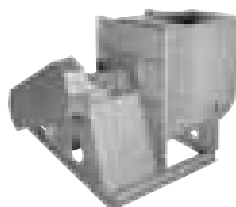
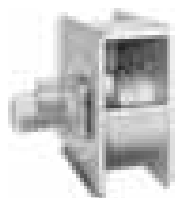


Industrial Process Fans  
with or without housing  
with direct drive or belt drive

Issue 1



**motralec**

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX  
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48  
Demande de prix / e-mail : [service-commercial@motralec.com](mailto:service-commercial@motralec.com)  
[www.motralec.com](http://www.motralec.com)

# Nicotra Gebhardt – a strong partner

With more than 50 years of experience manufacturing fans, more than 1000 employees, and the most extensive product line on the market, we are among the most significant manufacturers of centrifugal fans.

Production facilities, subsidiaries, and representatives around the world are a prerequisite for close partnerships and guarantee proximity to customers.

Our own intensive research and development organization, modern production, short response times, and fast and competent service have always been the important pillars of our success.



## Use of process air fans

Process air fans are an important component of machines and plants. In these applications they assure functions that would not be possible without defined air transport. Of these specially developed, robust fans, there are several standard ranges and a number of customer-specific solutions.

### Examples of ventilation technology processes

- Cooling *of generators...*
- Drying *agricultural products...*
- Ventilating *composting plants ...*
- Extracting *contaminated air from paint systems...*
- Circulating *hot air in industrial furnaces...*

# Competent, fast, flexible

For more than 15 years we have been successfully active in the field of process air technology.

Specialists brought together in a separate business unit stand for competence, speed, and flexibility.

For example, as a partner for machine and plant engineering, with our fan solutions we are successful in the following industries:

- Printing and paper technology
- Dedusting engineering
- Rubber and plastic machines
- Industrial furnace construction
- Compressors
- Machine motors, steam boilers, and firing systems
- Locomotives and rail cars
- Machines for the food industry
- Surface technology
- Cleaning machines
- Special machine engineering
- Textile machines
- Drying technology
- Wind turbines

## Solutions tailored to your requirements

Our products stand for the highest level of quality and reliability. The standard solutions can be easily configured with our electronic proSELECTA II selection program. You get complete documentation with data, dimensions, and prices. Moreover we can offer cost effective, modifications tailored to your needs.

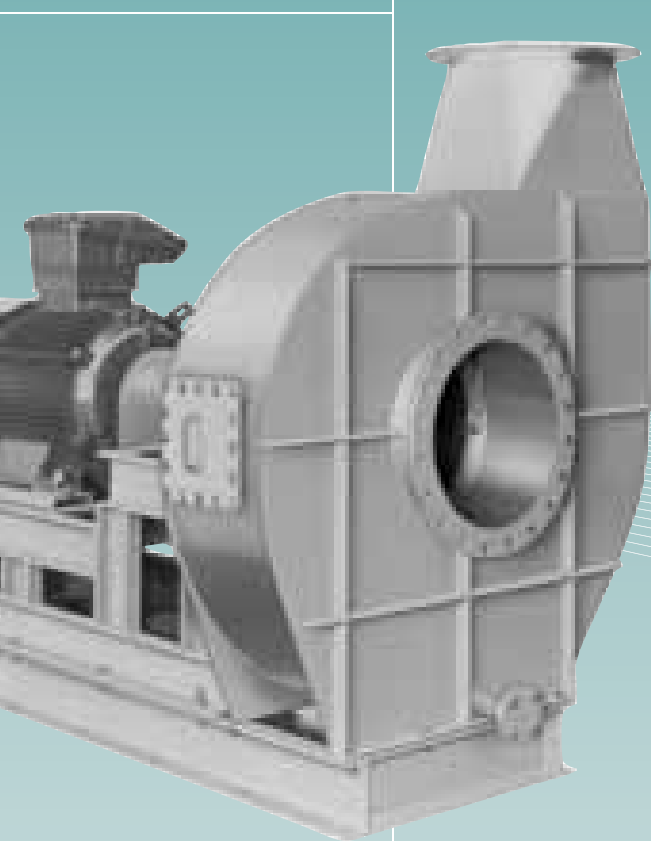
Our customers value the solution competence of our technicians. Our technicians support you in selecting the suitable fans and with engineering with the objective of ensuring optimal function, long service life, and low maintenance requirements at minimum costs. In this regard the level of consulting competence extends far beyond the usual level and also includes areas such as...

