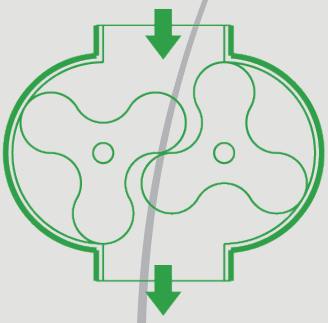
POSITIVE DISPLACEMENT BLOWERS

• ML Series



MAPRO

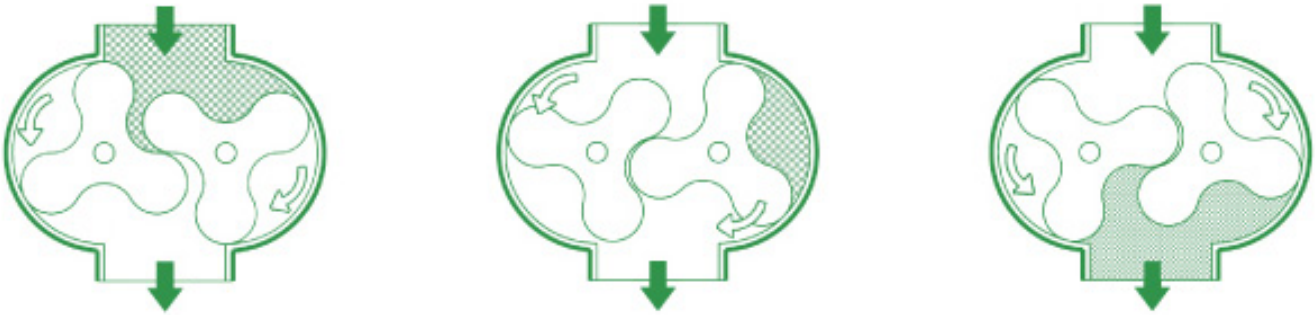
ISO 9001 - Cert. 1835

MAPRO

POSITIVE DISPLACEMENT BLOWERS

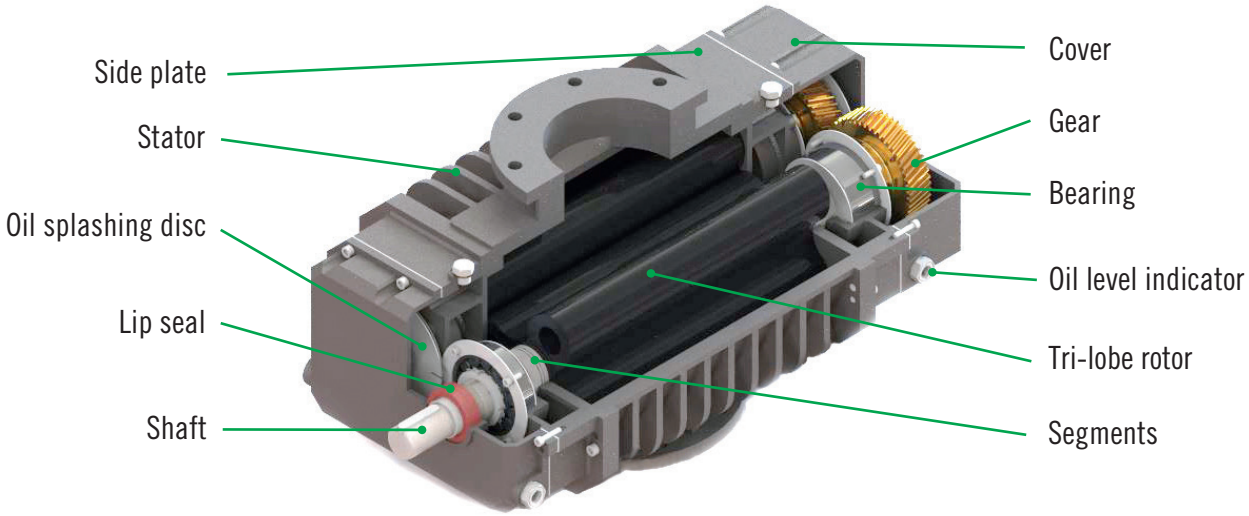
Operating principle

MAPRO® Positive Displacement machines, ML Series, consist basically of a pair of Tri-lobe rotors, mounted on parallel shafts, rotating in opposite directions inside a properly shaped casing closed at the ends by side plates.
The two Tri-lobe rotors are synchronized by a pair of timing gears.
As the rotors rotate, air is drawn into the inlet side of the casing, is moved from the inlet to the outlet side by the free volumes between rotors and stator and finally is forced out of the outlet side against the connected system pressure.
The machines, being positive displacement type, do not develop pressure within the casing but the discharge pressure depends only upon the connected system resistance.



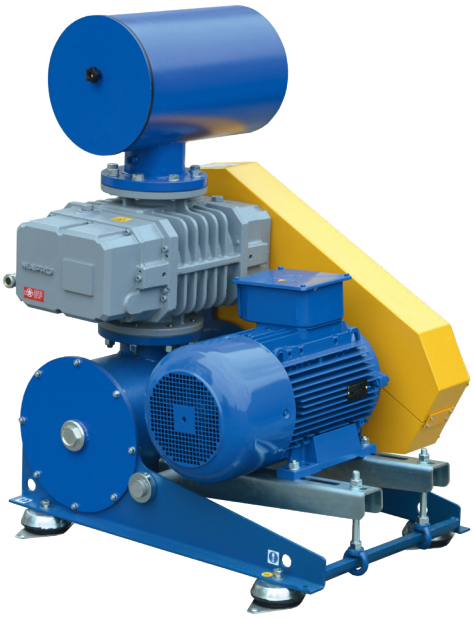
Technical and constructional features of the machine body

- Stators, rotors, side plates and covers are totally made of grey cast iron. The covers of model ML175 are made of aluminum alloy so that to increase the efficiency of the cooling of the lubricating oil;
- shafts are in carbon steel and rotors are shrinked on the shafts;
- the timing gears are helical type with involute profile and made of alloy steel, with hardened and ground teeth;
- sealing of the conveyed gas on the rotor shafts is assured by labyrinth seals and segments;
- bearings and timing gears are lubricated by the oil splashed by disks fitted on the rotor shafts.



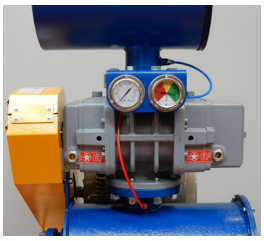
POSITIVE DISPLACEMENT BLOWERS - ML Series

Technical and constructional features of the Packages



Standard Packages

- MAPRO® Positive Displacement Blowers are usually supplied complete with discharge silencer integrated in the supporting baseplate and with inlet silencer built-in into the inlet filter;
- the blowers are always coupled to the electric motor via belt drives; thanks to the hinged motor support the belt drive tensioning is automatic;



- the standard packages are complete with pressure relief valve, non-return valve, antivibration base mounts, outlet flexible hose and safety drive guard;
- on request the packages can be supplied fitted with manometer and filter restriction indicator.

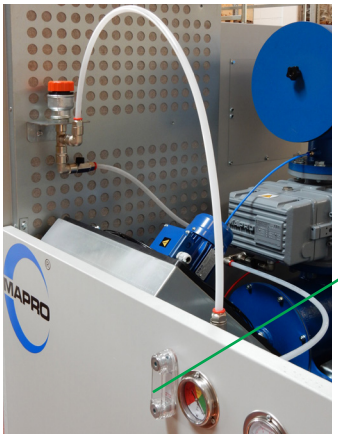
Soundproofed Packages

- The standard packages can be supplied complete with acoustic enclosure;
- the package is fixed on the baseplate of the acoustic enclosure; and besides the enclosure is equipped with air extraction fan, manometer and filter restriction indicator for a quick check of the working conditions of machine;
- on request the soundproofed packages can be supplied fitted with thermometers, and temperature and pressure switches.

Integrated system for the filling and draining of the lubricating oil chambers of soundproofed packages (optional)

The soundproofed packages could be equipped with a system for the filling and draining of the lubricating oil of bearings and timing gears so that to allow:

- to simplify and speed up the necessary operations;
- to monitor the oil level in the bearings and timing gears chambers of the machine body without removing any panel of the acoustic enclosure.



Oil level indicator

MAPRO® Positive Displacement Blowers meet the requirements of the European Directives 2006/42 (Machines), 2014/35 (Low Voltage), 2014/30 (Electromagnetic Compatibility) and of the applicable harmonised Standards.

Application and advantages

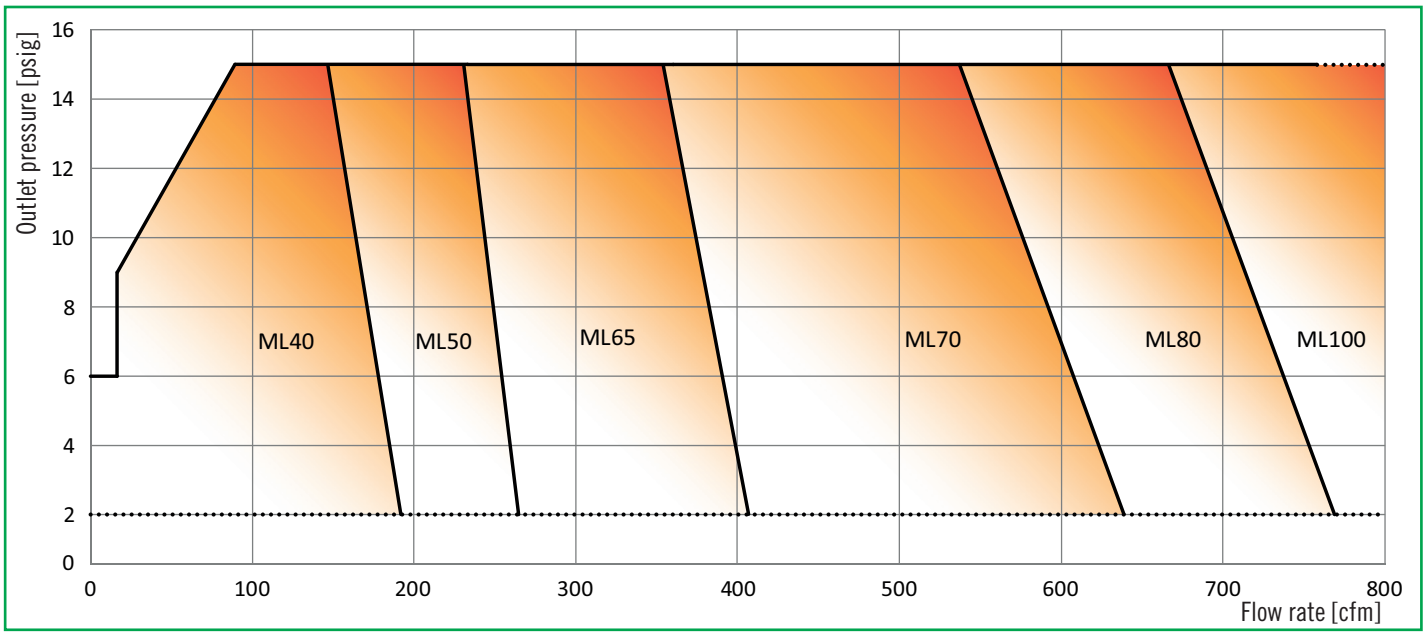
MAPRO® Positive Displacement Blowers are suitable for all those applications requiring considerably higher flow rate than that which can be achieved using side channel blowers and till 2450 cfm, and with discharge pressure till 15 psig.
The most common fields of application are:

