.2	1.6	2	2.4	2.8	3.2	3.6	4.4	5.6	6	6.4	6.8	7.2	8	8.8	9.2
Blower Type	CL 20 HS	33																
	CL 1R2.5	28	57															
	CL 30-Z HS	23	39	55														
	CL 3.6/01	18	26	37	50													
	CL 4/01	28	34	51	69	91												
	CL 7/01	16	26	37	49	62	75											
	CL 1R3.5	26	41	59	83													
	CL 10/01	20	27	35	44	54	66	79										
	CL 40 HS	17	25	34	46	62	89											
	CL 15/01	19	26	34	43	53	63	74	86									
	CL 50 HS	21	30	40	52	66	82	101	123									
	CL 18/01	15	20	29	39	49	60	72	85	114								
	CL 1R5.5	25	32	41	52	65	81	102	131									
	CL 60 HS	25	33	41	50	60	72	89	110	164								
	CL 28/1	14	19	25	33	42	52	63	75	104	160							
	CL 22/01	23	32	41	51	61	71	81	91	113								
	CL 34/1	17	24	31	38	46	55	65	78	105	150							
	CL 40/1	25	31	37	44	51	59	68	77	98	137	153	171					
	CL 80-Z HS	20	27	34	42	50	60	70	80	108	167							
	CL 46/1	18	24	30	36	43	51	60	70	93	134	150	167					
	CL 60/1	16	23	30	38	46	55	65	75	98	145	163						
	CL 72/1	23	28	34	41	49	58	68	80	106	154	173						
	CL 1R9	26	31	37	45	54	64	74	86	112	163							
	CL 84/1	23	29	35	41	48	56	65	75	97	140							
	CL 98/1	28	34	41	48	55	63	71	80	101	139	154	172					
	TBT/M	35	40	45	50	55	60	66	72	86	107	114	122	130	138			
	CL 2R22	30	35	40	45	50	56	62	68	80	104	113						
	CL 2R32	23	28	33	38	43	49	55	61	75	96	103	111					
	CL 220 HS	18	25	33	41	50	60	72	88									
	CL 2R42	26	29	33	38	43	49	55	61	73	94	101	109	117	126	145	169	
	CL 12/21	16	21	26	32	38	45	52	59	73	94	101	109	117	125	147		
	CL 420 HS	23	29	35	41	48	57	67	77	101	149							
	CL 14/21	14	19	24	29	34	40	47	54	68	96	106	116	127	138	160		
	CL 17/21	25	29	33	38	43	49	55	62	77	104	113	123	134	145	170		
	CL 520 HS	26	30	34	39	45	52	60	68	88	124	137	151	165				
	CL 20/21	26	33	40	47	54	62	69	76	90	114	122	131	140	150	171		
	CL 23/21	28	32	36	41	46	52	58	64	78	99	106	114	123	132	152	174	
	CL 720 HS	33	39	45	51	58	64	71	78	93	118	127	137	148	160	186		
	CL 30/21	25	31	37	43	49	55	61	68	82	106	114	123	133	143	165	187	
	CL 36/21	33	39	45	52	59	65	71	78	92	114	122	131	141	151	171		
	CL 42/21	22	26	30	34	39	45	51	57	71	95	104	114	125	136	158	183	
	CL 2R8	35	40	45	50	56	62	68	75	90	115	124	134	145	156	180		
	CL 49/21	26	31	37	43	49	56	63	70	84	106	114	122	130	138	154	172	182
	CL 2R9	37	41	45	49	54	60	66	72	86	111	120	129	139	149	174		

Tolerance: ± 10 °F

		Sound level dB(A) at 3.5 ft							
Outlet pressure [psig]		0.8	2	2.8	3.6	4.4	5.2	5.8	6.4
Blower Type	CL 20 HS	68							
	CL 1R2.5	62							
	CL 30-Z HS	69							
	CL 3.6/01	70	72						
	CL 4/01	72	75						
	CL 7/01	75	77	77					
	CL 1R3.5	69	70						
	CL 10/01	71	72	73					
	CL 40 HS	70	73	76					
	CL 15/01	73	74	75	76				
	CL 50 HS	72	76	76	77				
	CL 18/01	73	74	75	76	77			
	CL 1R5.5	72	73	74	75				
	CL 60 HS	77	78	78	79	80			
	CL 28/1	75	79	81	83	84	85	85	
	CL 22/01	75	76	76	77	78			
	CL 34/1	74	75	77	78	79	79	80	
	CL 40/1	77	78	80	80	81	81	82	83
	CL 80-Z HS	76	77	79	80	80	81	82	
	CL 46/1	79	79	80	80	81	82	83	83
	CL 60/1	79	80	80	81	82	82	82	
	CL 72/1	78	80	82	82	83	83	84	
	CL 1R9	76	78	79	81	82	84	85	
	CL 84/1	80	82	83	83	84	84	85	
	CL 98/1	79	80	81	82	82	83	84	85
	TBT/M	79	80	81	82	82	83	83	83

		Sound level dB(A) at 3.5 ft							
Outlet pressure [psig]		1.6	3.2	4.4	5.8	6.4	7.2	8	8.8
Blower Type	CL 2R22	60	61	63	64				
	CL 2R32	62	62	64	65	65			
	CL 220 HS	69	71						
	CL 2R42	66	67	67	68	70	71	72	72
	CL 12/21	71	73	73	75	77	78	78	
	CL 420 HS	75	75	77	78				
	CL 14/21	70	72	73	74	75	76	77	
	CL 17/21	70	71	72	74	75	76	78	
	CL 520 HS	74	74	75	76	76			
	CL 20/21	71	73	74	74	75	75	76	
	CL 23/21	78	79	82	83	83	83	83	83
	CL 720 HS	74	74	74	74	75	75	76	
	CL 30/21	77	78	79	80	81	81	82	82
	CL 36/21	79	79	79	80	80	81	81	
	CL 42/21	80	81	83	83	84	84	85	85
	CL 2R8	78	78	79	80	80	80	80	
	CL 49/21	78	79	81	82	83	84	85	86
	CL 2R9	79	81	82	83	83	85	85	

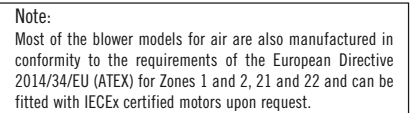
The noise level is intended as sound pressure level (SPL), measured in free field, in accordance with the Standard EN ISO 2151.

Tolerance on sound level values: ± 2 dB(A).

Outlet pressure [psig]		0	0.4		0.8		1.2		1.6		2		2.4		2.8		3.2		3.6		4		
Flow rate		cfm	cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		
Motor power				Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp	
Blower Type	CL 20 HS	31	22	0.3	10	0.3	[0 cfm at 1 psig]																
	CL 1R2.5	27	20	0.27	13	0.27	6	0.27	[4 cfm at 1.3 psig]														
	CL 30-Z HS	49	39	0.54	29	0.54	20	0.54	10	0.54	[5 cfm at 1.8 psig]												
	CL 3.6/01	20	17	0.33	14	0.33	11	0.33	8	0.33	4	0.33	[3 cfm at 2.2 psig]										
	CL 4/01	30	26	0.5	21	0.5	17	0.5	12	0.5	8	0.5	4	0.5									
	CL 7/01	47	41	0.75	35	0.75	29	0.75	23	0.75	17	0.75	11	1	5	1							
	CL 1R3.5	68	58	0.94	47.5	0.94	37.5	0.94	27	0.94	17	0.94	[12 cfm at 2.2 psig]										
	CL 10/01	70	64	1	57	1	51	1	44	1	38	1.5	31	1.5	25	1.5	18	1.5					
	CL 40 HS	88	78	1.2(●)	68	1.2(●)	58	1.2(●)	48.5	1.2(●)	39	1.2(●)	29	1.5	19.5	1.5	[17 cfm at 2.9 psig]						
	CL 15/01	104	95	1.5	86	1.5	77	1.5	68	1.5	59	1.5	50	2	42	2	33	2	24	2			
	CL 50 HS	128	117	2	106	2	95	2	84	2	73	2	62	2	51	2	40	3	30	3			
	CL 18/01	148	137	2	126	2	115	2	104	2	93	3	82	3	72	3	61	3	50	4	40	4	
	CL 1R5.5	159	146	2.15	134	2.15	121	2.15	109	2.15	97	2.15	84	2.15	72	3	60	3	47	3			
	CL 60 HS	177	166	3	155	3	143	3	130	3	118	3	106	3	94	4	82	4	70	4	58	5.4	
	CL 28/1	182	169	3	156	3	144	3	133	3	122	3	112	3	103	4	95	4	87	4	78	4	
	CL 22/01	203	190	3	177	3	164	3	151	3	138	4	125	4	112	4	100	5.4	87	5.4	74	5.4	
	CL 34/1	223	213	4	203	4	193	4	182	4	172	4	161	4	151	5.4	141	5.4	131	5.4	121	7.4	
	CL 40/1	267	254	4	242	4	230	4	218	4	206	5.4	195	5.4	185	5.4	174	7.4	164	7.4	153	7.4	
	CL 80-Z HS	305	290	5.4	275	5.4	260	5.4	245	5.4	230	5.4	215	5.4	200	5.4	185	7.4	170	7.4	155	7.4	
	CL 46/1	338	317	5.4	298	5.4	280	5.4	264	5.4	250	5.4	236	7.4	223	7.4	211	7.4	199	7.4	188	10	
	CL 60/1	403	382	5.4	361	5.4	342	5.4	325	5.4	308	7.4	292	7.4	277	7.4	261	10	245	10	230	10	
	CL 72/1	482	459	5.4	437	5.4	416	5.4	396	5.4	376	7.4	356	7.4	336	10	316	10	296	10	276	12.5	
	CL 1R9	611	586	11.4	562	11.4	537	11.4	512	11.4	488	11.4	463	11.4	438	16.7	414	16.7	389	16.7	364	16.7	
	CL 84/1	627	602	7.4	578	7.4	553	7.4	529	10	504	10	479	12.5	455	12.5	430	12.5	404	15	379	15	
	CL 98/1	659	637	10	616	10	595	10	574	12.5	553	12.5	532	15	511	15	490	15	469	20	448	20	
	TBT/M	723	700	15	677	15	656	15	635	15	614	15	593	20	572	20	551	20	531	20	511	20	
	CL 2R22	29	26	1.08(●)	24	1.08(●)	22	1.08(●)	20	1.08(●)	18	1.08(●)	16	1.08(●)	14.5	1.08(●)	13	1.08(●)	11.5	1.08(●)	10	1.08(●)	
	CL 2R32	41	38	1.5	35	1.5	33	1.5	31	1.5	29	1.5	27.5	1.5	26	1.5	24.5	1.5	23	1.5	21.5	1.5	
	CL 220 HS	50	46	1.07	41.5	1.07	37	1.07	32.5	1.07	28	1.07	23.5	1.07	19	1.07	14.5	1.07	9.5	1.07	1.7	1.07	
	CL 2R42	58	53	2	49	2	46	2	43.5	2	41	2	38	2	36	2	34	2	32	2	30	2	
	CL 12/21	76	71	1.5	66	1.5	61.5	1.5	57	1.5	53	1.5	49	1.5	45	2	41.5	2	38	2	35	2	
	CL 420 HS	90	85	2.15(●)	80	2.15(●)	75	2.15(●)	69	2.15(●)	64	2.15(●)	59	2.15(●)	54	2.15(●)	49	2.15(●)	43	2.15(●)	38	3	
	CL 14/21	94	88	1.5	83	1.5	78	1.5	73	1.5	69	1.5	65	2	61	2	57	2	53.5	2	50	2	
	CL 17/21	121	115	3	110	3	105	3	100	3	95	3	90	3	85	3	80	3	75	4	70	4	
	CL 520 HS	139	134	4	128	4	123	4	117	4	111	4	105	4	99	4	93	4	88	4	82	4	
	CL 20/21	138	132	3	126	3	121	3	116	3	111	3	107	3	103	3	99	4	95	4	91	4	
	CL 23/21	165	156	4	148	4	141	4	134	4	128	4	123	4	118.5	4	114	4	110	4	106	5.4	
	CL 720 HS	191	185	4	179	4	173	4	167	4	161	4	155	4	149	4	143	4	138	5.8	132	5.8	
	CL 30/21	206	198	4	191	4	184	4	177	4	170	4	164	4	158	4	153	5.4	148	5.4	143	5.4	
	CL 36/21	242	234	5.4	226	5.4	218	5.4	210	5.4	203	5.4	195	5.4	188	5.4	180	7.4	173	7.4	166	7.4	
	CL 42/21	309	299	7.4	290	7.4	281	7.4	273	7.4	265	7.4	257	7.4	249	7.4	241	7.4	233	10	225	10	
	CL 2R8	322	314	10	307	10	299	10	291	10	283	10	275	10	267	10	260	10	252	10	244	10	
	CL 49/21	353	339	7.4	327	7.4	317	7.4	308	7.4	300	7.4	291	7.4	283	7.4	275	7.4	267	10	259	10	
	CL 2R9	635	623	16.7	612	16.7	600	16.7	588	16.7	577	16.7	565	16.7	553	16.7	542	22	530	22	518	22	