- The technical flow integration of the fan in the machine
- Minimization of noise emission
- Minimum energy consumption
- Vibration considerations
- Solutions where installation space is at a premium

### Customer-specific process air fans

In addition to the broad line of standardised centrifugal fans for ventilation and air-conditioning technology and process air technology, as well as the many variants that can be generated with our product line, Nicotra Gebhardt also has years of experience in the area of customer-specific fan solutions. If the requirement is appropriate even totally new developments are possible.

*More in this regard on page 18 and 19 ...*



Einfach und exakt auslegen mit proSELECTA II

*This brochure is designed to provide you with an overview of the process air fan product line, enable you to make pre-selections, and to supply an initial basis for planning. To precisely present all possibilities, technical details, and combinations would exceed the scope of this brochure.*

*With our proSELECTA II selection program, available at [www.nicotra-gebhardt.com](http://www.nicotra-gebhardt.com) you can configure your fans on your own. Call us now to release access to this program. Naturally we can also configure fans for you.*

We would be pleased to advise you: Phone +49 7942/101224

## Industrial Process Fans with housing and direct drive

### P2M

- **Spiral housing**  
Robust welded construction  
Housing positions in 90° increments  
Individual install position  
Different levels of tightness  
Suction-side connection DIN 24154-R4  
Pressure-side connection DIN 24158-R4
- **Centrifugal impeller**  
Impeller diameter 280 to 900 mm  
Backward-curved blades  
Welded  
Dust-repellent
- **Motor**  
Standard motor, B5 mounting  
Maximum motor size 200
- **Materials**  
Coated steel  
Hot-dip galvanised  
Stainless steel 1.4307  
Stainless steel 1.4571 on request

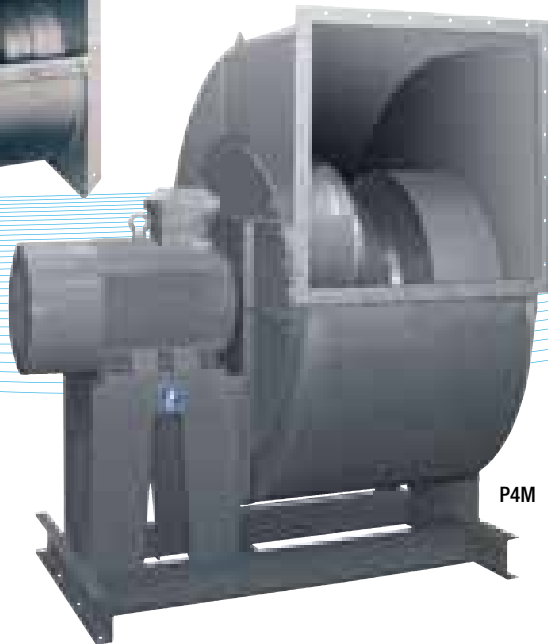
### P4M / P4K

- **Spiral housing**  
Robust welded construction  
Housing positions in 45° increments  
Different levels of tightness  
Suction-side connection DIN 24154-R4  
Pressure-side connection DIN 24158-R4
- **Centrifugal impeller**  
Impeller diameter 1000 to 1600 mm  
Backward-curved blades  
Welded Dust-repellent
- **Motor**  
Standard motor, B3 mounting  
Maximum motor size 315  
**P4K:** For motor size 280 and 315 also with coupling between motor and impeller, type P4K
- **Materials**  
Coated steel  
Hot-dip galvanised  
Stainless steel 1.4307  
Stainless steel 1.4571 on request

## Industrial Process Fans with housing and belt drive

### P4R

- **Spiral housing**  
Robust welded construction  
Housing positions in 45° increments  
Different levels of tightness  
Suction-side connection in accordance with DIN 24154-R4  
Pressure-side connection in accordance with DIN 24158-R4  
Compact subconstruction with bearing block, bearing, base frame and motor clamp fixture
- **Centrifugal impeller**  
Diameter 450 to 1600 mm  
Backward-curved blades  
Welded  
Dust-repellent
- **Motor**  
Standard motor, B3 mounting  
Maximum motor size 315
- **Materials**  
Coated steel  
Hot-dip galvanised  
Stainless steel 1.4307  
Stainless steel 1.4571 on request



- **Displacement medium**  
Versions for displacement medium temperatures from -20°C up to +300°C
- **ATEX**  
Category 2 and 3; gas and dust
- **Extensive range of accessories**

- **Displacement medium**  
Versions for displacement medium temperatures from -20°C up to +300°C
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Category 2 and 3; gas and dust
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- **Displacement medium**  
Versions for displacement medium temperatures from -20°C up to +300°C
- **ATEX**  
Category 2 and 3; gas and dust
- **Extensive range of accessories**