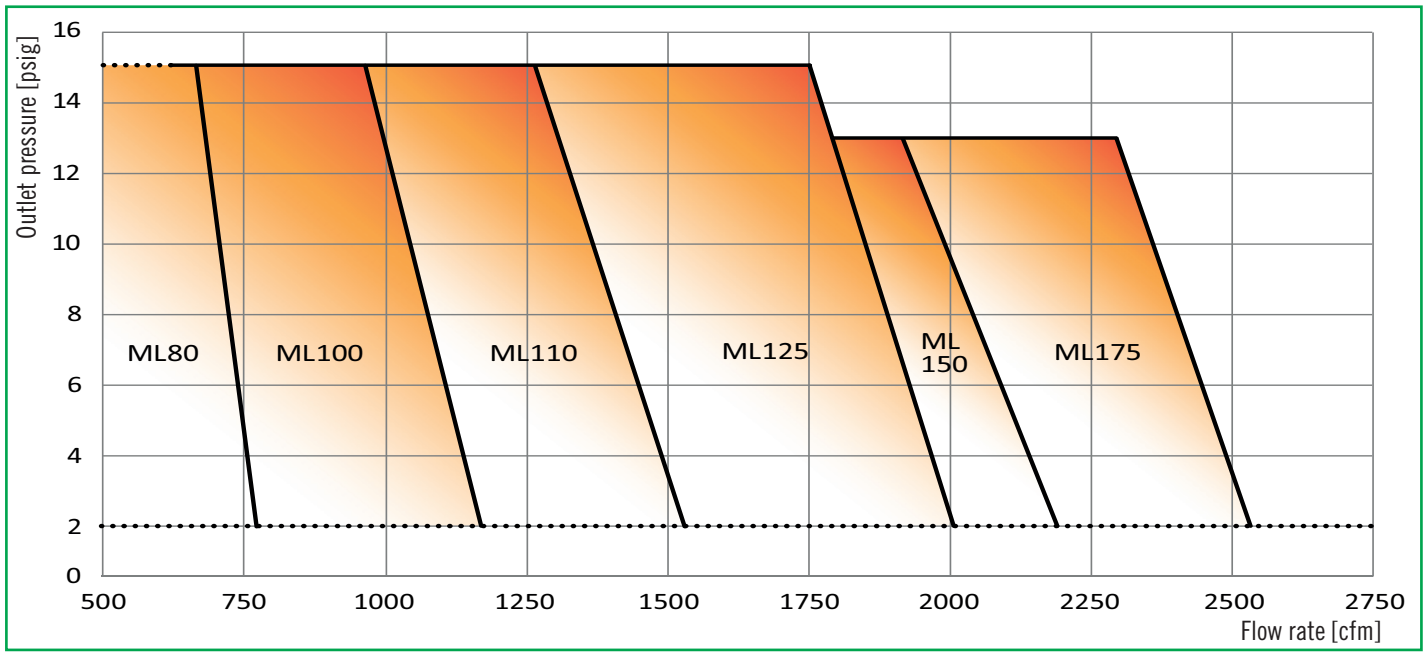
- air injection in the oxidation tanks of the wastewater treatment plants;
- pneumatic conveying;
- air injection in saturated soils to promote biodegradation of the contaminants (Biosparging or Bioventing).

There is no contact of the rotating parts during operation of the Blowers.
There is therefore no friction between the two rotors and between the rotors and the stator and thus no internal lubrication is needed.
The gas moving through the machine remains uncontaminated and completely oil-free.

Range of duty

The diagrams below show, for informational purposes only, the duty range "flow rate – outlet pressure" for the ML Series models, operating as blowers.
The values of the diagrams refer to atmospheric air at the suction conditions of 68°F and 29.92 inHg (abs).
The tables on the next pages give the detailed performance of each blower model.





Performance

Δp [psig]	Blower type			ML 40								ML 50							
	Motor [rpm]			1800				3600				1800				3600			
	Blower [rpm]			1000	1250	1500	2000	2500	3000	3500	4000	1000	1250	1500	2000	2500	3000	3500	4000
3	Q		cfm	32	45	59	86	113	140	168	195	37	56	74	112	149	186	223	260
	Δt		°F	67	60	55	49	47	48	48	47	63	56	51	45	43	44	45	44
	P		BHp	1.1	1.4	1.7	2.2	2.8	3.4	3.9	4.5	1.5	1.8	2.2	3	3.7	4.4	5.2	5.9
	Pmot		Hp	1.5	2	3	3	5	5	5	7.5	2	3	3	5	5	7.5	7.5	7.5
	Lp	s / c	dB (A)	76	77	77	79	80	82	83	85	67	69	71	74	77	81	84	87
		c / c		60	61	61	62	64	65	66	67	59	60	61	63	65	67	70	72
4	Q		cfm	28	42	56	83	110	137	164	191	34	52	71	108	145	182	220	257
	Δt		°F	83	74	67	59	56	57	58	57	88	78	70	60	56	55	56	56
	P		BHp	1.3	1.7	2	2.7	3.3	4	4.6	5.3	1.8	2.2	2.7	3.6	4.5	5.4	6.2	7.1
	Pmot		Hp	2	3	3	5	5	5	7.5	7.5	3	3	5	5	7.5	7.5	10	10
	Lp	s / c	dB (A)	77	78	78	80	81	82	84	85	68	70	71	75	78	81	85	88
		c / c		61	61	62	63	64	65	66	67	60	61	62	64	67	69	72	74
5	Q		cfm	25	39	52	80	107	134	161	188	31	49	68	105	142	179	216	254
	Δt		°F	103	91	83	72	68	68	69	68	114	100	89	75	69	68	68	68
	P		BHp	1.5	1.9	2.3	3.1	3.8	4.6	5.4	6.1	2.1	2.6	3.1	4.2	5.2	6.3	7.3	8.4
	Pmot		Hp	2	3	3	5	5	7.5	7.5	7.5	3	5	5	7.5	7.5	10	10	15
	Lp	s / c	dB (A)	78	79	80	81	82	83	84	85	69	70	72	76	79	83	86	90
		c / c		62	62	63	64	65	66	67	68	61	62	63	66	68	71	73	76
7	Q		cfm	20	33	47	74	101	129	156	183	25	44	62	100	137	174	211	248
	Δt		°F	146	131	119	105	100	100	100	98	165	144	128	106	97	94	94	93
	P		BHp	1.9	2.4	2.9	3.9	4.9	5.8	6.8	7.8	2.7	3.4	4.1	5.4	6.8	8.1	9.5	10.8
	Pmot		Hp	3	3	5	5	7.5	7.5	10	10	5	5	5	7.5	10	10	15	15
	Lp	s / c	dB (A)	79	80	80	81	82	84	85	86	72	73	75	78	82	85	89	92
		c / c		62	63	63	64	65	66	67	69	63	64	65	68	70	73	75	78
8	Q		cfm		31	45	72	99	126	154	181		42	60	97	134	172	209	246
	Δt		°F		154	140	123	117	116	117	115		165	147	124	113	109	109	107
	P		BHp		2.7	3.2	4.3	5.4	6.4	7.5	8.6		3.8	4.5	6	7.5	9.1	10.6	12.1
	Pmot		Hp		5	5	7.5	7.5	10	10	15		5	7.5	7.5	10	15	15	15
	Lp	s / c	dB (A)		80	81	82	83	84	85	86		75	76	80	83	87	90	93
		c / c			64	64	65	66	67	68	69		65	66	69	71	74	76	79
9	Q		cfm			42	70	97	124	151	178			58	95	132	170	207	244
	Δt		°F			161	141	133	133	135	132			167	141	129	124	123	120
	P		BHp			3.5	4.7	5.9	7.1	8.2	9.4			5	6.7	8.3	10	11.7	13.3
	Pmot		Hp			5	7.5	7.5	10	10	15			7.5	10	15	15	15	20
	Lp	s / c	dB (A)			81	82	83	84	85	87			78	81	85	88	91	94
		c / c				65	66	67	68	69	70			67	70	72	75	77	80
11	Q		cfm					93	120	147	174					129	166	203	240
	Δt		°F					170	168	168	164					166	158	155	153
	P		BHp					6.9	8.3	9.7	11					9.9	11.8	13.8	15.8
	Pmot		Hp					10	15	15	15					15	15	20	20
	Lp	s / c	dB (A)					84	86	87	88					88	91	94	97
		c / c						69	70	71	71					76	79	81	83
13 (*)	Q		cfm					89	116	143	170					125	162	199	236
	Δt		°F					203	196	193	194					211	198	191	186
	P		BHp					7.9	9.5	11.1	12.7					11.4	13.7	16	18.3
	Pmot		Hp					10	15	15	20					15	20	20	25
	Lp	s / c	dB (A)					85	87	89	90					91	94	96	99
		c / c						69	70	71	72					79	81	84	87
15 (*)	Q		cfm						113	141	168							196	233
	Δt		°F						216	210	208							211	202
	P		BHp						10.4	12.2	13.9							17.6	20.1
	Pmot		Hp						15	15	20							25	25
	Lp	s / c	dB (A)						84	87	89							96	100
		c / c							71	72	73							84	88

Flow rates refer to air at the Standard suction conditions of 68°F and 29.92 inHg (abs)
Q = flow rate – Tolerance on flow rate values: ± 5%
Δt = temperature increase – Tolerance on Δt: ± 10°F
P = absorbed power at motor shaft – Tolerance on absorbed power: ± 5%
Pmot = electric motor power
Lp = Sound pressure level (SPL), measured in free field, at 3.5 ft distance, in accordance with the Standard EN ISO 2151, without radiating noise of the pipes – Tolerance: ± 2dB(A)
s/c = without acoustic enclosure **c/c** = with acoustic enclosure
(*) = only for non-continuous operation. Please contact our Sales Department for any information.