Flow rates refer to air at 68°F and 29.92 inHg (abs) at blower inlet port.

Tolerance on flow rate values: ±10%



(●) CL 2R22 three phase motor: 1.08Hp - single phase motor: 1.5Hp

High



Note:



Flow rates refer to air at 68°F and 29.92 inHg (abs) at blower inlet port.

		Temperature rise [°F]																
Outlet pressure	[psig]	0.8	1.2	1.6	2	2.4	2.8	3.2	3.6	4.4	5.6	6	6.4	6.8	7.2	8	8.8	9.2
Blower Type	CL 20 HS	23	45															
	CL 1R2.5	24	39	68														
	CL 30-Z HS	18	28	43	63													
	CL 3.6/01	19	25	34	45													
	CL 4/01	23	33	44	58	76												
	CL 7/01	21	27	35	45	57	71	90										
	CL 1R3.5	28	40	55	74													
	CL 10/01	22	28	35	43	53	66	83	105									
	CL 40 HS	17	24	32	41	52	68											
	CL 15/01	24	30	37	44	52	61	71	82									
	CL 50 HS	22	27	33	41	51	62	75	91									
	CL 18/01	20	25	32	40	49	59	70	82	106								
	CL 1R5.5	30	36	43	52	64	79	98	121									
	CL 60 HS	24	30	36	43	52	63	75	90	133								
	CL 28/1	16	22	29	36	44	53	63	73	97	144							
	CL 22/01	28	35	42	51	60	69	79	89	109								
	CL 34/1	19	25	31	37	44	52	61	71	92	134							
	CL 40/1	25	31	37	44	51	59	68	77	97	129	142	156					
	CL 80-Z HS	23	28	34	41	49	57	65	74	97	147							
	CL 46/1	20	25	31	38	45	52	60	69	89	126	140	156					
	CL 60/1	19	25	31	38	46	54	62	71	91	130							
	CL 72/1	28	33	39	46	54	63	73	83	105	145	162						
	CL 1R9	30	36	42	49	57	66	76	86	110	154							
	CL 84/1	27	32	38	44	50	57	65	73	93	132							
	CL 98/1	34	41	48	56	64	72	80	88	105	134	147						
	TBT/M	38	44	50	57	64	71	78	85	99	122	131	141	151	161			
	CL 2R22	30	34	39	44	49	54	60	66	78	99	106	114					
	CL 2R32	33	37	41	45	49	54	60	66	78	99	106						
	CL 220 HS	18	23	29	36	44	54	67	83	130								
	CL 2R42	27	30	35	40	46	52	58	64	76	98	105	112	119	126	141	157	
	CL 12/21	21	25	29	33	37	42	48	54	66	88	96	104	112	121	140		
	CL 420 HS	24	28	32	37	43	50	58	67	88	127							
	CL 14/21	22	26	31	36	42	48	54	60	73	94	101	109	118	127	148		
	CL 17/21	24	28	32	36	41	47	53	59	73	97	105	114	124	134	154		
	CL 520 HS	27	30	34	39	45	51	57	64	80	109	121	134	149				
	CL 20/21	24	29	34	39	45	51	57	63	78	102	110	118	127	136	155	177	
	CL 23/21	28	32	36	41	46	51	56	61	73	91	98	105	113	122	141	164	
	CL 720 HS	33	36	40	44	49	54	60	66	78	99	107	116	125	135	156	181	
	CL 30/21	24	29	34	40	46	52	58	64	76	95	103	111	119	128	148	172	
	CL 36/21	35	40	45	51	57	63	69	75	87	108	115	123	131	139	158	181	
	CL 42/21	33	38	43	48	53	58	64	70	81	101	109	117	125	134	155	178	
	CL 2R8	44	48	52	57	63	69	75	81	94	117	125	134	143	153	173		
	CL 49/21	35	41	47	53	59	65	71	77	89	108	115	122	130	138	154	170	178
	CL 2R9	58	62	67	72	77	82	87	93	109	135	145	155	166				

Tolerance: ± 10 °F

		Sound level dB(A) at 3.5 ft							
Outlet pressure	[psig]	0.8	2	2.8	3.6	4.4	5.2	5.8	6.4
Blower Type	CL 20 HS	69							
	CL 1R2.5	65							
	CL 30-Z HS	69	76						
	CL 3.6/01	72	74						
	CL 4/01	74	76						
	CL 7/01	77	78	79					
	CL 1R3.5	69	71						
	CL 10/01	74	75	76	77				
	CL 40 HS	72	74	76					
	CL 15/01	74	75	76	77				
	CL 50 HS	73	76	76	77				
	CL 18/01	75	76	77	78	78			
	CL 1R5.5	72	74	75	76				
	CL 60 HS	78	78	78	79	80			
	CL 28/1	78	79	81	83	84	85	85	
	CL 22/01	77	78	79	80	80			
	CL 34/1	78	79	79	80	80	80	81	
	CL 40/1	78	79	80	81	82	82	83	83
	CL 80-Z HS	78	79	81	82	82	83	83	
	CL 46/1	79	80	80	81	82	83	84	84
	CL 60/1	80	80	81	81	82	83	84	
	CL 72/1	82	84	84	85	86	86	86	
	CL 1R9	79	80	81	82	83	83	85	
	CL 84/1	82	83	85	86	86	87	87	
	CL 98/1	82	84	85	86	86	87	87	
	TBT/M	81	82	83	83	84	84	85	85

		Sound level dB(A) at 3.5 ft							
Outlet pressure	[psig]	1.6	3.2	4.4	5.8	6.4	7.2	8	8.8
Blower Type	CL 2R22	64	65	66	67	68			
	CL 2R32	66	66	68	69				
	CL 220 HS	73	75	78					
	CL 2R42	68	69	71	72	73	74	75	75
	CL 12/21	77	78	79	79	79	79	79	
	CL 420 HS	76	78	78	79				
	CL 14/21	76	77	77	78	78	79	79	
	CL 17/21	78	78	79	79	80	80	80	
	CL 520 HS	75	77	77	78	78			
	CL 20/21	74	75	76	76	77	77	78	79
	CL 23/21	81	82	82	83	83	83	83	83
	CL 720 HS	79	79	79	79	79	79	79	80
	CL 30/21	81	81	82	83	83	83	83	84
	CL 36/21	82	83	83	83	84	84	84	84
	CL 42/21	82	83	84	84	85	85	86	86
	CL 2R8	80	80	81	81	82	82	82	
	CL 49/21	83	84	85	85	85	86	86	87
	CL 2R9	82	83	84	86	86			

The noise level is intended as sound pressure level (SPL), measured in free field, in accordance with the Standard EN ISO 2151.

Tolerance on sound level values: ± 2 dB(A).