- Robust industrial versions
- Long service life, easy to maintain
- High efficiency, quiet operation
- Custom solutions at series production prices

- Quality is certified and assured in accordance with ISO 9001
- Technical data measured as specified in DIN 24 163
- Accuracy class 2 in accordance with DIN 24 166
- 3D drawings for planning

## Industrial Process Fans without housing and direct drive

### Q2M



- **Built-in system**

Flat mounting plate  
Mounting frame  
*thermolock50* Insulation  
Inlet cone loose or attached

- **Centrifugal impeller**

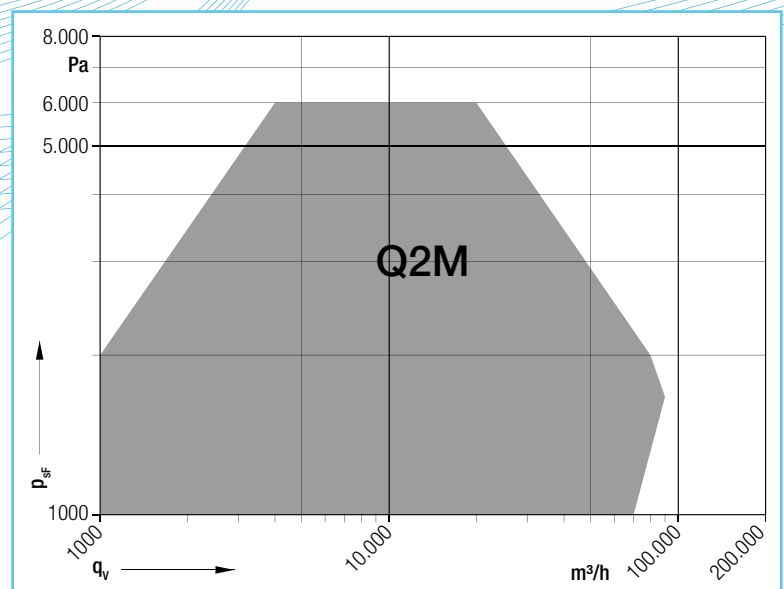
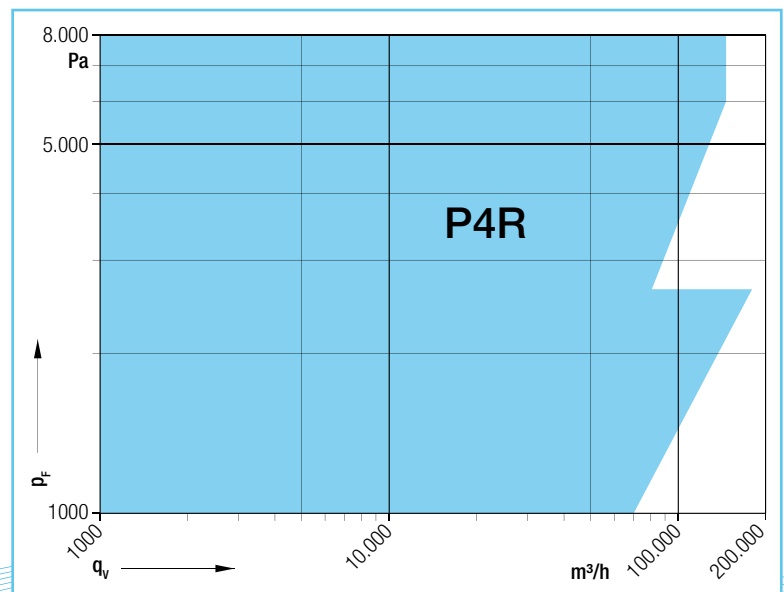
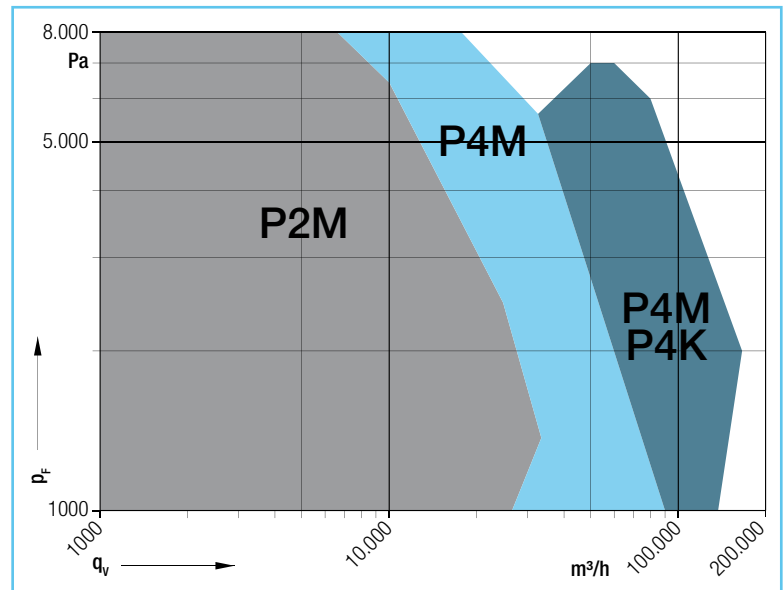
Diameter 280 to 1,400 mm  
Backward-curved blades  
Welded  
Dust-repellent