Performance

Δp [psig]	Blower type			ML 65								ML 70							
	Motor [rpm]			1800				3600				1800				3600			
	Blower [rpm]			1000	1250	1500	2000	2500	3000	3500	4000	1000	1250	1500	2000	2500	3000	3500	4000
3	Q		cfm	60	88	116	172	228	285	341	397	117	159	202	287	372	457	542	627
	Δt		°F	47	47	46	45	44	44	44	44	51	46	42	39	38	40	41	41
	P		BHp	2	2.5	3	4	5	6	7	8	3.4	4.2	5	6.5	8.1	9.6	11.2	12.7
	Pmot		Hp	3	5	5	5	7.5	7.5	10	10	5	7.5	7.5	10	10	15	15	20
	Lp	s / c	dB (A)	63	64	66	70	74	78	81	85	76	77	79	81	84	87	90	92
		c / c		45	47	49	54	59	64	69	74	61	63	65	68	72	76	79	83
4	Q		cfm	54	82	111	167	223	279	336	392	104	147	189	275	360	446	531	616
	Δt		°F	61	60	58	57	56	56	57	57	66	61	57	53	53	54	55	56
	P		BHp	2.5	3.1	3.7	4.9	6.1	7.4	8.6	9.8	4.3	5.2	6.2	8	9.9	11.7	13.6	15.4
	Pmot		Hp	3	5	5	7.5	7.5	10	15	15	7.5	7.5	7.5	10	15	15	20	20
	Lp	s / c	dB (A)	64	65	67	71	75	78	82	86	77	78	79	82	85	87	90	92
		c / c		45	47	50	55	60	64	69	74	62	63	65	69	73	76	80	84
5	Q		cfm	50	78	106	162	219	275	331	388	93	136	179	264	350	436	521	607
	Δt		°F	79	76	73	70	70	70	70	70	87	81	76	70	68	68	69	69
	P		BHp	2.9	3.6	4.4	5.8	7.3	8.8	10.2	11.7	5.1	6.2	7.3	9.5	11.7	13.9	16.1	18.3
	Pmot		Hp	5	5	7.5	7.5	10	15	15	15	7.5	7.5	10	15	15	20	20	25
	Lp	s / c	dB (A)	64	66	68	72	76	79	83	87	77	79	80	82	85	88	90	93
		c / c		45	48	50	55	60	65	70	75	62	64	66	69	73	77	81	84
7	Q		cfm	42	70	98	155	211	267	324	380	75	118	161	247	333	419	505	591
	Δt		°F	123	115	109	101	98	98	98	97	135	124	116	104	98	97	98	98
	P		BHp	3.9	4.8	5.8	7.7	9.6	11.6	13.5	15.4	6.3	7.8	9.3	12.3	15.3	18.3	21.2	24.2
	Pmot		Hp	5	7.5	7.5	10	15	15	20	20	10	10	15	15	20	25	30	30
	Lp	s / c	dB (A)	65	67	69	73	77	81	85	88	78	80	81	83	86	89	91	94
		c / c		46	48	51	56	61	65	70	75	63	65	67	70	74	78	82	85
8	Q		cfm	39	67	95	152	208	264	320	377	66	109	153	239	325	412	498	585
	Δt		°F	155	142	132	119	113	113	113	112	167	150	136	119	112	111	112	112
	P		BHp	4.3	5.4	6.5	8.6	10.8	12.9	15.1	17.2	7	8.7	10.4	13.7	17.1	20.5	23.8	27.2
	Pmot		Hp	7.5	7.5	10	15	15	20	20	25	10	15	15	20	25	25	30	40
	Lp	s / c	dB (A)	66	68	70	74	78	82	85	89	79	80	82	84	87	90	92	95
		c / c		46	48	51	56	61	66	71	76	63	65	67	71	75	78	82	86
9	Q		cfm			92	148	205	261	317	374		101	144	231	318	404	491	578
	Δt		°F			156	137	129	128	129	127		178	159	135	125	125	127	126
	P		BHp			7.2	9.5	11.9	14.3	16.7	19.1		9.6	11.5	15.2	19	22.7	26.5	30.2
	Pmot		Hp			10	15	15	20	25	25		15	15	20	25	30	40	40
	Lp	s / c	dB (A)			71	75	79	83	87	90		80	81	84	87	90	93	96
		c / c				52	57	62	67	71	76		65	67	70	74	78	82	86
11	Q		cfm					199	255	311	368				214	301	387	474	561
	Δt		°F					160	158	159	156				173	157	155	159	157
	P		BHp					14.3	17.1	20	22.8				18.1	22.6	27.1	31.6	36.1
	Pmot		Hp					20	25	25	30				25	30	40	40	50
	Lp	s / c	dB (A)					84	87	89	92				84	87	90	93	96
		c / c						68	71	75	78				69	73	76	80	84
13 (*)	Q		cfm						250	306	363					284	371	458	545
	Δt		°F						187	187	186					196	189	188	187
	P		BHp						19.9	23.2	26.5					26.9	31.7	36.5	41.2
	Pmot		Hp						25	30	40					40	40	50	50
	Lp	s / c	dB (A)						86	89	92					90	93	96	99
		c / c							71	73	75					77	80	82	84
15 (*)	Q		cfm						245	302	358					274	361	448	535
	Δt		°F						209	205	205					214	209	208	207
	P		BHp						21.9	25.6	29.3					28	33.5	39	44.5
	Pmot		Hp						30	40	40					40	50	50	60
	Lp	s / c	dB (A)						90	92	95					90	93	97	100
		c / c							79	78	78					82	83	85	86

Flow rates refer to air at the Standard suction conditions of 68°F and 29.92 inHg (abs)
Q = flow rate – Tolerance on flow rate values: ± 5%
Δt = temperature increase – Tolerance on Δt: ± 10°F
P = absorbed power at motor shaft – Tolerance on absorbed power: ± 5%
Pmot = electric motor power
Lp = Sound pressure level (SPL), measured in free field, at 3.5 ft distance, in accordance with the Standard EN ISO 2151, without radiating noise of the pipes – Tolerance: ± 2dB(A)
s/c = without acoustic enclosure **c/c** = with acoustic enclosure
(*) = only for non-continuous operation. Please contact our Sales Department for any information.