60 Hz Blowers - performance with 60 Hz motors (3500 rpm)

Outlet pressure [psig]		0		0.4		0.8		1.2		1.6		2		2.4		2.8		3.2		3.6		4	
Flow rate		cfm	cfm			cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm	
Motor power				Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp	
Blower Type	CL 20 HS	39	32	0.37	23	0.37	8.5	0.37	[0 cfm at 1.3 psig]														
	CL 1R2.5	34	27.2	0.3	20.4	0.3	13.6	0.3	6.5	0.3													
	CL 30-Z HS	63	53	0.7	44	0.7	34	0.7	24	0.7	14	0.7	[10 cfm at 2.2 psig]										
	CL 3.6/01	23.5	20	0.4	17	0.4	14	0.4	11	0.4	8	0.4	[6.5 cfm at 2.2 psig]										
	CL 4/01	36.5	32	0.6	27.5	0.6	23	0.6	18.5	0.6	14	0.6	9	0.6	[6.5 cfm at 2.6 psig]								
	CL 7/01	58	52	0.9	46	0.9	40	0.9	34	0.9	29	0.9	23	1.2	17	1.2	11	1.2					
	CL 1R3.5	83	73	1.1 (•)	63	1.1 (•)	53	1.1 (•)	43	1.1 (•)	33	1.1 (•)	[28 cfm at 2.2 psig]										
	CL 10/01	85	78	1.2	72	1.2	65	1.2	58	1.75	52	1.75	45	1.75	39	1.75	32	2.4	25	2.4			
	CL 40 HS	104	94	1.55 (•)	84	1.55 (•)	74	1.55 (•)	65	1.55 (•)	55	2 (•)	46	2 (•)	37	2 (•)	[34.5 cfm at 2.9 psig]						
	CL 15/01	122	113	1.75	105	1.75	96	1.75	88	3	79	3	71	3	62	3	54	3	45	3			
	CL 50 HS	141	135	2.35	128	2.35	120	2.35	112	2.35	103	2.35	93	2.35	83	2.35	72	3.5	61	3.5			
	CL 18/01	171	160	3.6	149	3.6	138	3.6	127	3.6	116	3.6	105	3.6	94	3.6	83	4.8	72	4.8	61	4.8	
	CL 1R5.5	189	177	2.75	164	2.75	152	2.75	140	2.75	127	2.75	115	2.75	103	3.5	90	3.5	78	3.5			
	CL 60 HS	212	200	3.5	189	3.5	178	3.5	166	3.5	155	3.5	144	3.5	132	3.5	121	4.6	110	4.6	98	4.6	
	CL 28/1	218	204	3.6	192	3.6	181	3.6	170	3.6	160	3.6	150	3.6	141	4.8	132	4.8	123	4.8	114	4.8	
	CL 22/01	251	238	4.8	225	4.8	212	4.8	199	4.8	186	4.8	173	4.8	160	6.5	147	6.5	134	6.5	121	6.5	
	CL 34/1	277	266	4.8	255	4.8	244	4.8	233	4.8	222	4.8	211	6.5	200	6.5	189	6.5	178	6.5	167	8.8	
	CL 40/1	318	306	4.8	295	4.8	285	4.8	275	4.8	264	6.5	254	6.5	243	6.5	233	8.8	223	8.8	212	8.8	
	CL 80-Z HS	365	350	4	336	4	322	4	307	4	293	4	279	4	264	4	250	5.5	236	5.5	222	5.5	
	CL 46/1	406	388	6.5	371	6.5	355	6.5	340	6.5	326	6.5	313	8.8	300	8.8	287	8.8	274	12	261	12	
	CL 60/1	477	457	8.8	438	8.8	420	8.8	404	8.8	388	8.8	373	12	357	12	341	12	326	12	310	15	
	CL 72/1	562	548	8.8	533	8.8	517	8.8	500	8.8	481	12	461	12	441	12	420	15	399	15	378	17.7	
	CL 1R9	718	693	13	668	13	644	13	619	13	594	13	570	19.5	545	19.5	520	19.5	496	19.5	471	28.5	
	CL 84/1	735	717	12	693	12	667	12	642	12	617	15	592	15	566	15	541	17.7	516	17.7	490	24	
	CL 98/1	768	749	15	730	15	710	15	691	17.7	671	17.7	652	17.7	632	24	613	24	593	24	574	24	
	TBT/M	848	828	17.7	809	17.7	789	17.7	771	17.7	755	24	739	24	723	24	706	24	690	24	674	30	
	CL 2R22	36.5	33	1.25 (•)	30.4	1.25 (•)	28	1.25 (•)	26	1.25 (•)	24.5	1.25 (•)	23	1.25 (•)	21.5	1.25 (•)	20	1.25 (•)	18.5	1.25 (•)	17	1.25 (•)	
	CL 2R32	47	44.5	1.75	42.5	1.75	40.5	1.75	38.7	1.75	37	1.75	35.5	1.75	34	1.75	32.5	1.75	31	1.75	29.5	1.75	
	CL 220 HS	61	57	1.2	53	1.2	49	1.2	44	1.2	40	1.2	36	1.2	31	1.2	27	1.2	23	1.2	18	1.2	
	CL 2R42	71	66	2.35	62	2.35	58.5	2.35	55.5	2.35	53	2.35	50.5	2.35	48	2.35	46	2.35	44	2.35	42	2.35	
	CL 12/21	88	85	1.75	81	1.75	77	1.75	73	1.75	69	1.75	65	2.4	62	2.4	59	2.4	56	2.4	53	3.6	
	CL 420 HS	115	110	2.75 (•)	105	2.75 (•)	100	2.75 (•)	95	2.75 (•)	89	2.75 (•)	84	2.75 (•)	79	2.75 (•)	74	2.75 (•)	68	3.5	63	3.5	
	CL 14/21	106	102	2.4	97	2.4	93	2.4	90	2.4	87	2.4	84	2.4	81	2.4	78	2.4	75	3.6	72	3.6	
	CL 17/21	138	134	3.6	129	3.6	125	3.6	121	3.6	116	3.6	111	3.6	107	3.6	102	3.6	98	3.6	93	4.8	
	CL 520 HS	166	160	4.6	155	4.6	149	4.6	144	4.6	138	4.6	133	4.6	127	4.6	122	4.6	116	4.6	111	4.6	
	CL 20/21	165	159	3.6	153	3.6	148	3.6	144	3.6	140	3.6	136	3.6	132	4.8	129	4.8	125	4.8	122	4.8	
	CL 23/21	192	186	4.8	181	4.8	175	4.8	170	4.8	164	4.8	159	4.8	154	4.8	149	4.8	145	6.5	141	6.5	
	CL 720 HS	232	226	4.6	221	4.6	215	4.6	210	4.6	204	4.6	199	4.6	193	6.5	188	6.5	182	6.5	177	6.5	
	CL 30/21	244	237	4.8	230	4.8	224	4.8	218	4.8	213	4.8	207	6.5	202	6.5	197	6.5	193	8.8	188	8.8	
	CL 36/21	280	274	6.5	269	6.5	263	6.5	257	6.5	251	6.5	246	8.8	240	8.8	234	8.8	229	8.8	223	8.8	
	CL 42/21	359	350	8.8	342	8.8	335	8.8	327	8.8	319	8.8	312	8.8	304	12	297	12	289	12	282	12	
	CL 2R8	404	396	11.5	388	11.5	379	11.5	371	11.5	362	11.5	354	11.5	345	11.5	337	11.5	328	11.5	320	11.5	
	CL 49/21	412	405	8.8	398	8.8	391	8.8	384	8.8	378	8.8	371	8.8	364	12	357	12	351	12	344	12	
	CL 2R9	758	746	19.5	734	19.5	723	19.5	711	19.5	699	25	687	25	676	25	664	25	652	25	641	31	

Flow rates refer to air at 68°F and 29.92 inHg (abs) at blower inlet port.

Tolerance on flow rate values: ±10%



Note:
Most of the blower models for air are also manufactured in conformity to the requirements of the European Directive 2014/34/EU (ATEX) for Zones 1 and 2, 21 and 22 and can be fitted with IECEx certified motors upon request.

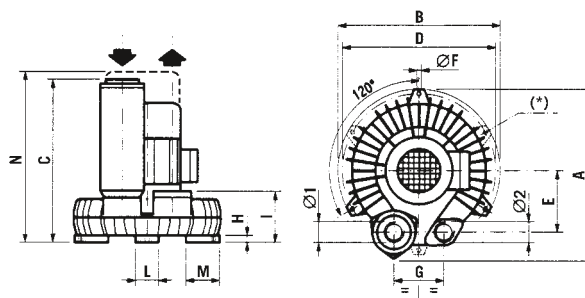
4.4		4.8		5.2		5.6		6		6.4		6.8		7.2		7.6		8		8.4		8.8		9.2	
cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm		cfm	
	Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp		Hp
50	4.8																								
87	6.2																								
106	6.5	97	6.5	89	6.5	81	6.5	[77 cfm at 5.8 psig]																	
108	6.5																								
156	8.8	145	8.8	134	8.8	122	12	[116 cfm at 5.8 psig]																	
202	8.8	191	12	181	12	171	12	160	12	150	12	[147 cfm at 6.5 psig]													
207	5.5	193	7.5	179	7.5	164	7.5	[157 cfm at 5.8 psig]																	
249	12	236	12	223	12	211	15	198	15	185	15	[182 cfm at 6.5 psig]													
294	15	279	17.7	263	17.7	247	17.7	[239 cfm at 5.8 psig]																	
357	17.7	336	24	315	24	294	24	273	24																
446	28.5	421	28.5	397	28.5	372	28.5	[360 cfm at 5.8 psig]																	
465	24	440	24	414	24	389	25	[376 cfm at 5.8 psig]																	
554	24	535	30	515	30	496	30	476	30	[366 cfm at 6.2 psig]															
658	30	641	30	625	30	609	34	593	34	577	34	560	40	544	40										
15,5	1.25 (●)	14,2	1.25 (●)	13	1.25 (●)	11,8	1.25 (●)	10,6	1.25 (●)	9,5	1.25 (●)														
28.2	1.75	27	1.75	25,8	1.75	24,7	1.75	23,5	1.75																
13	1.2																								
40	2.35	38	2.35	36	2.35	34,2	2,35	32,4	4,8	30,6	4,8	28,8	4,8	27	4,8	25,5	4,8	24	4,8	22,5	4,8	21	4,8		
50	3.6	47	3.6	44	3.6	41	3.6	39	3.6	37	3.6	34	4.8	31	4.8	29	4.8	26	4.8						
58	3.5	53	3.5	48	3.5	43	3.5	[39 cfm at 5.8 psig]																	
69	3.6	66	3.6	63	4.8	60	4.8	57	4.8	54	4.8	51	4.8	49	4.8	46	4.8	43	4.8						
89	4.8	85	4.8	81	4.8	77	4.8	74	6.5	71	6.5	68	6.5	66	6.5	64	6.5	62	6.5						
105	4.6	100	4.6	94	6.2	89	6.2	83	6.2	78	6.2	72	6.2	[69 cfm at 7 psig]											
118	4.8	114	6.5	111	6.5	107	6.5	104	6.5	100	8.8	97	8.8	93	8.8	89	8.8	86	8.8	82	8.8	79	8.8		
137	6.5	133	6.5	130	8.8	126	8.8	122	8.8	118	8.8	115	8.8	111	8.8	107	12	103	12	99	12	96	12		
171	6.5	166	8.5	160	8.5	155	8.5	149	8.5	144	8.5	138	8.5	133	11.5	127	11.5	120	11.5	112	11.5	103	11.5		
184	8.8	179	8.8	174	12	170	12	165	12	161	12	156	12	152	12	147	12	143	12	138	15	134	15		
217	12	211	12	206	12	200	12	194	12	189	12	183	15	177	15	171	15	166	15	160	15	154	15		
274	12	267	15	259	15	251	15	244	15	236	17.7	229	17.7	221	17.7	214	17.7	206	17.7	198	24	191	24		
312	11.5	303	16.8	295	16.8	286	16.8	278	16.8	269	16.8	261	16.8	253	16.8	244	16.8	236	16.8						
337	12	330	15	324	15	317	15	310	17.7	303	17.7	297	17.7	290	17.7	283	24	277	24	270	24	263	24	256	24
629	31	617	31	606	38	594	38	582	38	571	38	559	38												