- **Motor**

Standard motor, B5 mounting to size 180  
Standard motor, B3 mounting from size 200  
Maximum motor size 315

- **Materials**

Coated steel  
Hot-dip galvanised  
Stainless steel 1.4307  
Stainless steel 1.4571 on request



- **Displacement medium**

Versions for displacement medium temperatures from -20°C up to +500°C  
Highly efficient thermal insulation *thermolock50*

- **ATEX**


prepared for Category 2 and 3; gas and dust

- **Extensive range of accessories**

P2M / P4M / P4K

Industrial Process Fans  
with housing and direct drive

Pre-Selection

Pa			<span style="border: 1px solid black; padding: 2px;">■ = P2M</span>										<span style="border: 1px solid black; padding: 2px;">■ = P4M</span>								
	11200																				
	10000																				
	9000																				
	8000			M8F2L	M8F2L	M8F2N	M8F2N	M7F2P	M7F2P	M7B2Q	M6B2R	M6B2R	M5B2T	N5M2W	N5M2W	N5M2W	N5M2W	N5F2X	N5F2X		
	7100			7,5-2	7,5-2	11-2	11-2	15-2	15-2	18,5-2	22-2	22-2	30-2	45-2	45-2	45-2	45-2	55-2	55-2		
	6300			M8M2K	M8M2L	M8M2L	M8M2L	M7M2N	M7M2P	M6F2Q	M6F2R	M6F2R	M6F2R	M5B2T	M5B2T	M5M2W	N5M2W	N5M2W	N5M2W		
	5600			5,5-2	7,5-2	7,5-2	7,51-2	11-2	15-2	18,5-2	22-2	22-2	22-2	30-2	30-2	45-2	45-2	45-2	45-2		
	5000			M8R2K	M8R2K	M8R2L	M8R2L	L6B2N	M6M2P	M6M2Q	M6M2Q	M6M2Q	M5F2R	M5F2R	M5F2R	M5B2T	N5M2W	N5M2W	N5M2W		
	4500			5,5-2	5,5-2	7,5-2	7,5-2	11-2	15-2	18,5-2	18,5-2	18,5-2	22-2	22-2	22-2	30-2	45-2	45-2	45-2		
	4000			K8B2F	K8B2H	K8B2H	K7B2J	K7B2K	L6F2N	L6F2N	M6R2P	M6R2P	M6R2P	M6R2Q	M6M2Q	L3F2R	M5M2R	M5B2T	M5B2T	N5M2W	
	3500			2,2-2	3-2	3-2	4-2	5,5-2	11-2	11-2	15-2	15-2	18,5-2	18,5-2	22-2	22-2	22-2	30-2	30-2	45-2	
	3150			K8F2F	K8F2F	K8F2H	K7F2J	K7F2K	K6B2L	K6B2L	L6M2N	M6R2P	M6R2P	M6R2Q	M6R2Q	M6R2Q	M6R2Q	L3F2R	L3B2R	L3B2R	M5B2T
	2800			2,2-2	2,2-2	3-2	4-2	5,5-2	7,5-2	7,5-2	11-2	15-2	15-2	18,5-2	18,5-2	18,5-2	22-2	22-2	22-2	22-2	30-2
	2500			K8M2F	K8M2F	K7M2J	K6F2K	K6F2K	K6F2L	K6F2L	K6B2N	K3B2P	K3B2P	K3B2P	M6R2Q	M6R2Q	L3F2R	L3F2R	L3F2R	L3B2R	
	2240			2,2-2	2,2-2	4-2	5,5-2	5,5-2	7,5-2	7,5-2	11-2	15-2	15-2	18,5-2	18,5-2	22-2	22-2	22-2	22-2	22-2	
	2000			K8R2E	K8R2F	K8M2F	K7M2J	K7M2J	K6M2K	K5F2L	K5F2L	K5B2N	K5B2N	K5B2N	K3B2P	K3B2P	K3B2P	L3F2R	L3F2R	L3F2R	