Performance

Δp [psig]	Blower type			ML 80								ML 100							
	Motor [rpm]			1800				3600				1800				3600			
	Blower [rpm]			1000	1250	1500	2000	2500	3000	3500	4000	1000	1250	1500	2000	2500	3000	3500	4000
3	Q		cfm	123	176	228	333	438	543	648	753	168	246	325	481	637	794	950	1107
	Δt		°F	45	44	43	42	42	42	42	42	50	49	48	46	45	45	45	44
	P		BHp	3.4	4.3	5.2	6.9	8.6	10.3	12.1	13.8	4.6	5.7	6.9	9.2	11.4	13.7	16	18.3
	Pmot		Hp	5	7.5	7.5	10	15	15	15	20	7.5	7.5	10	15	15	20	20	25
	Lp	s / c	dB (A)	68	70	72	75	79	83	86	90	85	86	87	88	90	92	93	95
		c / c		67	68	68	70	71	73	74	75	70	70	71	72	73	74	75	76
4	Q		cfm	113	165	218	323	427	532	637	742	153	231	309	464	620	775	931	1086
	Δt		°F	67	65	63	61	61	60	61	60	65	63	62	60	60	60	60	60
	P		BHp	4.4	5.5	6.5	8.7	10.8	12.9	15	17.2	5.8	7.2	8.7	11.5	14.4	17.3	20.2	23.1
	Pmot		Hp	7.5	7.5	10	15	15	20	20	25	7.5	10	15	15	20	25	25	30
	Lp	s / c	dB (A)	70	72	73	77	80	84	88	91	86	87	88	89	91	92	94	95
		c / c		68	69	69	71	72	73	75	76	70	70	71	72	74	75	76	77
5	Q		cfm	104	156	209	314	418	523	628	733	140	218	295	450	604	759	914	1068
	Δt		°F	91	86	83	78	76	76	76	75	83	80	78	76	75	75	74	73
	P		BHp	5.2	6.5	7.8	10.3	12.9	15.4	18	20.5	7	8.7	10.4	13.9	17.4	20.9	24.4	27.9
	Pmot		Hp	7.5	10	10	15	20	20	25	25	10	15	15	20	25	30	30	40
	Lp	s / c	dB (A)	71	73	75	78	82	85	89	92	87	88	88	90	91	93	95	96
		c / c		69	70	71	72	73	74	75	76	70	71	71	73	74	75	77	78
7	Q		cfm	88	141	193	298	403	508	613	718	122	198	275	428	581	734	887	1040
	Δt		°F	140	129	120	109	103	101	102	101	124	118	114	107	104	103	103	102
	P		BHp	6.8	8.5	10.2	13.6	17	20.4	23.8	27.2	9.1	11.4	13.7	18.3	22.9	27.5	32.1	36.6
	Pmot		Hp	10	15	15	20	25	25	30	40	15	15	20	25	30	40	40	50
	Lp	s / c	dB (A)	72	74	76	80	83	87	90	94	89	89	90	92	93	94	96	97
		c / c		71	72	73	74	75	76	77	78	71	72	72	74	75	76	78	79
8	Q		cfm	82	134	187	292	397	502	606	711	111	187	264	416	568	720	873	1025
	Δt		°F	164	152	142	127	120	116	116	116	151	141	133	123	118	116	116	115
	P		BHp	7.7	9.6	11.5	15.3	19.1	23	26.8	30.6	10.4	13	15.6	20.9	26.1	31.3	36.5	41.7
	Pmot		Hp	10	15	15	20	25	30	40	40	15	20	20	30	40	40	50	60
	Lp	s / c	dB (A)	73	74	76	80	84	87	91	95	90	90	91	92	94	95	96	98
		c / c		73	74	74	75	76	77	78	79	71	72	73	74	76	77	78	80
9	Q		cfm		128	181	285	390	495	600	704	100	175	251	403	555	706	858	1010
	Δt		°F		175	164	147	137	132	130	130	177	164	154	139	132	130	129	127
	P		BHp		10.6	12.7	17	21.2	25.5	29.7	34	11.8	14.7	17.6	23.5	29.3	35.2	41.1	46.9
	Pmot		Hp		15	20	25	30	40	40	50	15	20	25	30	40	50	50	60
	Lp	s / c	dB (A)		75	77	80	84	88	92	96	91	91	92	93	95	96	97	98
		c / c			74	74	75	76	77	78	80	72	73	74	75	76	78	79	80
11	Q		cfm					377	481	585	689				380	532	683	835	987
	Δt		°F					171	163	159	159				173	162	157	156	154
	P		BHp					25.4	30.5	35.6	40.7				28.2	35.3	42.3	49.3	56.4
	Pmot		Hp					40	40	50	50				40	50	60	60	75
	Lp	s / c	dB (A)					89	92	95	98				94	95	97	98	100
		c / c						77	78	80	81				76	77	79	80	81
13 (*)	Q		cfm					366	469	573	677				355	507	660	812	965
	Δt		°F					206	196	192	192				208	191	184	182	181
	P		BHp					29.7	35.6	41.6	47.6				33.1	41.3	49.6	57.9	66.1
	Pmot		Hp					40	50	60	60				50	60	75	75	100
	Lp	s / c	dB (A)					92	94	97	99				94	96	98	100	101
		c / c						77	79	82	84				77	78	80	81	83
15 (*)	Q		cfm							564	667					486	639	792	945
	Δt		°F							212	209					216	206	202	200
	P		BHp							45.9	52.4					45.8	55	64.1	73.3
	Pmot		Hp							60	75					60	75	100	100
	Lp	s / c	dB (A)							98	101					95	97	100	102
		c / c								83	85					80	82	83	85

Flow rates refer to air at the Standard suction conditions of 68°F and 29.92 inHg (abs)
Q = flow rate – Tolerance on flow rate values: ± 5%
Δt = temperature increase – Tolerance on Δt: ± 10°F
P = absorbed power at motor shaft – Tolerance on absorbed power: ± 5%
Pmot = electric motor power
Lp = Sound pressure level (SPL), measured in free field, at 3.5 ft distance, in accordance with the Standard EN ISO 2151, without radiating noise of the pipes – Tolerance: ± 2dB(A)
s/c = without acoustic enclosure **c/c** = with acoustic enclosure
(*) = only for non-continuous operation. Please contact our Sales Department for any information.

Performance

Δp [psig]	Blower type			ML 110								ML 125							
	Motor [rpm]			1800				3600				1800				3600			
	Blower [rpm]			850	1250	1650	2050	2450	2850	3250	3850	850	1250	1650	2050	2450	2850	3250	3850
3	Q		cfm	216	387	558	729	900	1071	1242	1498	326	546	766	986	1205	1425	1645	1974
	Δt		°F	58	48	42	39	39	39	41	42	57	54	52	52	52	52	52	52
	P		BHp	6.5	9.1	11.7	14.3	16.9	19.4	22	25.9	8.8	11.9	15.1	18.2	21.4	24.5	27.6	32.4
	Pmot		Hp	10	15	15	20	25	25	30	40	15	15	20	25	30	30	40	40
	Lp	s / c	dB (A)	75	78	81	84	87	90	94	98	73	76	79	82	86	89	92	97
		c / c		71	72	73	75	76	77	78	80	60	62	63	65	67	68	70	73
4	Q		cfm	194	364	535	706	876	1047	1217	1473	308	527	747	967	1186	1406	1626	1956
	Δt		°F	77	65	58	54	53	54	55	57	67	63	61	60	60	60	61	60
	P		BHp	8.1	11.4	14.6	17.9	21.1	24.3	27.6	32.5	10.2	14.4	18.6	22.8	26.9	31.1	35.3	41.6
	Pmot		Hp	10	15	20	25	30	30	40	40	15	20	25	30	40	40	50	60
	Lp	s / c	dB (A)	76	79	82	85	88	91	94	99	73	77	80	83	86	89	92	97
		c / c		71	73	74	75	76	77	78	80	62	63	65	66	68	69	71	73
5	Q		cfm	174	344	514	685	855	1025	1195	1450	291	510	729	949	1168	1388	1607	1936
	Δt		°F	95	83	75	70	68	68	69	71	83	77	74	72	71	70	70	69
	P		BHp	9.6	13.5	17.4	21.4	25.3	29.2	33.1	39	12	17.3	22.6	27.9	33.2	38.5	43.8	51.8
	Pmot		Hp	15	20	25	30	40	40	50	50	15	25	30	40	50	50	60	75
	Lp	s / c	dB (A)	78	80	83	86	89	92	95	99	74	77	80	83	87	90	93	98
		c / c		72	73	74	75	76	77	78	80	63	65	66	67	69	70	72	74
7	Q		cfm	139	309	478	648	818	988	1157	1412	262	479	696	914	1131	1348	1565	1890
	Δt		°F	132	116	106	101	99	100	102	103	123	113	106	103	101	100	100	99
	P		BHp	12.7	18	23.3	28.6	33.9	39.2	44.5	52.4	16.8	23.8	30.8	37.7	44.7	51.7	58.7	69.1
	Pmot		Hp	20	25	30	40	50	50	60	75	25	30	40	50	60	75	75	100
	Lp	s / c	dB (A)	80	82	85	88	90	93	96	100	75	78	81	85	88	91	94	99
		c / c		73	74	75	76	77	78	79	81	67	68	69	70	72	73	74	76
8	Q		cfm	123	293	462	631	800	969	1138	1392	250	466	681	897	1112	1328	1543	1866
	Δt		°F	149	131	120	115	114	115	117	117	143	132	124	119	116	115	115	114
	P		BHp	15	20.9	26.8	32.7	38.6	44.5	50.4	59.3	19.4	27.1	34.8	42.5	50.2	57.9	65.6	77.1
	Pmot		Hp	20	30	40	40	50	60	75	75	25	40	50	60	75	75	100	100
	Lp	s / c	dB (A)	80	83	86	88	91	94	96	100	76	79	82	85	89	92	95	100
		c / c		73	74	75	76	77	78	79	81	68	70	71	72	73	75	76	78
9	Q		cfm	108	277	445	614	782	951	1119	1372	239	453	667	882	1096	1310	1524	1845
	Δt		°F	165	147	136	130	129	130	131	132	166	151	141	134	131	130	129	129
	P		BHp	17.1	23.6	30.2	36.7	43.2	49.7	56.2	65.9	21.3	29.9	38.4	46.9	55.4	64	72.5	85.3
	Pmot		Hp	25	30	40	50	60	75	75	100	30	40	50	60	75	100	100	125
	Lp	s / c	dB (A)	80	83	86	88	91	94	96	100	76	79	82	86	89	92	96	101
		c / c		74	75	76	77	78	79	80	81	70	72	73	74	75	76	77	79
11	Q		cfm			411	578	745	913	1080	1331				857	1070	1283	1496	1815
	Δt		°F			175	164	159	159	160	161				165	159	157	158	157
	P		BHp			35.1	43.1	51.1	59.1	67.1	79.1				54.3	65	75.6	86.2	102.2
	Pmot		Hp			50	60	75	75	100	100				75	100	100	125	125
	Lp	s / c	dB (A)			85	88	90	93	96	100				89	92	94	97	101
		c / c				78	78	79	80	81	82				77	78	79	79	81
13 (*)	Q		cfm				551	717	883	1048	1297				833	1044	1256	1468	1786
	Δt		°F				201	190	190	194	194				197	186	183	184	181
	P		BHp				47.4	57	66.7	76.4	90.9				63.5	75.9	88.3	100.7	119.3
	Pmot		Hp				60	75	100	100	125				100	100	125	125	150
	Lp	s / c	dB (A)				92	94	96	98	101				97	98	99	100	102
		c / c					79	80	81	82	83				81	81	81	81	81
15 (*)	Q		cfm				537	701	865	1029	1275					1023	1233	1443	1757
	Δt		°F				216	214	214	215	216					209	203	202	200
	P		BHp				53.1	63.9	74.7	85.4	101.6					84.2	97.9	111.6	132.3
	Pmot		Hp				75	100	100	125	125					125	125	150	200
	Lp	s / c	dB (A)				93	95	97	99	102					104	104	104	104
		c / c					80	80	81	82	84					84	84	84	84

Flow rates refer to air at the Standard suction conditions of 68°F and 29.92 inHg (abs)
Q = flow rate – Tolerance on flow rate values: ± 5%
Δt = temperature increase – Tolerance on Δt: ± 10°F
P = absorbed power at motor shaft – Tolerance on absorbed power: ± 5%
Pmot = electric motor power
Lp = Sound pressure level (SPL), measured in free field, at 3.5 ft distance, in accordance with the Standard EN ISO 2151, without radiating noise of the pipes – Tolerance: ± 2dB(A)
s/c = without acoustic enclosure **c/c** = with acoustic enclosure
(*) = only for non-continuous operation. Please contact our Sales Department for any information.