(●) CL 40 HS three phase motor: 1.55Hp and 2Hp - single phase motor: 1.2Hp and 1.75Hp
(●) CL 420 HS three phase motor: 2.75Hp - single phase motor: 2.35Hp
(●) CL 1R3.5 three phase motor: 1.1Hp - single phase motor: 1.07Hp
(●) CL 2R22 three phase motor: 1.25Hp - single phase motor: 1.75Hp

CL 3.6/01 - CL 4/01 - CL 7/01 - CL 10/01 - CL 15/01 - CL 18/01 - CL 22/01

Blowers



(*) feet position for CL 3.6/01 and CL 4/01 only

Exhausters

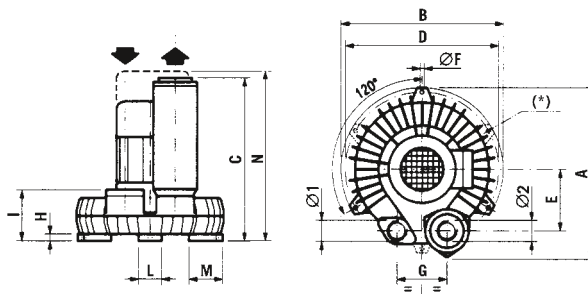
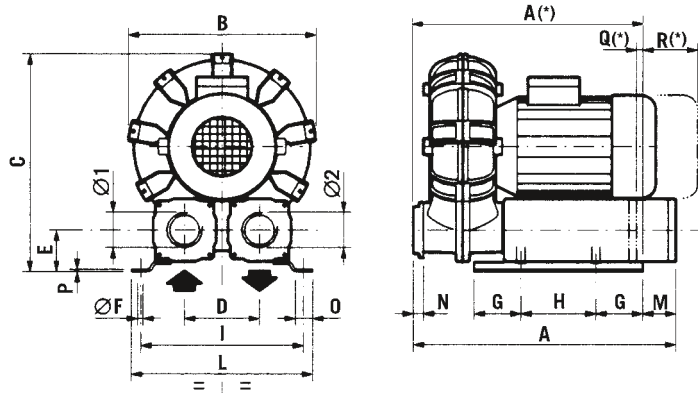


FIG. 1

CL 12/21 - CL 14/21 - CL 17/21 - CL 20/21 - CL 23/21 - CL 30/21 - CL 36/21 - CL 42/21 - CL 49/21
CL 28/1 - CL 34/1 - CL 40/1 - CL 46/1 - CL 60/1 - CL 72/1 - CL 84/1 - CL 98/1



(*) for CL 12/21 - 14/21 - 28/1 only

FIG. 2

CL 2R22 - CL 2R32 - CL 2R42

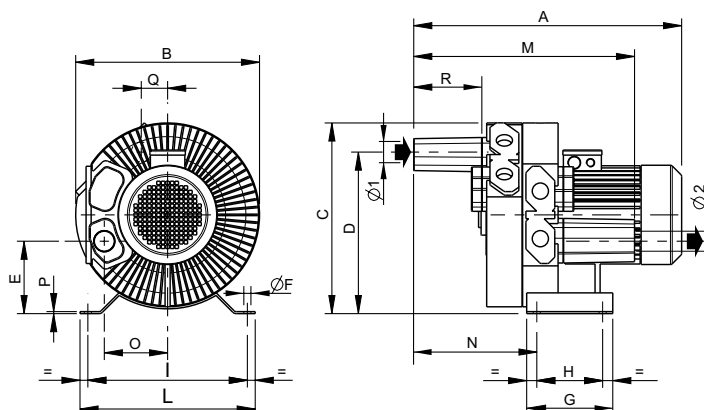


FIG. 3

Dimensions

Machine Type	Reference figure	A	B	C	D	E	ØF	G	H	I	L	M	N	O	P	Q	R	NPT		Weight [lb]	
																		female thread ports			
																		inlet Ø1	outlet Ø2		
CL 3.6/01	Fig. 1	11.42	12.2	10.91	11.42	4.53	0.39	2.64	0.63	3.58	2.17	2.76							1"	1"	24
CL 4/01	Fig. 1	11.42	12.2	10.91	11.42	4.53	0.39	2.64	0.63	3.58	2.17	2.76	12.4						1"	1"	26
CL 7/01	Fig. 1	13.39	14.17	13.5	13.39	4.92	0.39	4.33	0.63	4.33	2.17	2.76							1" 1/4	1" 1/4	37
CL 10/01	Fig. 1	15.94	15.35	15.08	14.57	5.71	0.39	4.69	0.63	4.65	2.17	2.76							1" 1/2	1" 1/2	51
CL 15/01	Fig. 1	17.6	16.73	15.55	15.94	6.69	0.39	5.12	0.63	5.12	2.17	2.76							2"	2"	66
CL 18/01	Fig. 1	19.88	17.72	19.13	16.93	7.95	0.39	5.83	0.63	6.54	2.17	2.76							2" 1/2	2" 1/2	95
CL 22/01	Fig. 1	21.06	19.09	19.76	18.31	8.5	0.39	6.69	0.63	7.17	2.17	2.76							2" 1/2	2" 1/2	115
CL 28/1	Fig. 2	17.56	14.57	17.52	5.51	3.35	0.35	3.94	6.3	12.2	13.78	-	0.83	1.38	0.2	0.04	1.77		2" 1/2	2" 1/2	106
CL 34/1	Fig. 2	22.05	15.75	18.5	6.3	3.54	0.35	3.94	6.3	13.66	15.24	2.76	0.87	1.38	0.2				2" 1/2	2" 1/2	146
CL 40/1	Fig. 2	21.65	16.38	19.29	6.3	3.54	0.35	3.94	6.3	13.66	15.24	2.76	0.87	1.38	0.2				3"	3"	170
CL 46/1	Fig. 2	26.77	17.32	20.47	7.09	3.82	0.43	2.36	12.99	15.75	17.72	4.72	0.87	1.77	0.2				3"	3"	205
CL 60/1	Fig. 2	27.56	17.32	20.47	7.09	3.82	0.43	2.36	12.99	15.75	17.72	4.72	0.87	1.77	0.2				3"	3"	227
CL 72/1	Fig. 2	28.94	18.35	22.05	7.09	4.21	0.43	2.36	12.99	16.54	18.5	7.28	0.67	1.77	0.2				4"	4"	225
CL 84/1	Fig. 2	30.12	19.88	24.21	7.09	4.21	0.43	2.36	12.99	16.54	18.5	7.28	0.67	1.77	0.2				4"	4"	247
CL 98/1	Fig. 2	29.53	20.94	25.2	7.09	4.21	0.43	2.36	12.99	16.54	18.5	7.28	0.67	1.77	0.2				4"	4"	265
CL 2R22	Fig. 3	18.46	12.32	12.83	10.71	5.04	0.55	6.1	4.13	10.24	11.73	16.77	9.49	4.13	0.16	1.69	5.31		1" 1/4	1" 1/4	53
CL 2R32	Fig. 3	19.49	13.03	13.58	11.46	5.12	0.55	6.1	4.13	11.42	12.8	16.97	9.57	4.49	0.16	1.85	5.31		1" 1/4	1" 1/4	64
CL 2R42	Fig. 3	20.83	14.29	14.84	12.56	5.63	0.55	6.69	5.12	12.40	13.62	17.17	9.57	4.92	0.16	2.05	5.31		1" 1/4	1" 1/4	86
CL 12/21	Fig. 2	17.32	13.78	16.54	5.12	3.11	0.35	3.94	6.3	11.34	12.91	-	0.75	1.38	0.2	0.24	1.57		1" 1/2	1" 1/2	93
CL 14/21	Fig. 2	17.52	14.57	17.32	5.12	3.11	0.35	3.94	6.3	11.34	12.91	-	0.75	1.38	0.2	0.24	1.57		2"	2"	93
CL 17/21	Fig. 2	22.05	15.75	18.5	6.3	3.54	0.35	3.94	6.3	13.66	15.24	2.76	0.87	1.38	0.2				2" 1/2	2" 1/2	119
CL 20/21	Fig. 2	21.65	16.38	19.29	6.3	3.54	0.35	3.94	6.3	13.66	15.24	2.76	0.87	1.38	0.2				2" 1/2	2" 1/2	146
CL 23/21	Fig. 2	23.23	17.32	20.28	6.3	3.54	0.35	3.94	6.3	13.66	15.24	2.76	0.87	1.38	0.2				2" 1/2	2" 1/2	181
CL 30/21	Fig. 2	27.56	17.32	20.47	7.09	3.82	0.43	2.36	12.99	15.75	17.72	4.72	0.87	1.77	0.2				3"	3"	194
CL 36/21	Fig. 2	26.57	18.35	21.65	7.09	3.82	0.43	2.36	12.99	15.75	17.72	4.72	0.87	1.77	0.2				3"	3"	198
CL 42/21	Fig. 2	30.12	19.88	24.21	7.09	4.21	0.43	2.36	12.99	16.54	18.5	7.28	0.67	1.77	0.2				3"	3"	234
CL 49/21	Fig. 2	29.53	20.94	25.2	7.09	4.21	0.43	2.36	12.99	16.54	18.5	7.28	0.67	1.77	0.2				4"	4"	247
TBT/M	Fig. 4	28.54	21.89	44.09	8.66	32.87	0.63	0.98	15.43	11.81	15.75	2.56	5.51	1.97	0.31	3.94	52.17		4"	4"	485

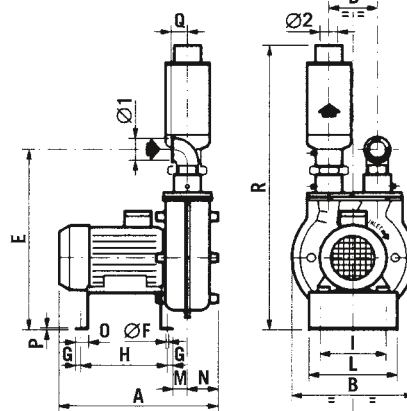
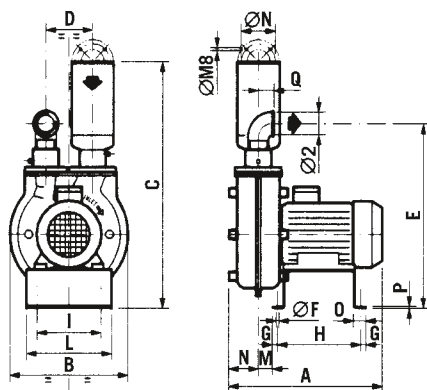
Dimensions [in]
Weights shown are for the machines fitted with the largest motor power