	1800			1,5-2	2,2-2	2,2-2	4-2	4-2	5,5-2	7,5-2	7,5-2	11-2	11-2	11-2	15-2	15-2	15-2	22-2	22-2	22-2	
	1600			K8R2E	K8R2E	K8R2F	K8R2F	J6B2J	K6R2K	K5M2L	K5M2L	K5F2N	K5F2N	K5F2N	K5B2N	K3F2P	K3F2P	K3B2P	K1B2Q	L3F2R	
1400			1,5-2	1,5-2	2,2-2	2,2-2	4-2	5,5-2	7,5-2	7,5-2	11-2	11-2	11-2	11-2	15-2	15-2	15-2	18,5-2	22-2		
1250			H8B2D	H6B2F	H6B2F	K8R2F	J6F2J	J6F2J	K6R2K	K6R2L	K5M2L	K5M2L	K5F2N	K5F2N	K5B2N	K3F2P	K3F2P	K3B2P	K1B2Q		
1120			1,1-2	2,2-2	2,2-2	2,2-2	4-2	4-2	5,5-2	7,5-2	7,5-2	7,5-2	7,5-2	11-2	11-2	15-2	15-2	15-2	18,5-2		
1000			H8F2D	H8F2D	H6F2F	H6B2F	H6B2H	J6F2J	K6R2K	K6R2K	K6M2L	K3R2N	K5M2L	K3M2N	K3M2N	K5B2N	K3F2P	K3F2P	K3F2P	P3B4R	
900			1,1-2	1,1-2	2,2-2	2,2-2	3-2	4-2	5,5-2	5,5-2	7,5-2	11-2	7,5-2	11-2	11-2	11-2	15-2	15-2	15-2	18,5-4	
800			H8M2C	H6M2E	H6F2F	H6F2F	H6F2F	H6B2H	H3B2J	H3B2J	K3W2L	K3R2N	K3R2N	K3R2N	K3M2N	K3M2N	K3M2N	K3M2N	P3F4Q	P3F4Q	
710			0,75-2	1,5-2	2,2-2	2,2-2	2,2-2	3-2	4-2	4-2	7,5-2	11-2	11-2	11-2	11-2	11-2	11-2	11-2	15-4	15-4	
600			H8R2C	H6R2E	H6M2E	H6M2F	H6F2F	H6B2H	H3F2J	H3F2J	H3B2J	H1B2L	K3W2L	K3W2L	N3B4N	K3R2N	K3R2N	K3R2N	P3F4Q	P3F4Q	
500			0,75-2	1,5-2	1,5-2	2,2-2	2,2-2	3-2	4-2	4-2	4-2	7,5-2	7,5-2	7,5-2	11-4	11-2	11-2	11-2	15-4	15-4	
400			H8R2C	H8R2C	H6R2E	H6R2F	H6M2F	H3M2H	H3F2J	H3F2J	H3F2J	H3B2J	H1B2L	H1B2L	K3W2L	N3B4N	N3B4N	N3B4N	P3F4Q	P3F4Q	
300			0,75-2	0,75-2	1,5-2	2,2-2	2,2-2	3-2	4-2	4-2	4-2	4-2	7,5-2	7,5-2	7,5-2	11-4	11-4	11-4	11-4	15-4	
200			F6B2C	F6B2C	H6R2E	H6R2F	H6R2F	H3R2H	H3M2H	M5B4J	H3F2J	H3F2J	H3B2J	H1B2L	H1B2L	N3F4N	N3F4N	K3M2N	N3B4N		
150			0,75-2	0,75-2	1,5-2	2,2-2	2,2-2	3-2	3-2	4-4	4-2	4-2	4-2	7,5-2	7,5-2	11-4	11-4	11-2	11-4		
100			F6F2C	F6F2C	F3B2E	F3B2E	H6R2F	H3R2H	H3R2H	H3M2H	M5B4J	M3B4K	M3B4K	H3B2J	M3B4K	H1B2L	N3F4N	N3F4N	N3F4N		
50			0,75-2	0,75-2	1,5-2	1,5-2	2,2-2	3-2	3-2	3-2	4-4	5,5-4	5,5-4	4-2	5,5-4	7,5-2	11-4	11-4	11-4		
0			F6M2C	F6M2C	F6B2D	F3F2D	F3B2E	F1B2F	H3W2F	H3R2H	H3M2H	M5B4J	M5B4J	M5B4J	M3F4K	M3B4K	M3B4K	N3M4M	M2B4M		
			0,75-2	0,75-2	1,1-2	1,1-2	1,5-2	2,2-2	2,2-2	3-2	3-2	4-4	4-4	4-4	5,5-4	5,5-4	5,5-4	7,5-4	7,5-4		
			F6R2B	F6R2B	F6F2D	F3F2D	F3F2D	F3B2E	F1B2F	H3W2F	H3R2H	H3M2H	M5B4J	M5B4J	M5B4J	M3F4K	H1B2L	M2B4M	M2B4M		