Performance

Δp [psig]	Blower type			ML 150								ML 175							
	Motor [rpm]			1800					3600			1800				3600			
	Blower [rpm]			850	1050	1250	1650	2050	2450	2850	3250	1150	1450	1750	2000	2300	2600	2800	3000
3	Q		cfm	422	565	708	995	1281	1568	1854	2141	832	1099	1367	1590	1857	2125	2303	2482
	Δt		°F	65	57	52	48	48	50	52	50	73	72	71	70	69	69	69	69
	P		BHp	9.2	11.4	13.6	17.9	22.2	26.5	30.8	35.1	11.3	19.3	27.4	34.1	42.2	50.3	55.6	61
	Pmot		Hp	15	15	20	25	30	40	40	50	15	25	40	50	60	75	75	75
	Lp	s / c	dB (A)	86	87	88	90	92	94	96	98	92	93	94	95	96	97	98	98
		c / c		63	64	65	67	69	71	73	75	70	72	73	75	76	78	79	80
4	Q		cfm	400	543	686	973	1259	1546	1832	2119	801	1068	1336	1559	1826	2094	2272	2451
	Δt		°F	76	68	62	56	56	57	58	56	88	85	83	82	81	81	80	80
	P		BHp	11.8	14.5	17.3	22.8	28.3	33.8	39.4	44.9	13.5	22.7	31.9	39.6	48.8	58	64.1	70.2
	Pmot		Hp	15	20	25	30	40	50	50	60	20	30	40	50	60	75	100	100
	Lp	s / c	dB (A)	88	88	89	91	93	95	96	98	94	94	95	96	97	98	99	99
		c / c		65	66	67	69	71	72	74	76	72	74	75	76	78	79	80	81
5	Q		cfm	381	524	667	954	1240	1527	1813	2100	773	1040	1308	1531	1799	2067	2245	2424
	Δt		°F	94	84	77	69	68	69	70	67	103	99	96	95	93	93	92	91
	P		BHp	14.3	17.7	21.1	27.8	34.5	41.3	48	54.7	16.2	26.4	36.6	45.1	55.4	65.6	72.4	79.2
	Pmot		Hp	20	25	30	40	50	50	60	75	20	40	50	60	75	100	100	100
	Lp	s / c	dB (A)	88	89	90	92	93	95	97	99	94	95	96	97	98	99	100	100
		c / c		66	67	68	70	72	74	75	77	73	75	76	78	79	81	82	83
6	Q		cfm	362	505	649	935	1222	1508	1794	2081	748	1016	1283	1507	1774	2042	2221	2399
	Δt		°F	116	104	95	85	82	82	83	81	119	113	109	107	106	105	104	103
	P		BHp	17.1	21.1	25.1	33.2	41.2	49.3	57.3	65.4	19.1	30.3	41.6	50.9	62.1	73.4	80.9	88.3
	Pmot		Hp	25	30	40	50	50	60	75	100	25	40	60	75	100	100	100	125
	Lp	s / c	dB (A)	88	89	90	92	94	96	98	100	94	95	96	97	99	100	101	101
		c / c		67	68	69	71	73	75	77	79	73	75	77	78	80	82	83	84
7	Q		cfm	340	484	627	913	1200	1486	1773	2059	727	994	1262	1485	1753	2020	2199	2377
	Δt		°F	139	124	113	101	96	96	97	94	135	128	123	120	118	117	116	115
	P		BHp	20.6	25.5	30.3	40.1	49.8	59.5	69.3	79	22.3	34.6	47	57.2	69.6	81.9	90.1	98.4
	Pmot		Hp	25	40	40	50	75	75	100	100	30	50	60	75	100	100	125	125
	Lp	s / c	dB (A)	90	91	92	94	95	97	99	101	95	96	97	98	99	100	101	101
		c / c		69	70	71	73	74	76	77	79	74	75	77	78	80	82	83	84
8	Q		cfm	327	469	611	896	1180	1464	1749	2033	706	974	1241	1464	1732	2000	2178	2356
	Δt		°F	159	143	130	115	110	110	110	107	153	143	137	134	131	130	129	127
	P		BHp	22.6	28	33.4	44.1	54.8	65.5	76.3	87	24.8	38.2	51.7	62.9	76.3	89.8	98.7	107.7
	Pmot		Hp	30	40	50	60	75	100	100	125	30	50	75	100	100	125	125	150
	Lp	s / c	dB (A)	91	92	93	95	97	98	100	102	95	96	97	98	99	100	101	102
		c / c		71	71	72	74	75	77	78	80	74	76	77	79	80	82	83	84
9	Q		cfm		457	597	879	1161	1442	1724	2005	686	954	1221	1444	1712	1980	2158	2337
	Δt		°F		161	146	129	123	123	124	120	170	159	152	148	144	142	141	139
	P		BHp		30.3	36.1	47.7	59.3	70.9	82.5	94	26.7	41.2	55.7	67.7	82.2	96.7	106.4	116
	Pmot		Hp		40	50	60	75	100	100	125	40	50	75	100	100	125	150	150
	Lp	s / c	dB (A)		94	94	96	98	100	101	103	96	97	98	99	100	101	102	103
		c / c			72	73	75	76	78	80	81	75	76	78	79	81	83	84	85
11 (*)	Q		cfm			568	847	1125	1404	1682	1961				1409	1676	1944	2122	2301
	Δt		°F			182	160	152	152	153	148				176	171	168	166	165
	P		BHp			43.5	57.4	71.3	85.1	99	112.9				75.3	91.5	107.6	118.4	129.2
	Pmot		Hp			60	75	100	125	125	150				100	125	150	150	200
	Lp	s / c	dB (A)			98	99	101	102	103	104				102	103	104	105	106
		c / c				77	78	79	81	82	83				82	83	84	85	86
13 (*)	Q		cfm			540	815	1090	1365	1640	1915								
	Δt		°F			212	201	194	190	187	183								
	P		BHp			50.4	66.9	83.3	99.7	116.1	132.6								
	Pmot		Hp			75	100	125	125	150	200								
	Lp	s / c	dB (A)			105	105	105	105	105	105								
		c / c				81	82	83	84	84	85								

Flow rates refer to air at the Standard suction conditions of 68°F and 29.92 inHg (abs)
Q = flow rate – Tolerance on flow rate values: ± 5%
Δt = temperature increase – Tolerance on Δt: ± 10°F
P = absorbed power at motor shaft – Tolerance on absorbed power: ± 5%
Pmot = electric motor power
Lp = Sound pressure level (SPL), measured in free field, at 3.5 ft distance, in accordance with the Standard EN ISO 2151, without radiating noise of the pipes – Tolerance: ± 2dB(A)
s/c = without acoustic enclosure **c/c** = with acoustic enclosure
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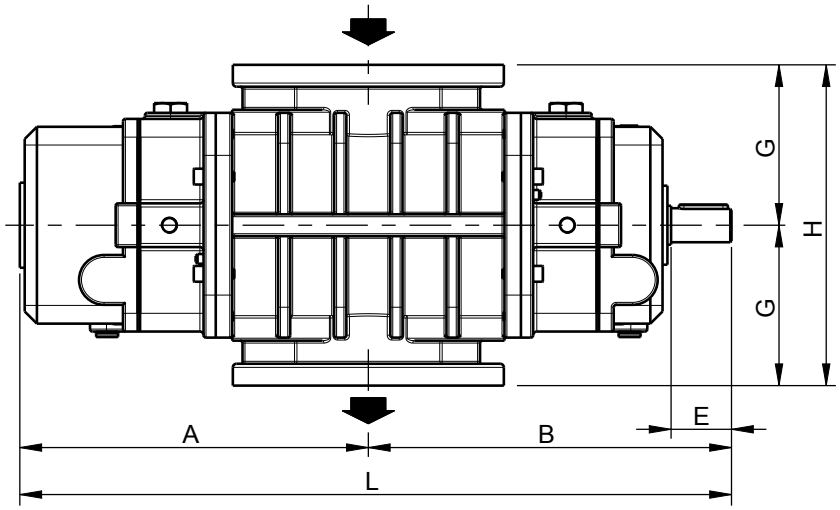
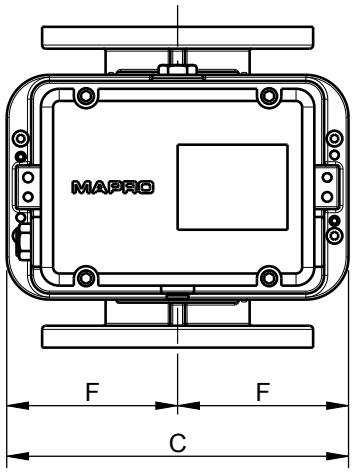
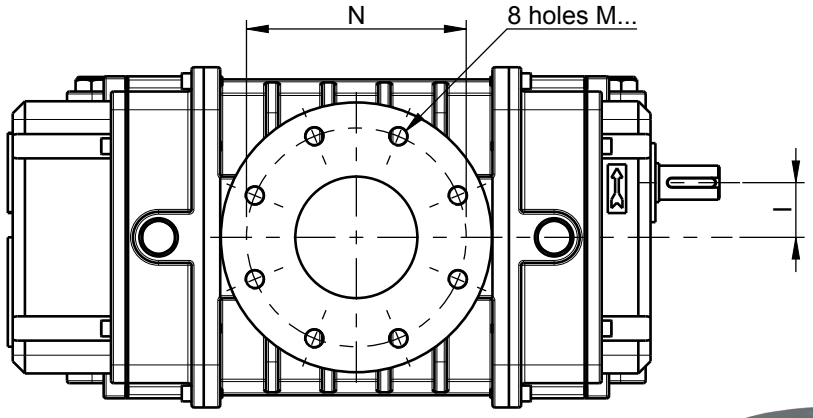
Dimensions