TBT / M

Blowers

FIG. 4

Exhausters



CL 20 HS - CL 30-Z HS - CL 40 HS - CL 50 HS - CL 60 HS - CL 80-Z HS - CL 1R2.5 - CL 1R3.5 - CL 1R5.5

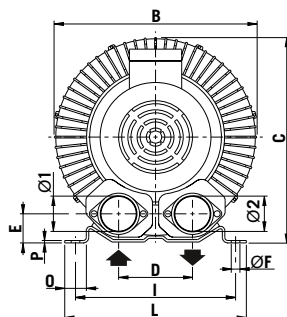
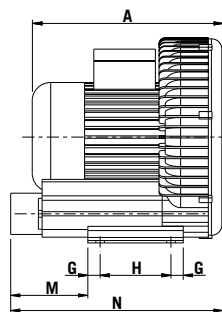
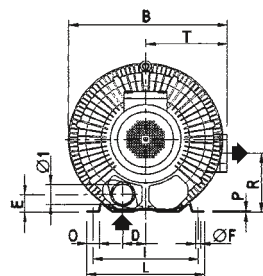
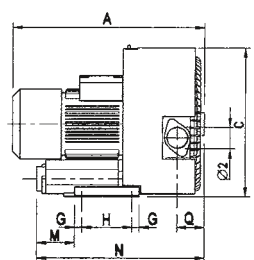


FIG. 5

CL 220 HS - CL 420 HS - CL 520 HS - CL 720 HS (only 3kW - 4,3kW) - CL 2R8 (only 7,5kW)

Blowers



Exhausters

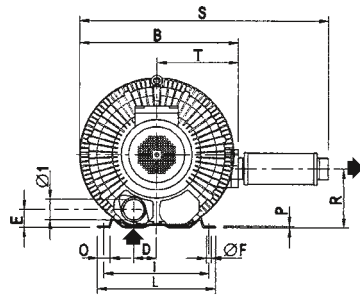
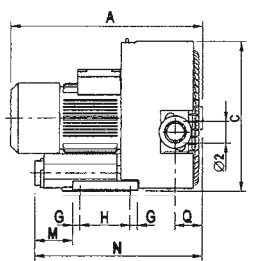
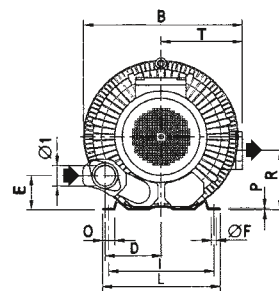
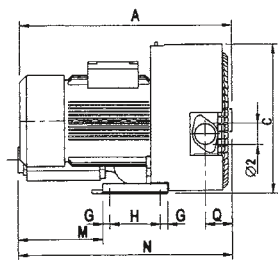


FIG. 6

CL 720 HS (only 5,5kW - 7,5kW) - CL 2R8 (only 11kW)

Blowers



Exhausters

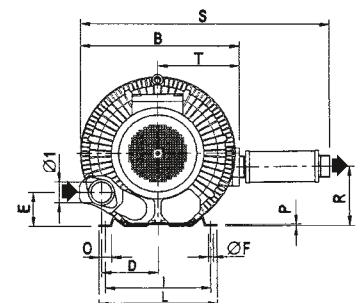
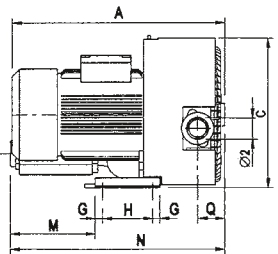


FIG. 7

Machine Type	Reference figure	A	B	C	D	E	ØF	G	H	I	L	M	N	O	P	Q	R	S	T	female thread ports (*)		Weight [lb]	
																				inlet Ø1	outlet Ø2		
CL 20 HS	Fig. 5	10.04	8.98	9.25	3.54	1.38	0.39	0.47	2.99	7.48	8.35	2.87	8.58	1.57	0.51						1"	1"	23
CL 1R2.5	Fig. 5	9.65	7.48	8.19	2.76	1.18	0.33	0.41	3.15	6.1	6.77	2.15	7.78	0.63	0.08						1"	1"	14
CL 30-Z HS	Fig. 5	10.04	9.69	9.72	3.54	1.54	0.39	0.49	3.27	8.07	8.62	2.13	8.98	0.79	0.1						1" 1/4	1" 1/4	30
CL 1R3.5	Fig. 5	10.04	10.24	10.24	3.54	1.57	0.39	0.53	3.19	8.07	9.13	2.64	9.45	0.79	0.1						1" 1/4	1" 1/4	31
CL 40 HS	Fig. 5	10.63	11.26	12.01	4.53	1.77	0.47	0.69	3.74	8.86	10.04	1.89	9.45	1.18	0.12						1" 1/2	1" 1/2	40
CL 50 HS	Fig. 5	12.4	13.11	13.19	4.72	1.89	0.55	0.79	4.53	10.24	11.61	4.92	13.58	1.18	0.16						2"	2"	57
CL 1R5.5	Fig. 5	13.98	13.78	14.17	4.72	2.17	0.59	0.79	5.51	11.42	12.99	2.56	12.4	1.18	0.18						2"	2"	60
CL 60 HS	Fig. 5	15.55	15.04	15.16	4.92	1.77	0.59	0.79	5.51	11.42	12.8	4.33	14.96	1.18	0.18						2"	2"	91
CL 80-Z HS	Fig. 5	18.78	17.76	20.04	5.98	2.56	0.59	0.93	6.69	14.02	15.51	4.49	18.19	1.38	0.24						2" 1/2	2" 1/2	150
CL 1R9	Fig. 8	24.06	21.65	22.4	4.07	3.62	0.59	3.5	20.98	14.17	16.34	0.67	25.35	2.76	0.83						4"	4"	278
CL 220 HS	Fig. 6	12.6	12.4	10.63	1.77	1.54	0.39	0.49	3.27	8.07	9.06	2.48	11.38	0.98	0.1	2.09	4.17	21.26	6.81		1" 1/4	1" 1/4	31
CL 420 HS	Fig. 6	15.75	13.98	12.4	2.28	1.81	0.47	0.65	3.74	8.86	10.08	2.01	12.36	1.18	0.12	1.77	6.06	22.44	7.68		1" 1/2	1" 1/2	60
CL 520 HS	Fig. 6	19.69	16.14	14.61	2.36	1.89	0.55	0.79	4.53	10.24	11.61	3.82	15.91	1.57	0.16	2.2	5.67	25.39	8.82		2"	2"	95
CL 720 HS (3-4,3 kW)	Fig. 6	20.94	17.13	16.69	2.48	1.97	0.55	0.79	5.51	11.42	12.8	3.39	17.76	1.89	0.18	2.99	6.46	26.97	10.12		2"	2"	117
CL 720 HS (7.4-8.5-10-11.5 HP)	Fig. 7	23.23	17.13	16.69	6.06	3.7	0.55	0.79	5.51	11.42	12.8	8.86	23.43	1.89	0.18	2.99	6.46	26.97	10.12		2"	2"	170
CL 2R8 (10-11.5 HP)	Fig. 6	23.39	21.61	19.29	2.99	2.56	0.59	0.93	6.69	14.02	15.51	4.57	21.69	1.77	0.24	3.5	7.83	31.3	11.77		2" 1/2	2" 1/2	187
CL 2R8 (15-16.8 HP)	Fig. 7	23.39	21.61	19.29	6.77	4.13	0.59	0.93	6.69	14.02	15.51	13.74	29.92	1.77	0.24	3.5	7.83	31.3	11.77		2" 1/2	2" 1/2	227
CL 2R9	Fig. 9	31.97	25.91	23.94	4.07	3.62	0.59	9.06	20.98	14.17	16.34	-	30.94	2.76	0.83	4.45	9.29	44.37	13.78		4"	4"	465

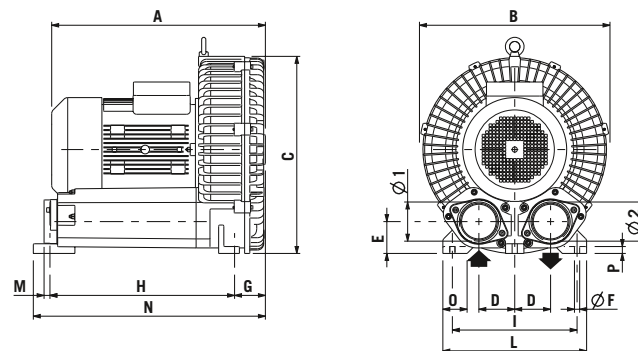
(*) NPT for CL 1R and CL 2R - NPSC for machines with HS suffix

Dimensions [in]
Weights shown are for the machines fitted with the largest motor power