			0,55-2	0,55-2	1,1-2	1,1-2	1,1-2	1,5-2	2,2-2	2,2-2	3-2	3-2	4-4	4-4	4-4	5,5-4	7,5-2	7,5-4	7,5-4		
			F6W2B	F6R2B	F3M2D	F3M2D	F3F2D	F3F2D	F3B2E	H3W2F	H3W2F	H3R2H	M3M4J	M3M4J	L1B4J	M3B4K	M3B4K	M3B4K	N3M4M		
			0,55-2	0,55-2	1,1-2	1,1-2	1,1-2	1,1-2	1,5-2	2,2-2	2,2-2	3-2	4-4	4-4	4-4	5,5-4	5,5-4	5,5-4	7,5-4		
			D6B2A	F6W2B	F3R2C	F3R2C	F3M2D	F3F2D	K3B4F	F1B2F	H3W2F	H3W2F	M3M4J	M3M4J	M3M4J	L1B4J	L1B4J	M3F4K	M3B4K		
			0,37-2	0,55-2	0,75-2	0,75-2	1,1-2	1,1-2	1,5-4	2,2-2	2,2-2	2,2-2	4-4	4-4	4-4	4-4	4-4	5,5-4	5,5-4		
			D6F2A	F3W2C	F3W2C	F3W2C	F3R2C	F3M2D	F3F2D	K3B4F	K1B4G	H3W2F	H3R2H	M3W4H	M3M4J	M3M4J	M3M4J	M3F4K	M3B4K		
			0,37-2	0,75-2	0,75-2	0,75-2	1,1-2	1,1-2	1,5-4	2,2-2	2,2-2	2,2-2	3-2	3-4	4-4	4-4	4-4	5,5-4	5,5-4		
			D6M2A	D3B2A	F3W2C	F3W2C	F3W2C	F3R2C	F3F2D	K3F4F	K3B4F	K1B4G	K1B4G	M3W4H	M3W4H	L1B4J	L1B4J	L1B4J	M3F4K		
			0,37-2	0,37-2	0,75-2	0,75-2	0,75-2	1,1-2	1,5-4	1,5-4	2,2-4	2,2-4	3-4	3-4	4-4	4-4	4-4	4-4	5,5-4		
			D6M2A	D3B2A	D3B2A	D1B2B	F3W2C	F3R2C	K3M4E	K3F4F	K3F4F	K3B4F	K1B4G	K1B4G	M3W4H	M3W4H	M3W4H	L1B4J	M3F4K		
			0,37-2	0,37-2	0,37-2	0,55-2	0,75-2	0,75-2	1,1-4	1,5-4	1,5-4	1,5-4	1,5-4	2,2-4	2,2-4	3-4	3-4	4-4	5,5-4		
			H3B4C	H3B4C	H3B4C	H3B4C	D1B2B	F3W2C	F3M2D	K3M4E	J1B4F	K3F4F	K3B4F	K1B4G	K1B4G	M3W4H	M3W4H	M3M4J	L1B4J		
			0,55-4	0,55-4	0,55-4	0,55-4	0,55-2	0,75-2	1,1-2	1,1-4	1,5-4	1,5-4	1,5-4	2,2-4	2,2-4	3-4	3-4	4-4	4-4		
			H3F4C	H3F4C	H3F4C	D3B2A	H3B4C	H3B4C	H1B4D	K3M4E	K3M4E	K3M4E	K3F4F	K3B4F	K1B4G	K1B4G	M3W4H	M3M4J	L1B4J		
			0,55-4	0,55-4	0,55-4	0,55-4	0,55-2	0,55-4	0,55-4	1,1-4	1,1-4	1,1-4	1,5-4	1,5-4	2,2-4	2,2-4	3-4	4-4	4-4		
			H3M4B	H3M4B	H3M4B	H3M4B	H3B4C	H3B4C	H3B4C	H1B4D	K3M4E	K3M4E	K3M4E	K3B4F	K1B4G	K1B4G	K1B4G	M3W4H	L1B4J		
			0,37-4	0,37-4	0,37-4	0,37-4	0,55-4	0,55-4	0,55-4	0,75-4	1,1-4	1,1-4	1,1-4	1,5-4	2,2-4	2,2-4	2,2-4	3-4	4-4		
m³/h			400	800	1250	1600	2000	2500	3150	4000	5000	5600	6300	7100	8000	9000	10000	12500	14000		
m³/min			7	13	21	27	33	42	53	67	83	93	105	118	133	150	167	208	233		
m³/s			0,11	0,2	0,35	0,45	0,56	0,7	0,9	1	1,4	1,6	1,75	2	2,25	2,5	2,8	3,5	4		
			Volume flow q <sub>v</sub> →																		