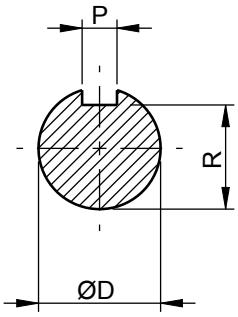
Bare shaft bodies

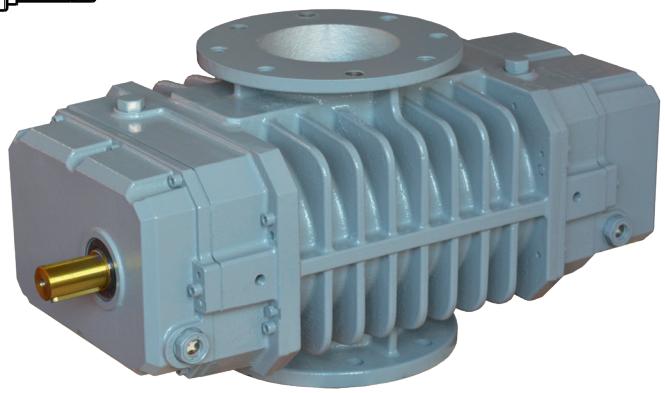
ML 40 BS - 50 BS - 65 BS - 70 BS - 80 BS - 100 BS - 110 BS - 125 BS - 150 BS - 175 BS











Blower Type	A	B	C	ØD	E	F	G	H	I	L	M	N	P	R	Inlet 150# ANSI	Outlet 150# ANSI	Weight [lb]
ML 40 BS	8.7	9.13	11.02	1.1	1.85	5.51	4.72	9.45	1.77	17.83	M16	4.92	0.31	0.94	2”	2”	150
ML 50 BS	9.57	10.04	11.02	1.1	1.95	5.51	5.2	10.39	1.77	19.61	M16	6.3	0.31	0.94	3”	3”	157
ML 65 BS	11.24	11.71	11.02	1.1	1.95	5.51	5.2	10.39	1.77	22.95	M16	7.09	0.31	0.94	4”	4”	190
ML 70 BS	11.81	12.48	14.17	1.38	2.44	7.09	6.3	12.6	2.36	24.29	M16	7.09	0.39	1.18	4”	4”	282
ML 80 BS	12.4	13.27	14.17	1.38	2.52	7.09	6.77	13.54	2.36	25.67	M16	8.27	0.39	1.18	5”	5”	309
ML 100 BS	14.37	15.24	14.17	1.38	2.52	7.09	6.77	13.54	2.36	29.61	M20	9.45	0.39	1.18	6”	6”	375
ML 110 BS	14.61	15.16	18.23	1.89	3.15	9.11	7.68	15.35	3.15	29.76	M20	9.45	0.55	1.67	6”	6”	516
ML 125 BS	16.34	16.85	18.23	1.89	3.11	9.11	8.37	16.73	3.15	33.19	M20	11.61	0.55	1.67	8”	8”	617
ML 150 BS	18.5	19.02	18.23	1.89	3.11	9.11	8.37	16.73	3.15	37.52	M20	11.61	0.55	1.67	8”	8”	686
ML 175 BS	19.96	20.91	19.02	2.36	4.41	9.51	7.4	14.8	2.99	40.87	M20	11.61	0.71	2.09	8”	8”	912

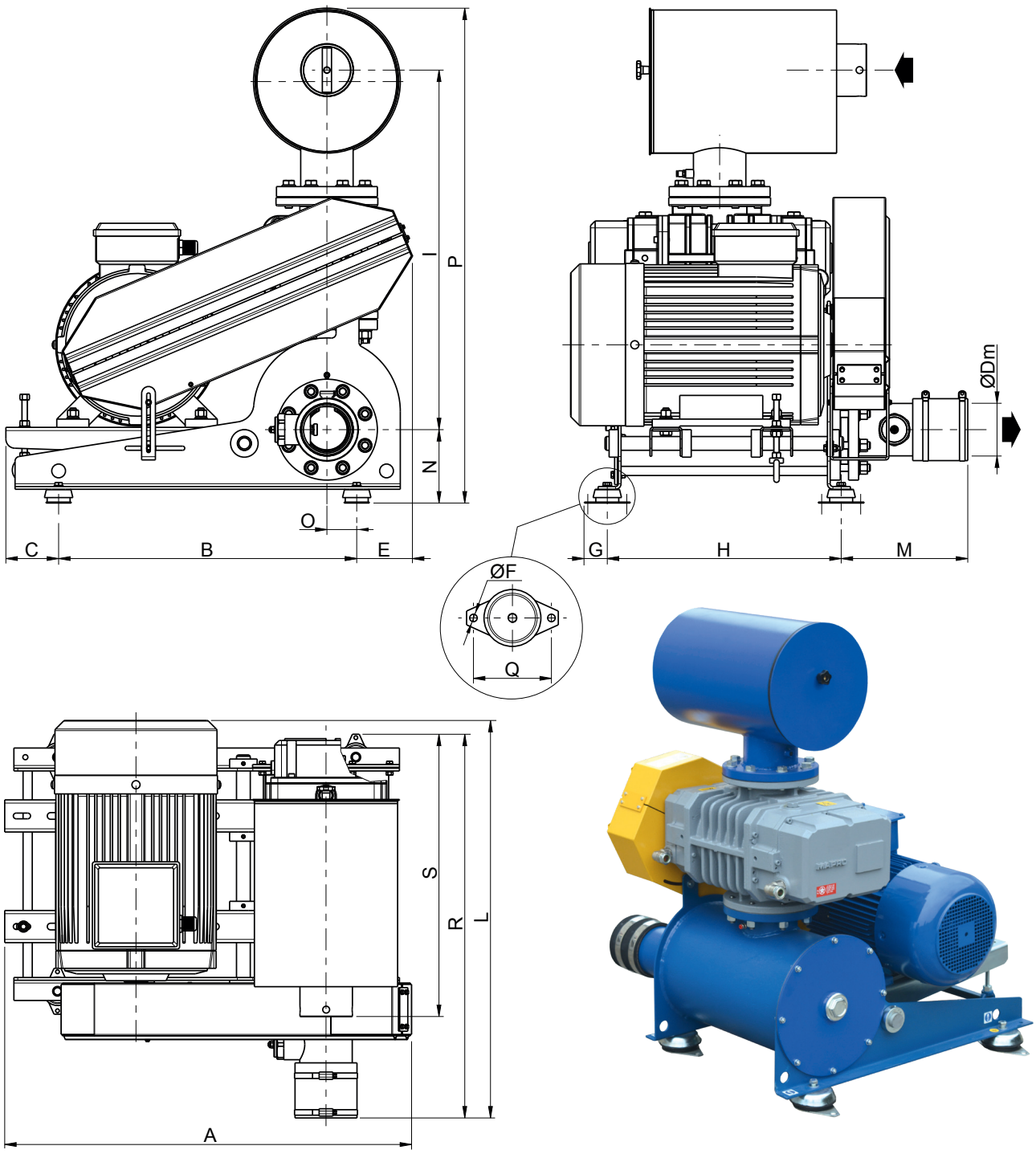
Dimensions and Weights not binding and given for informational purposes only

Dimensions [in]

Dimensions

Standard packages

ML 40 - 50 - 65 - 70 - 80 - 100 - 110



Blower Type	A	B	C	E	ØF	G	H	I	L(*)	M	N	O	P	Q	R	S	Outlet connection 150# ANSI	Weight [lb] (**)
ML 40	31.69	21.65	4.49	5.55	0.31	1.97	16.93	22.52	32.2	11.42	6.3	1.57	33.31	3.35	30.31	22.64	2” 1/2	269
ML 50	34.92	25.59	4.53	4.8	0.31	1.97	20.08	30.47	33.23	10.87	6.3	2.56	42.09	3.35	32.91	25.83	4”	441
ML 65	34.92	25.59	4.53	4.8	0.31	1.97	20.08	30.87	34.09	10.87	6.3	2.56	42.48	3.35	32.91	24.21	4”	481
ML 70	35.63	25.59	4.53	5.51	0.31	1.97	20.08	33.07	36.22	10.87	6.3	2.56	44.69	3.35	32.91	25.2	4”	575
ML 80	39.29	27.56	5.51	6.22	0.63	3.74	22.05	34.41	40.94	12.2	8.66	3.15	48.39	6.3	37.99	28.35	5”	750
ML 100	39.29	27.56	5.51	6.22	0.63	3.74	22.05	34.41	40.94	12.2	8.66	3.15	48.39	6.3	37.99	26.38	6”	847
ML 110	39.76	27.56	5.51	6.69	0.63	3.74	22.05	36.22	40.94	12.2	8.66	3.15	48.39	6.3	37.99	27.56	6”	1089

(*) Dimension L is given, for informational purposes only, for the largest motor power