CL 1R9



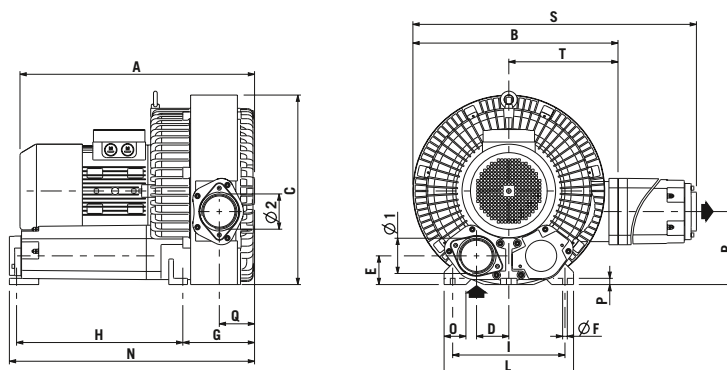
FIG. 8



CL 2R9

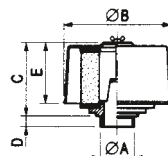


FIG. 9

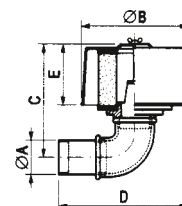


Filters for blowers

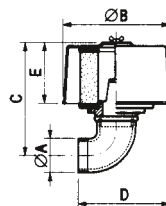
Filters for blowers										
Filter type	Machine type	Ø A	Ø B	C	D	E	Weight	Cartridge type		
		"gas	[in]			[lb]				
F4	CL 3.6/01	1"	3.74	3.9	0.47	3.94	0.18	C4...(●)		
	CL 4/01									
F5	CL 7/01	1" 1/4	5.91	4.17	0.59	3.43	0.41	C6...(●)		
F6	CL 10/01	1" 1/2	5.91	4.17	0.59	3.43	0.41	C6...(●)		
F7	CL 15/01	2"	7.48	6.57	0.71	5.71	0.68	C8...(●)		
F8	CL 18/01	2" 1/2	7.48	6.57	0.71	5.71	0.73	C8...(●)		
	CL 22/01									
F4NG	CL 20 HS	1"	3.74	5.47	6.89	3.94	0.32	C4...(●)		
	CL 1R2.5									
F5NG	CL 30-Z HS	1" 1/4	5.91	6.02	8.07	3.43	0.64	C6...(●)		
	CL 1R3.5									
	CL 220 HS									
F6NG	CL 40 HS	1" 1/2	5.91	6.22	9.25	3.43	0.68	C6...(●)		
F7NG	CL 50 HS	2"	7.48	8.94	9.37	5.71	1.13	C8...(●)		
	CL 1R5.5									
	CL 60 HS									
F7NGR	CL 420 HS	1" 1/2	7.48	8.82	12.99	5.71	1.13	C8...(●)		
F8NGR	CL 520 HS	2"	7.48	9.25	13.39	5.71	1.5	C8...(●)		
F10NGR7	CL 720 HS (4-4.6-5.8-6.5Hp)	2"	9.84	11.97	14.96	7.48	2	C10...(●)		
	CL 720 HS (7.4-8.5-10-11.5Hp)				11.02		1.81			
F10NGR8	CL 80-Z HS	2" 1/2	9.84	12.09	12	7.48	2.09	C10...(●)		
	CL 2R8									
F14NG	CL 1R9	4"	14.88	15.55	18.11	11.73	4.54	C14...(●)		
	CL 2R9									
F5G	CL 2R22	1" 1/4	5.91	6.02	5.31	3.43	0.5	C6...(●)		
	CL 2R32									
	CL 2R42									
F8/1G	CL 12/21	-	7.48	9.49	10.28	5.71	0.91	C8...(●)		
	CL 14/21			9.61	10.63		1			
	CL 17/21									
	CL 20/21			9.49	10.67		0.91			
	CL 23/21									
	CL 28/1			9.61	10.63		1			
F10/1G	CL 30/21	-	9.84	11.97	12.83	7.48	1.09	C10...(●)		
	CL 36/21			12.09	11.81					
	CL 40/1									
	CL 46/1			11.97	12.83					
	CL 60/1									
F14G	CL 42/21	-	14.88	16.18	12.99	11.73	3.4	C14...(●)		
	CL 49/21									
	CL 72/1									
	CL 84/1									
	CL 98/1									
F14	TBT/M	7.64	14.88	1.06	-	10.67	2.45	C14...(●)		



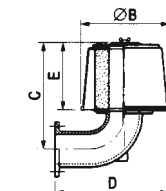
F4 - F5 - F6
F7 - F8



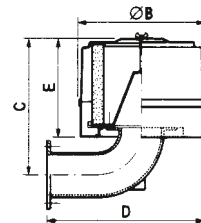
F4NG - F5NG - F6NG
F7NG - F14NG - F7NGR
F8NGR - F10NGR7
F10NGR8



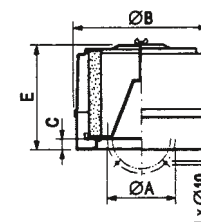
F5G



F8/1G - F10/1G



F14G

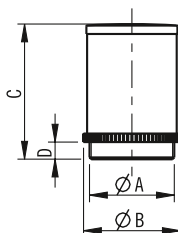


F14



(•) The cartridges are available made in the following versions:

- C... C resin treated paper
- C... P polyester
- C... A antistatic polyester
- C... I stainless steel

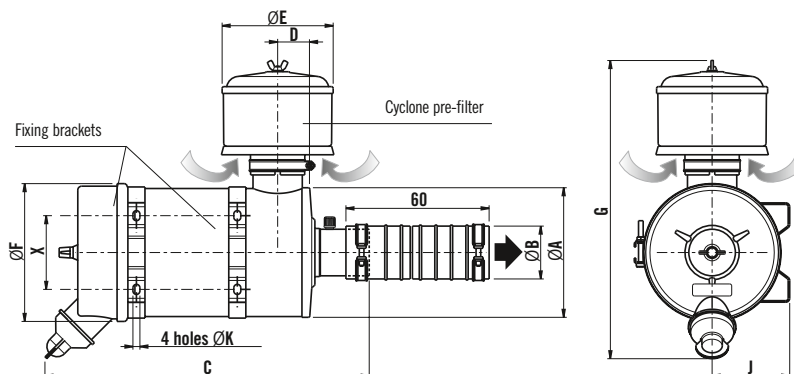


Filtering net and cover in stainless steel (AISI 304)
Threaded connection in Nylon (PA)

Net-filters for blowers

Filter type	Ø A	Ø B	C	D	Weight
	"gas	[in]			[oz]
FR4	1"	1.57	2.28	0.39	0.63
FR5	1" 1/4	1.89	2.68	0.39	0.88
FR6	1" 1/2	2.28	3.11	0.39	1.27
FR7	2"	2.68	3.74	0.47	1.94
FR8	2" 1/2	3.27	3.9	0.59	2.75
FR10	3"	3.94	4.49	0.59	4.44
FR15	4"	5	5.12	0.51	6.07

Two-stage filters for blowers													
Filter type	Machine type	Ø A	Ø B	C	D	Ø E	Ø F	G	X	Ø K	J	Weight	Cartridge type
		[in]										[lb]	
FDS 7/6	CL 12/21 - 14/21	6.5	2.36	16.46	1.65	5.63	7.01	14.57	3.74	0.35	3.94	1.81	CH6
FDS 8	CL 17/21 - 20/21 - 23/21 - 28/1 - 34/1	7.99	2.76	20.39	2.44	10.63	8.46	19.69	4.25	0.35	4.72	2.72	CH8
FDS 10	CL 30/21 - 36/21 - 40/1	10.24	3.5	24.57	2.87	10.63	10.83	20.47	5	0.45	5.75	4.99	CH10
FDS 14/10	CL 42/21 - 46/1 - 60/1	11.81	4.49	20.47	2.87	10.63	12.6	21.46	5.98	0.51	6.89	5.44	CH12
FDS 15/14	CL 49/21 - 72/1 - 84/1	11.81	5	24.41	3.82	12.09	12.44	22.44	5.98	0.51	6.89	6.35	CH15
FDS 17/14	CL 98/1	13.98	5.98	27.44	4.25	12.09	14.69	25.39	7.99	0.51	8.11	9.07	CH17



The two-stage filters, FDS type, are suitable for heavy duty applications in environments with strong presence of dust. Most of the dust contained in the sucked air is separated in a cyclone pre-filter and inside the metal housing of the filter. A resin treated paper cartridge, fitted in the filter housing, shall then retain the remaining finest particles of dust.



Filter service visual and electrical indicators

The filter service indicators signal when maintenance on air filters fitted on blowers must be carried out. Their protection class is IP44.

Visual indicators

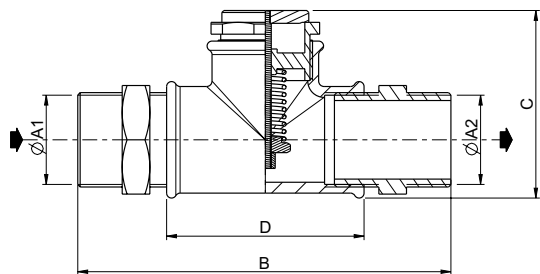


In the visual indicator the filter restriction limit is shown by a bright red flag that pops up behind the full-view window of the indicator. The red flag stays in the alarm position until the manual reset, that is done by pushing on the top of the indicator.

Electrical indicators

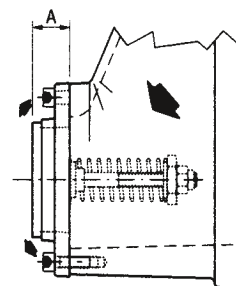


In the electrical indicator, when the filter restriction level reaches the maximum admissible limit, an internal contact commutes and can be used to activate a light or a buzzer. The feeding voltage can be 12 or 24V and the maximum admissible load is 6 Watt.



SV4T - SV5/4T - SV5/6T - SV6T - SV7T
SV8T - SV8/7T - SV8/10T - SV15T

SV7 - SV8 - SV10
SV10D - SV15



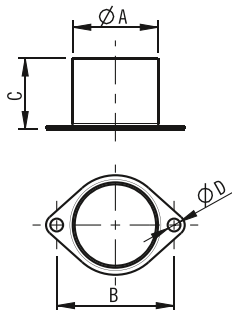
Pressure relief valves for blowers

Valve type	Machine type	Ø A1	Ø A2	B	C	D	Weight
		"gas"	NPT				
SV4T	CL 3.6/01	1"		12.8	3.27	2.99	0.48
	CL 4/01						
SV5/4T	CL 30-Z HS	1" 1/4		5.91	3.62	3.54	0.48
	CL 2R22						
SV5/6T	CL 7/01	1" 1/4		7.48	3.74	3.54	0.79
	CL 1R3.5						
	CL 2R32						
	CL 2R42						
SV6T	CL 10/01	1" 1/2		7.17	3.74	3.94	0.73
	CL 40 HS						
	CL 420 HS						
SV7T	CL 15/01	2"		8.46	4.33	4.57	1.13
	CL 50 HS						
	CL 1R5.5						
	CL 60 HS						
	CL 520 HS						
SV8T	CL 18/01 (2-3-3.6Hp)	2" 1/2		9.65	5.2	5.43	2
	CL 22/01						
	CL 80-Z HS						
SV8/7T	CL 18/01 (4-4.8Hp)	2" 1/2			5.91		2.13
SV8/10T	CL 2R8	2" 1/2		11.81	5.83		3.27
SV15T	CL 1R9	4"		13.07	7.48	7.56	5.03
	TBT/M						
	CL 2R9						