The specification is on page 4  
See pages 8 and 9 for dimensions and accessories ...

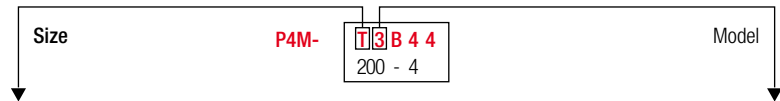


P2M / P4M / P4K

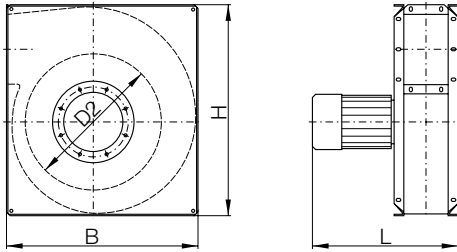
Industrial Process Fans  
with housing and direct drive

Main Dimensions in mm, subject to change.

The dimensions can be determined from the Pre-Selection, as follows:

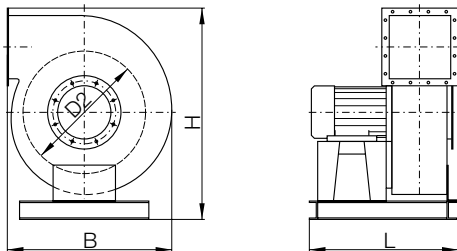


P2M



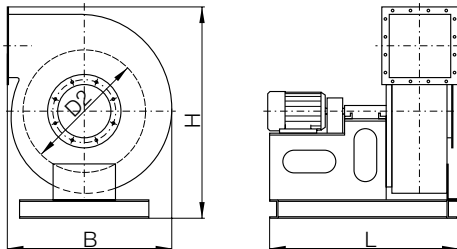
Size P2M-	Impeller Ø D2	B	H	L <sub>max</sub> for model							
				1	2	3	5	6	7	8	
D	282	412	446	630	-	590	-	500	-	-	
F	355	511	557	790	-	730	-	620	-	-	
H	447	634	697	960	-	890	-	750	-	680	
J	501	710	777	1010	-	930	-	770	-	-	
K	562	790	871	1240	-	1150	1020	970	930	880	
L	631	884	973	1290	1240	1190	-	990	-	-	
M	708	986	1092	1360	1290	1240	1070	1010	970	900	
N	794	1115	1221	1440	1370	1310	-	-	-	920	
P	891	1245	1360	1510	-	1370	-	-	-	-	

P4M



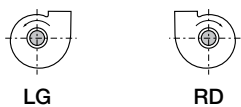
Size P4M-	Impeller Ø D2	B	H	L <sub>max</sub> for model	
				1	3
Q	1000	1490	1940	1610	1450
R	1122	1670	2150	1720	1540
S	1258	1860	2410	2020	1820
T	1413	2080	2680	2140	1920
U	1585	2340	3000	2290	2020

P4K



Size P4K-	Impeller Ø D2	B	H	L <sub>max</sub> for model	
				1	3
R	1122	1670	2150	2650	2470
S	1258	1860	2410	2910	2700
T	1413	2080	2680	3030	2800
U	1585	2340	3000	3180	2910

Housing Position and Rotation



Direction of rotation

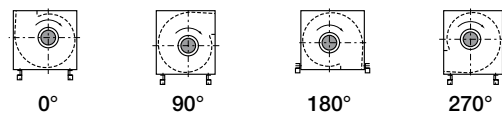
The direction of rotation is determined with viewing direction toward the drive side (motor):

LG = counterclockwise.

RD = clockwise.

LG and RD are available.

P2M

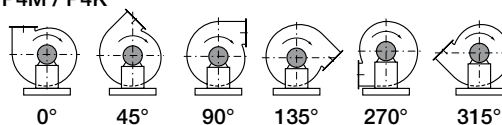


Housing positions

The housing positions of the P2M are possible in 90° increments for the following positions:

0°, 90°, 180° and 270° (see Fig.)