(**) The weights are given for packages without electric motor

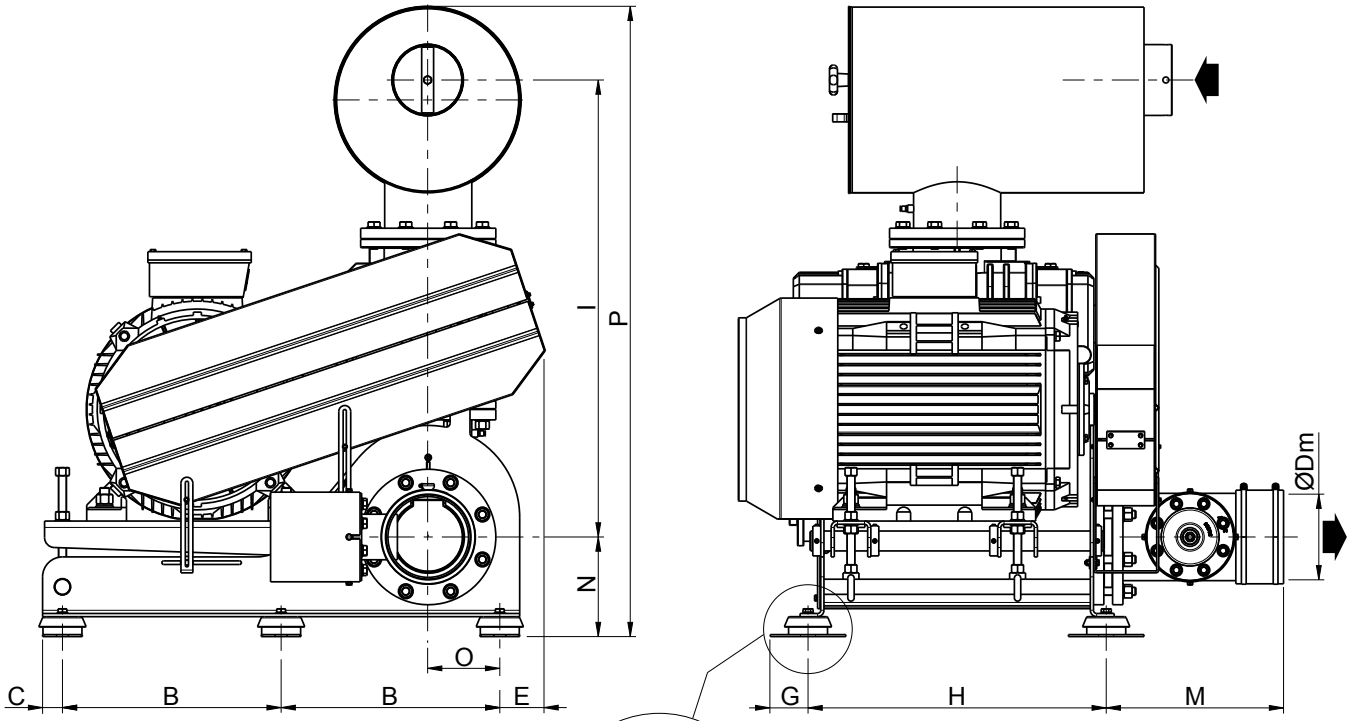
Dimensions [in]

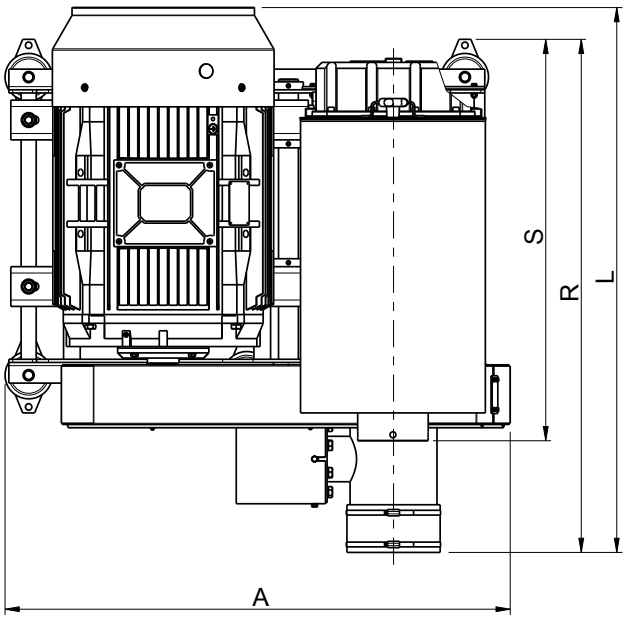
Dimensions and Weights not binding and given for informational purposes only

Dimensions

Standard packages

ML 125 - 150 - 175





Blower Type	A	B	C	E	ØF	G	H	I	L(*)	M	N	O	P	Q	R	S	Outlet connection 150# ANSI	Weight [lb] (**)
ML 125	50.16	21.65	2.36	4.53	0.63	3.74	29.53	45.16	53.98	17.56	9.84	7.09	62.28	6.3	50.83	39.76	8”	1554
ML 150	50.16	21.65	2.36	4.53	0.63	3.74	29.53	45.16	53.98	17.56	9.84	7.09	62.28	6.3	50.83	37.6	8”	1618
ML 175	50	21.65	2.36	4.37	0.63	3.74	29.53	44.21	54.84	17.56	9.84	7.09	61.34	6.3	50.83	37.2	8”	1962

(*) Dimension L is given, for informational purposes only, for the largest motor power

(**) The weights are given for packages without electric motor

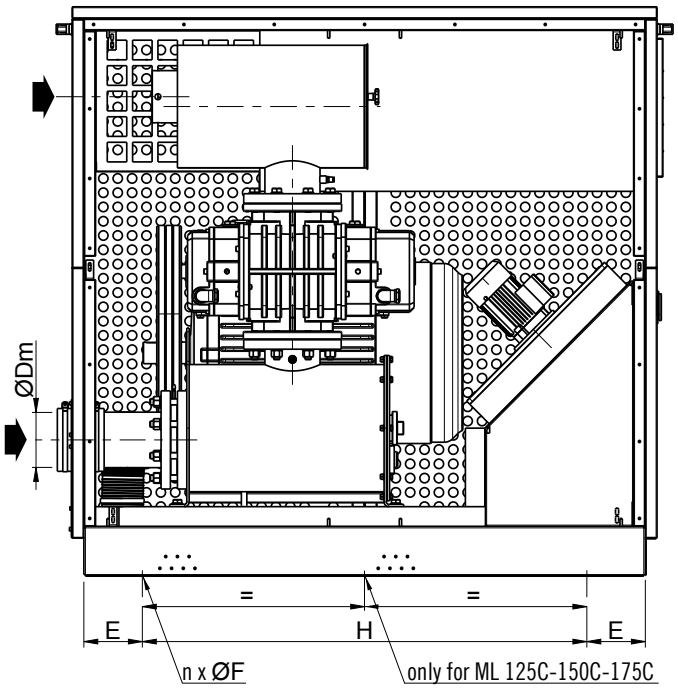
Dimensions [in]

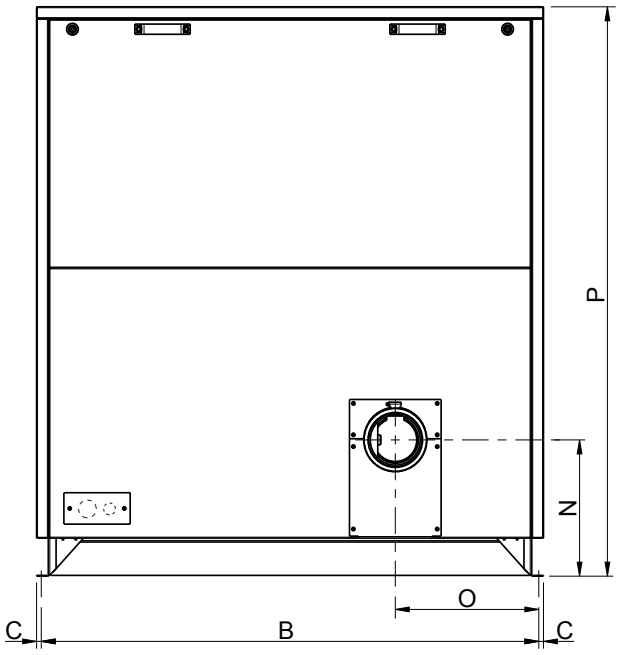
Dimensions and Weights not binding and given for informational purposes only

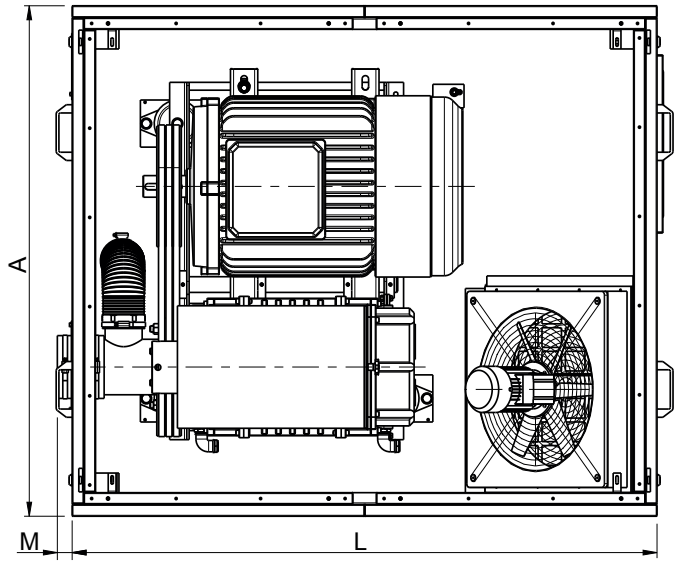
Dimensions

Soundproofed packages

ML 40C - 50C - 65C - 70C - 80C - 100C - 110C - 125C - 150C - 175C







Blower Type	A	B	C	E	n x ØF	H	L	M	N	O	P	Outlet connection 150# ANSI	Weight [lb] (*)
ML 40 C	39.37	38.43	0.47	5.75	4 x 0.39	29.13	43.7	1.85	11.3	9.96	43.31	2" 1/2	633
ML 50 C	43.31	42.36	0.47	5.75	4 x 0.39	38.98	53.15	1.3	11.3	10.94	53.03	4"	935
ML 65 C	43.31	42.36	0.47	5.75	4 x 0.39	38.98	53.15	1.3	11.3	10.94	53.03	4"	977
ML 70 C	43.31	42.36	0.47	5.75	4 x 0.39	38.98	53.15	1.3	11.3	10.94	53.03	4"	1074
ML 80 C	51.18	50.24	0.47	5.75	4 x 0.39	44.88	59.06	1.5	13.66	14.49	59.06	5"	1360
ML 100 C	51.18	50.24	0.47	5.75	4 x 0.39	44.88	59.06	1.57	13.66	14.49	59.06	6"	1453
ML 110 C	51.18	50.24	0.47	5.75	4 x 0.39	44.88	59.06	1.57	13.66	14.49	59.06	6"	1687
ML 125 C	59.06	54.49	0.98	5.91	6 x 0.83	64.57	78.74	1.3	16.26	12.68	75.2	8"	2846
ML 150 C	59.06	54.49	0.98	5.91	6 x 0.83	64.57	78.74	1.3	16.26	12.68	75.2	8"	2912
ML 175 C	59.06	54.49	0.98	5.91	6 x 0.83	64.57	78.74	1.3	16.26	12.68	75.2	8"	3252

(*) The weights are given for packages without electric motor

Dimensions [in]

Dimensions and Weights not binding and given for informational purposes only

THE CONTROL SYSTEM MAPRO®SmartControl

MAPRO®SmartControl is a system specifically developed for the management and control of Mapro PD blowers operation.