Pressure relief valves for blowers

Valve type	Machine type	A	Weight
		[in]	[lb]
SV7	CL 12/21	1.1	0.27
	CL 14/21		
SV8	CL 28/1	1.14	0.41
	CL 34/1		
	CL 17/21		
	CL 23/21		
SV10D	CL 20/21	1.93	0.59
SV10	CL 40/1	1.1	0.45
	CL 46/1		
	CL 60/1		
	CL 30/21		
	CL 36/21		
SV15	CL 42/21	1.22	0.77
	CL 49/21		
	CL 72/1		
	CL 84/1		
	CL 98/1	1.42	0.91



Flanged connections for flexible pipe

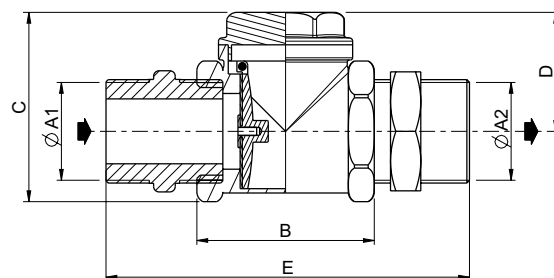
Connection type	Machine type	Ø A	B	C	Ø D	Weight
						[lb]
HF 1	CL 30-Z HS	1.5	2.17-2.52	1.97	0.26	0.08
	CL 1R3.5					
	CL 220 HS					
HF 2	CL 40 HS	2	2.83	1.97	0.26	0.09
	CL 420 HS					
HF 3	CL 50 HS	2.37	3.25	1.97	0.35	0.11
	CL 1R5.5					
	CL 60 HS					
	CL 520 HS					
	CL 720 HS					

Threaded connections for flexible pipe

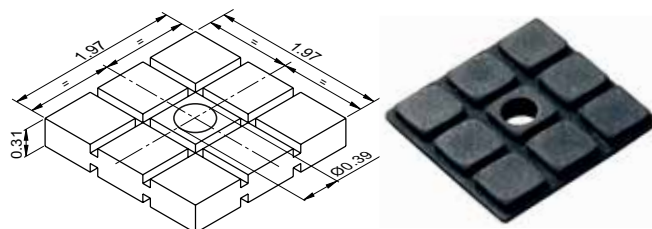
Connection type	Ø A	Ø B	Ø C	Ø D	Weight
	NPT				[lb]
HF 7	2"	1.97	2.36	2.56	0.05
HF 8	2" 1/2	2.52	2.72	3.15	0.09
HF 10	3"	2.76	3.15	3.54	0.18
HF 15	4"	3.54	3.9	4.72	0.27



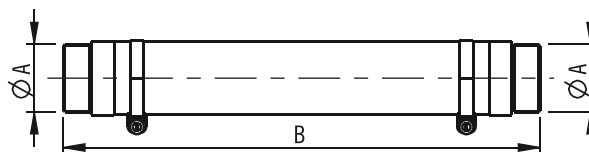
Non return valves								
Valve type	Machine type	Ø A1	Ø A2	B	C	D	E	Weight
		"gas	NPT	[in]				[lb]
VR4	CL 20 HS	1"		2.56	2.56	1.65	4.65	0.36
	CL 1R2.5							
	CL 3.6/01							
	CL 4/01							
VR5	CL 30-Z HS	1" 1/4		2.95	3.07	1.89	5.79	0.5
	CL 7/01							
	CL 1R3.5							
	CL 2R22							
	CL 2R32							
	CL 220 HS							
VR6	CL 2R42	1" 1/2		3.27	3.27	2.05	6.46	0.59
	CL 10/01							
	CL 40 HS							
	CL 10/21							
	CL 12/21							
VR7	CL 420 HS	2"		3.86	3.82	2.32	7.76	0.91
	CL 15/01							
	CL 50 HS							
	CL 1R5.5							
	CL 60 HS							
	CL 14/21							
	CL 520 HS							
	CL 720 HS							
VR8	CL 18/01	2" 1/2		4.61	4.49	2.64	8.86	1.45
	CL 22/01							
	CL 17/21							
	CL 20/21							
	CL 23/21							
	CL 28/1							
	CL 34/1							
	CL 80-Z HS							
VR10	CL 2R8	3"		5.31	5.24	3.07	10.55	2
	CL 30/21							
	CL 36/21							
	CL 42/21							
	CL 40/1							
	CL 46/1							
VR15	CL 60/1	4"		6.46	6.38	3.66	12.28	3.67
	CL 49/21							
	CL 72/1							
	CL 84/1							
	CL 98/1							
	CL 1R9							
	CL 2R9							
	TBT/M							



Nitrile rubber isolation pads



Flexible hoses			
Hose type	Ø A	B	Weight
	NPT or NPSC	[in]	[lb]
FH4	1"	16.5	0.23
FH5	1" 1/4	16.5	0.25
FH6	1" 1/2	16.5	0.25
FH7	2"	16.5	0.27
FH8	2" 1/2	16.5	0.32
FH10	3"	16.5	0.45
FH15	4"	16.5	0.68



TBT BLOWERS AND EXHAUSTERS

The TBT blowers and exhausters are machines with a peripheral toroidal channel, similar to regenerative (or side channel) blowers, but with a revolutionary heliflow impeller and channel developed through long research and testing.

With this impeller and channel design, performances similar to positive displacement machines can be achieved, with none of the associated problems and, indeed, with some added advantages:

- quiet operation (10÷15 dB less than a positive displacement machine);
- vibration free;
- pulsation free;
- oil free;
- low maintenance (inlet filter cleaning and occasional greasing of the bearings only).

Bearing replacement can be carried out without disassembling the machine casing.

In the TBT design, the aspirated gas is forced along the two peripheral channels in parallel, or, by modifying the inlet and outlet porting, one of the channels can be excluded thus obtaining a machine (TBT-HF) with half the flow rate at the same outlet pressure.

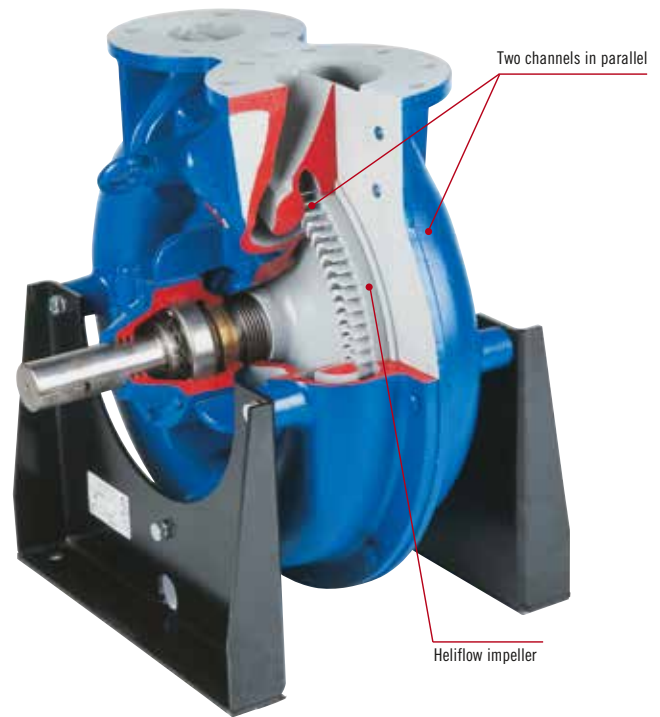
Because of the wide range of permissible operating speeds of rotation (from 2000 to 5500 rpm), a very large operating range can be achieved using a single machine size.

The casing and impeller are made from aluminium alloy and the shaft from alloy steel.

By using different types of shaft sealing, most industrial gases as well as natural and biological gases can be handled.

In the case of corrosive gases, the internal wetted parts can be treated or lined with protective coatings.

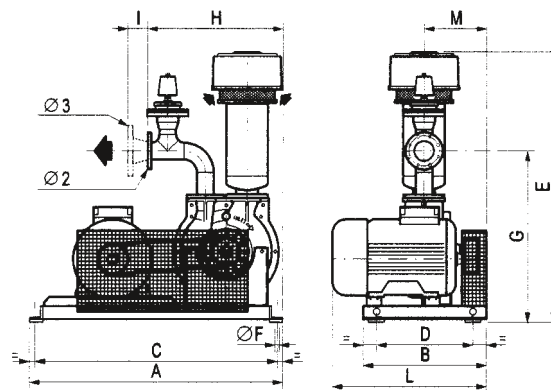
To suit all applications, a complete range of accessories is available, such as: filters, silencers, flexible hoses, non return valves, pressure and vacuum relief valves, manual and automatic cut-off valves, pressure gauges, thermometers, vacuum gauges, temperature switches, pressure switches, acoustic enclosures.



TBT blower - dimensions



Note:
Also manufactured in conformity to the requirements of the European Directive 2014/34/EU (ATEX) for Zones 1 and 2, 21 and 22.
IECEx electric motors can be supplied upon request.

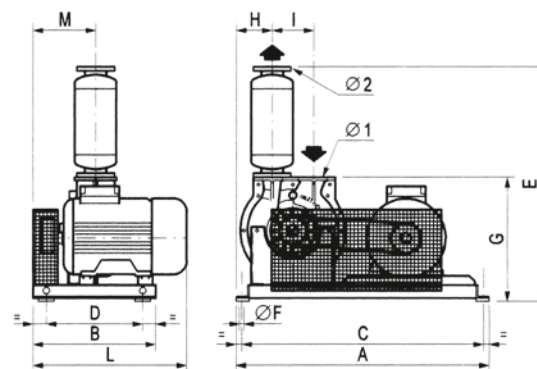


Motor power [Hp]	Motor poles	Dimensions [in]											Flanged connections		Weight
		A	B	C	D	E	Ø F	G	H	I	L	M	outlet Ø 2	outlet Ø 3	[lb]
11	2 or 4	52.76	25.59	50.39	20.08	56.3	0.79	35.43	21.65	5.31	26.38	12.99	For flow rates ≤ 350 cfm 3" 150# ANSI	For flow rates > 350 cfm 5" 150# ANSI	849
15	2										26.38				871
	4										27.36				893
18,5	2 or 4										27.56				915
22	2										27.76				959
	4										29.13				992
30	2 or 4										32.28				1091
37	2										32.28				1146
	4	33.86	1179												
45	2	33.86	1235												
	4	34.84	1246												
55	2 or 4	53.15	31.5	45.38	29.53	58.27		37.4	24.8		37.4				1653
75	2 or4										45.28				1874

TBT exhauster - dimensions



Note:
Also manufactured in conformity to the requirements of the European Directive 2014/34/EU (ATEX) for Zones 1 and 2, 21 and 22.
IECEx electric motors can be supplied upon request.