Main features

- Total integration in the acoustic enclosure of the automation control board, PLC, electrical safety devices and instrumentation;
- Wiring of the electrical safety devices and instrumentation carried out directly at Mapro factory;
- Industrial-type “touch screen” display with easy-to-understand graphics and information;
- Manual or automatic regulation of the input frequency to the electric motor through PID controller; the frequency regulation is based on the signals from a sensor installed on board or far on the plant;
- Control and monitoring of the main operating parameters of the blower;
- Easy setting of the I/O signals for customized configurations;
- Recording of events and operation for real-time analytics and to make an easy search of faults / anomalies;
- Maintenance recording and generation of a warning signal when reaching each checkpoint;
- OEM instruction manual available in electronic format directly on the PLC screen.

Optional communication protocols

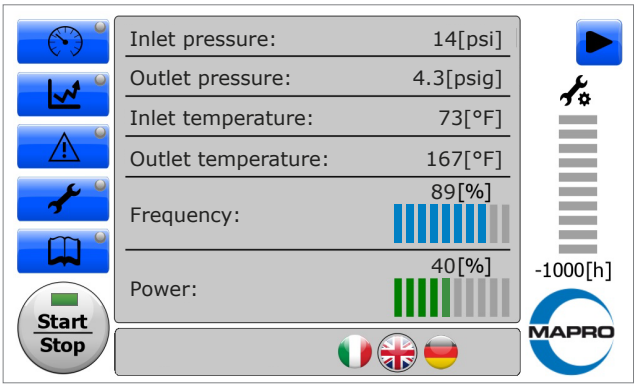
MAPRO®SmartControl system could be supplied, upon request, with the communication protocols:
Profinet, RS-232, RS-485 and RS-422

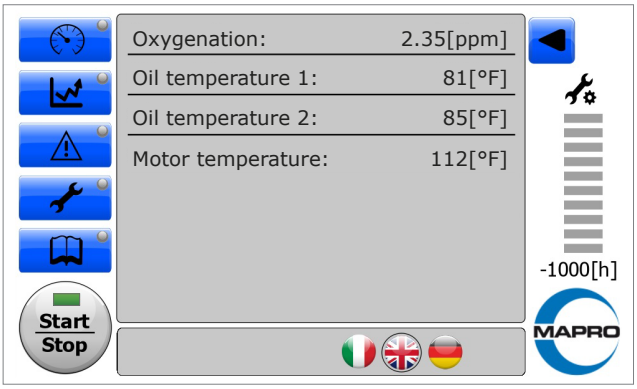
Standard instrumentation

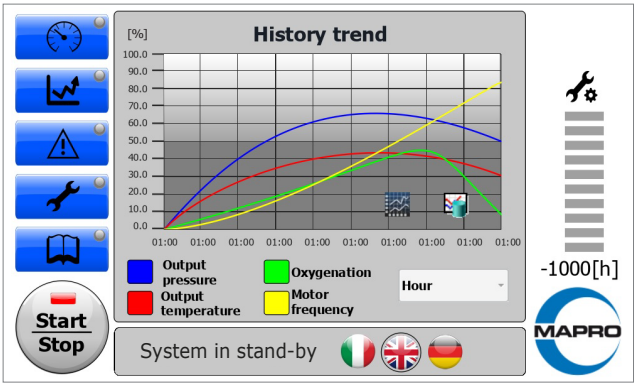
- Outlet pressure sensor;
- Inlet pressure sensor;
- Outlet temperature sensor;
- Inlet temperature sensor.

Optional instrumentation

- Dissolved oxygen measurement sensor;
- Timing gears and bearings lubricating oil temperature sensor;
- Electric motor winding temperature sensor.



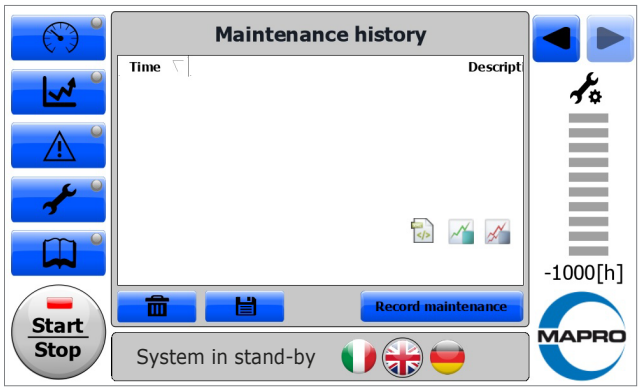


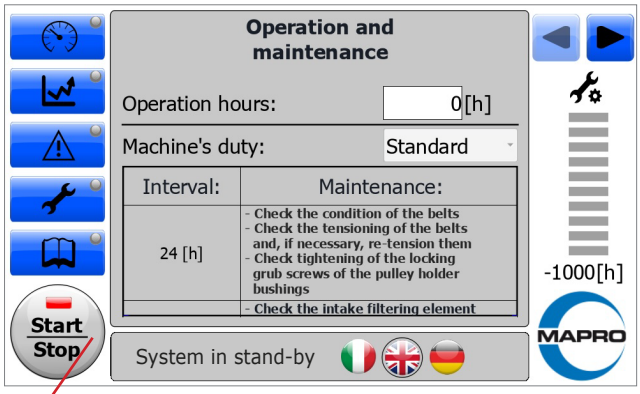


Logic of control

MAPRO®SmartControl system has been developed for:

- regulating the blower speed of rotation in a quick and easy way, thus avoiding the installation and programming of an automation controller. The software allows the use of the following three specific pre-set and fully parameterizable operating programs:
  - modulation program of the blower speed of rotation, based on the feedback from an external instrument; it has been specifically implemented for coupling with a dissolved oxygen measurement probe;
  - modulation program of the blower speed of rotation, based on the feedback from the outlet pressure sensor; it has been specifically implemented in order to prevent overload of the electric motor in case of too high system backpressure;
  - "filter backwash cycle" program, specifically designed to increase the blower speed of rotation to a preset value, upon reaching a preset value of the outlet pressure.
- handling alarm and emergency signals coming from the on board safety devices, that is:
  - the exceeding of the outlet pressure threshold value at the blower discharge;
  - the exceeding of the inlet pressure threshold value at the blower suction;
  - the exceeding of the outlet temperature threshold value at the blower discharge;
  - the exceeding of the inlet temperature threshold value at the blower suction (that is of the temperature inside the acoustic enclosure).





Electric system main features

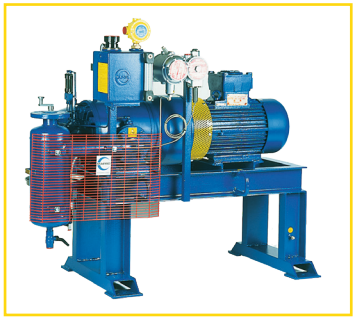
- Automation control board power supply:
  400V 3ph + N 50Hz; 460v 3ph + N 60 Hz;
- Wiring with shielded cables to be used in electric systems including a VFD;
- 4-20 mA inputs, equipped with 4-pole M12 quick-connectors, for the analogue signals coming from the instrumentation;
- I/O for feedback and for the management of emergency signals from the VFD;
- Line breaker and doors interlock directly installed on the automation control board;
- Emergency mushroom fitted on the side of the "touch screen" display;
- Micro-switches on the doors of the acoustic enclosure that can be opened for maintenance, so that to cut off the power supply when opening a door with blower in operation.

"Vesuvio" factory

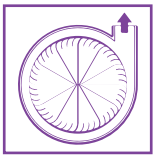
"Fermi" factory

"Cinisello" factory

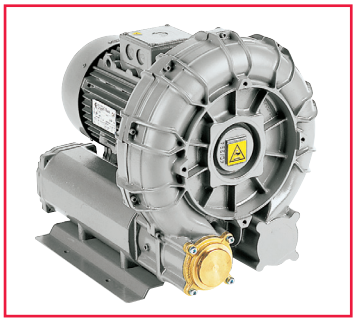
Other MAPRO® products

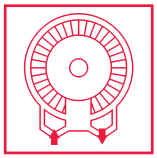


Sliding vane rotary compressors
for air and gases

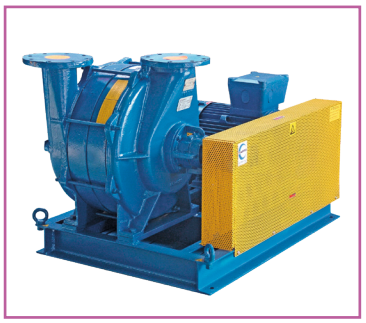


Centrifugal fans
for air and gases

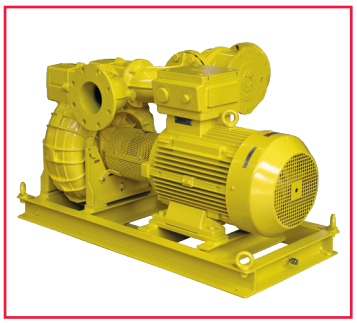


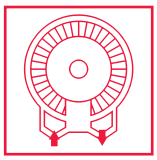


Regenerative blowers and
exhausters for air

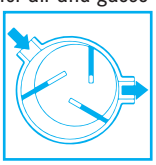


Multistage centrifugal blowers
and exhausters for air and gases





Regenerative blowers and
exhausters for gases



Rotary vane vacuum pumps,
oil recirculating type

This catalogue is for informational purposes only. It should not be considered as a binding description of the products, their dimensions or their performance.
In the logic of continuous improvement, the catalogue is subject to revision. Please contact our Sales Department for information on the version in force.

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