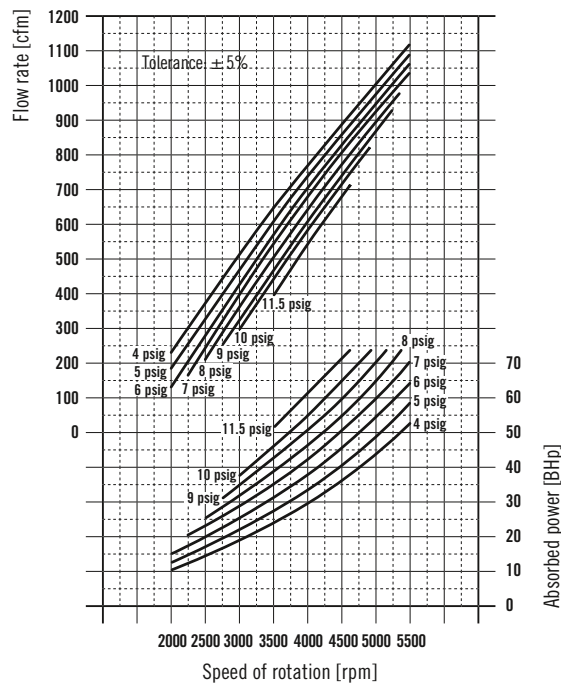


Motor power [Hp]	Motor poles	Dimensions [in]											Flanged connections		Weight
		A	B	C	D	E	Ø F	G	H	I	L	M	inlet Ø 1	outlet Ø 2	[lb]
11	2 or 4	52.76	25.59	50.39	20.08	48.82	0.79	25.59	7.48	8.66	26.38	12.99	4" flange matches 150# ANSI	3" 150# ANSI	
15	2										26.38				794
	4										27.36				805
18,5	2 or 4										27.56				838
22	2										27.76				882
	4										29.13				915
30	2 or 4										32.28				1014
37	2										32.28				1069
	4	33.86	1102												
45	2	53.15	31.5	45.28	29.53	50.79		27.56	4.33		33.86				1157
	4										34.84				1168

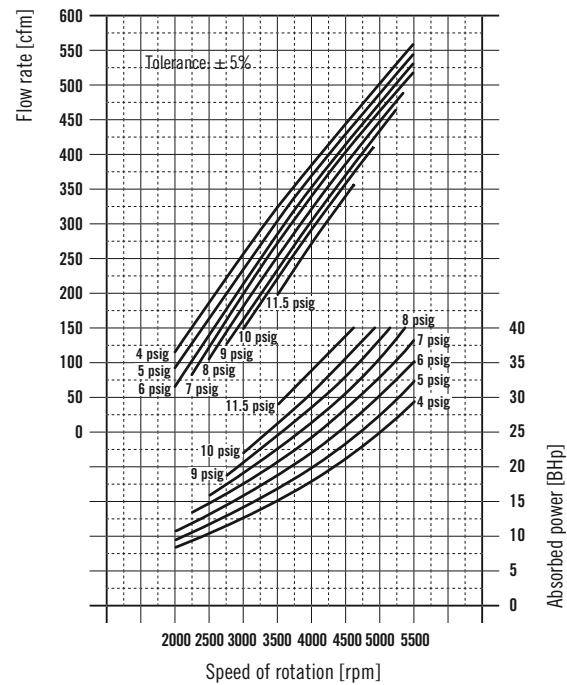
TBT blower

The diagrams values refer to air at 68°F and 29.92 inHg (abs) at blower inlet port.

TBT
(two operating channels)



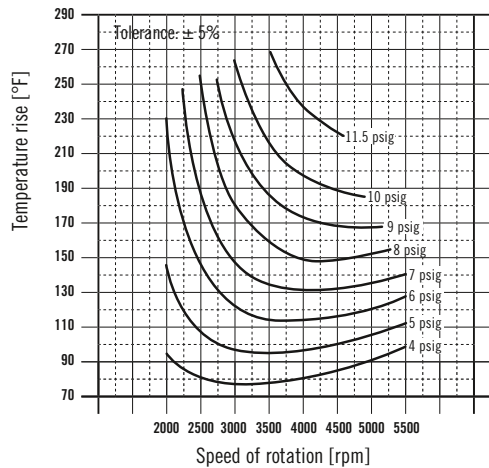
TBT-HF
(only one operating channel)



Note:

Also manufactured in conformity to the requirements of the European Directive 2014/34/EU (ATEX) for Zones 1 and 2, 21 and 22.

IECEx electric motors can be supplied upon request.



Sound level dB(A) at 3.5 ft								
Speed of rotation [rpm]	Outlet pressure [psig]							
	1.5	3	4	5.5	7	8.5	10	11.5
2000	75	75	75	76				
2500	76	76	76	77	78			
3000	79	79	80	81	82	83	84	
3500	80	80	81	82	82	84	85	86
4000	81	82	83	84	84	85	87	88
4500	82	83	84	85	86	87	88	89
5000	83	84	85	86	87	88	89	
5500	85	86	87	88	89			

The noise level is intended as sound pressure level (SPL), measured in free field, in accordance with the Standard EN ISO 2151.

Tolerance on sound level values: ± 3 dB(A).

The sound levels are for blowers with 2 pole motor. With 4 pole motor the sound level can even be lower.

TBT blower with two operating channels - Performance table

Outlet pressure [psig]	[rpm]	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500
4	Q [cfm]	226	297	367	437	504	572	637	700	762	824	884	943	1002	1058	1114
	Δt [°F]	94	84	80	78	76	76	77	79	81	83	85	87	88	92	98
	N [BHp]	10.2	12.2	14.2	16.4	18.8	21.3	23.8	26.6	29.4	32.6	35.8	39.6	42.8	46.8	52.5
5	Q [cfm]	177	253	326	398	467	537	602	668	729	791	856	915	974	1030	1085
	Δt [°F]	145	118	107	101	95	95	94	95	96	98	99	101	103	107	112
	N [BHp]	12,3	14,6	16,8	19,2	21,8	24,4	27,3	30,3	33,6	37,2	41	44,8	47,8	52,6	58,4
6	Q [cfm]	128	209	286	360	431	501	567	636	698	762	827	886	948	1004	1061
	Δt [°F]	229	174	143	130	119	115	114	113	112	113	114	116	119	122	127
	N [BHp]	14.9	17.2	19.7	22.2	24.9	27.8	30.9	34.3	37.9	41.8	45.6	49.7	53.5	58.6	64.5
6.5	Q [cfm]		187	266	340	413	484	551	620	683	748	813	872	934	992	1048
	Δt [°F]		209	164	145	132	125	124	122	120	121	122	124	127	129	133
	N [BHp]		18.7	21.2	23.7	26.5	29.6	32.8	36.3	40	44	48.1	52.4	56.2	61.6	67.4
7	Q [cfm]		165	246	321	395	467	535	605	669	734	799	859	921	980	1036
	Δt [°F]		246	191	163	147	138	134	131	129	130	130	132	135	137	140
	N [BHp]		20.2	22.7	25.3	28	31.1	34.7	38.3	42.1	46.2	50.7	54.9	59	64.5	70.4
7.5	Q [cfm]		143	226	304	377	450	519	589	654	720	785	847	909	968	1023
	Δt [°F]		286	222	183	163	151	146	141	138	139	139	141	143	145	147
	N [BHp]		21.6	24.2	26.8	29.6	32.8	36.6	40.3	44.2	48.5	53	57.6	61.8	67.5	73.4
8	Q [cfm]			206	287	361	432	503	573	640	706	771	834	897	956	
	Δt [°F]			255	204	179	166	159	152	148	148	148	150	151	153	
	N [BHp]			25.6	28.1	31.1	34.6	38.5	42.3	46.4	50.8	55.2	60.1	64.7	70.4	
8.5	Q [cfm]				270	345	416	487	557	625	691	757	821	885	944	
	Δt [°F]				227	196	182	173	164	159	158	158	158	159	161	
	N [BHp]				29.5	32.7	36.5	40.4	44.3	48.5	53	57.6	62.5	67.7	73.4	
9	Q [cfm]				253	329	399	471	541	611	677	743	808	873		
	Δt [°F]				252	216	199	187	177	171	169	168	167	167		
	N [BHp]				30.8	34.3	38.3	42.3	46.3	50.6	55.2	60	65.1	70.7		
9.5	Q [cfm]				237	313	383	455	526	596	663	730	796	861		
	Δt [°F]				277	239	217	202	190	183	180	178	176	176		
	N [BHp]				32.2	35.9	40.1	44.2	48.3	52.7	57.4	62.4	67.7	73.7		
10	Q [cfm]					296	369	439	511	582	649	716	783			
	Δt [°F]					264	237	217	203	196	191	188	185			
	N [BHp]					37.6	41.9	46	50.2	54.8	59.6	64.8	70.2			
10.5	Q [cfm]						352	424	496	567	635	702	770			
	Δt [°F]						259	233	217	209	203	199	194			
	N [BHp]						43.7	47.8	52.2	56.9	61.8	67.2	72.6			
11	Q [cfm]						334	409	482	553	620	689	755			
	Δt [°F]						282	251	232	223	215	210	203			
	N [BHp]						45.5	49.6	54.1	59.1	64.1	69.4	75.1			
11.5	Q [cfm]							394	467	538	606	676				
	Δt [°F]							270	249	237	228	221				
	N [BHp]							51.4	56	61.3	66.5	71.6				

The values shown in the table refer to air at 68°F and 29.92 inHg (abs) at TBT inlet port.

Q: flow rate - Tolerance: ± 5%

Δt: temperature rise - Tolerance : ± 5%

N: absorbed power at TBT blower shaft - Tolerance: ± 5%





"Vesuvio" factory

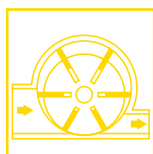


"Fermi" factory

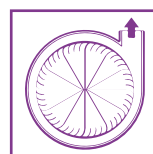


"Cinisello" factory

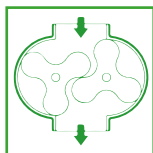
Other MAPRO® products



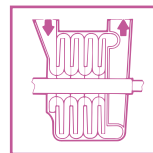
Sliding vane rotary compressors
for air and gases



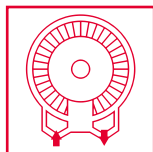
Centrifugal fans
for air and gases



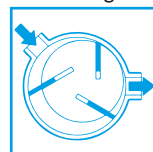
Positive displacement blowers
and exhausters for air



Multistage centrifugal blowers
and exhausters for air and gases



Regenerative blowers and
exhausters for gases



Rotary vane vacuum pumps,
oil recirculating type and oil free



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