P4M / P4K



The housing positions of the P4M and P4K are possible in 45° increments for the following positions:

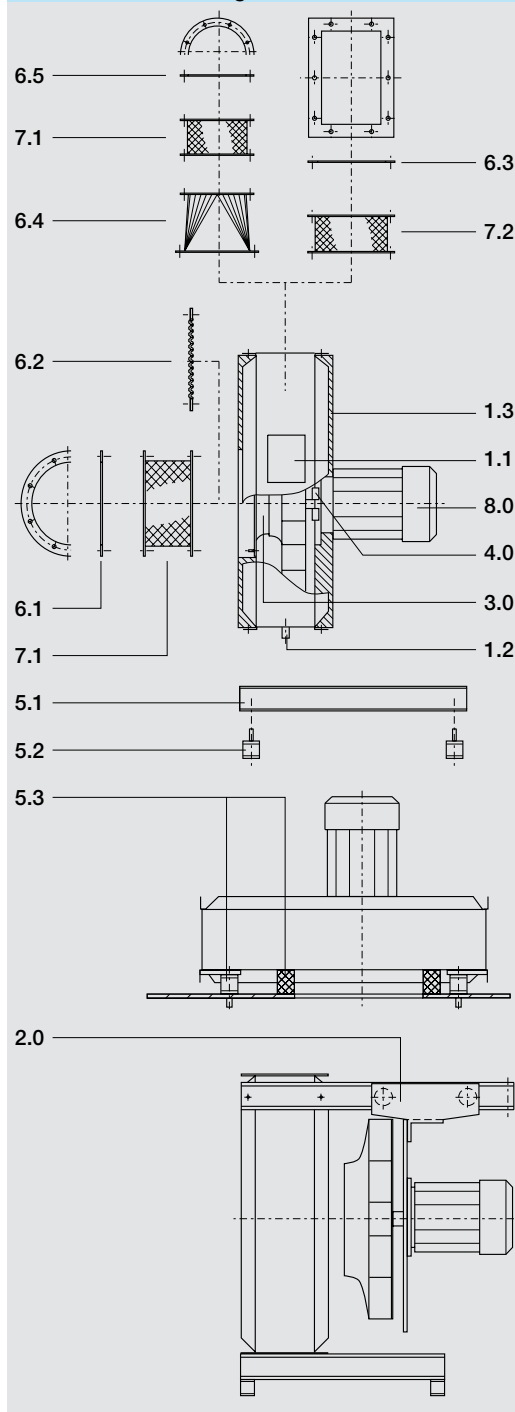
0°, 45°, 90°, 135°, 270° and 315° (see Fig.)

Housing positions 180° and 225° on request.

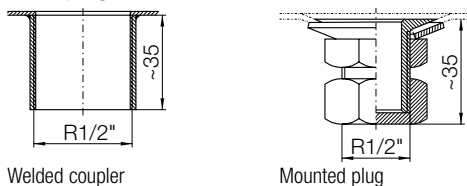
P2M / P4M / P4K

Industrial Process Fans  
with housing and direct drive

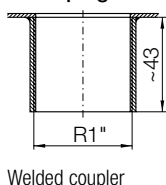
Accessories and Fittings



Drain plug for P2M



Drain plug for P4M/P4K



1.0 Housing fittings

1.1 Inspection opening

also available as a sealed opening.

1.2 Drain plug

P2M: Steel intake duct, R 1/2" external thread, seal plug.

P2M: Welded stainless steel coupler 1.4307, R 1/2" internal thread.

P4M/P4K: Welded coupler in steel or stainless steel 1.4307, R 1" internal thread.

1.3 Acoustic insulation, thermal insulation

2.0 Maintenance aid (only P2M)

Motor impeller unit can be pulled out on the motor side if there is a horizontal axis. For set-up with vibration dampers, mounting rails are required (see 5. Set-up systems).

3.0 Explosion protection

as specified in ATEX Category 2 or 3; gas or dust.

4.0 Sealing systems

Housing

- Housing welded watertight and sealed (standard for stainless steel material).  
An absolute seal cannot be achieved.

Shaft

- Stainless steel shaft seal to 300°C (standard for stainless steel housing and fans for medium temperatures >100°C).
- Shaft seal and aerodynamic seal (impeller back side blades).
- Shaft seal and V-ring seal, to 200°C.
- Shaft seal and V-ring seal and water deflector, to +200°C.

5.0 Set-up systems

5.1 Mounting rails Steel-coated, mounted, available for P2M.

Base frame is included in the standard scope of supply for P4M and P4K.

5.2 Vibration dampers

P2M: One set of rubber vibration dampers with two mounting rails (5.1).

P4M/P4K: One set rubber vibration dampers.

Spring vibration dampers available on request.

5.3 Mounting set for horizontal installation (only P2M)

For insulation of structure-borne noise, connection of fan intake and plant for minimum height and minimum costs. Suitable to +80°C.

- Includes:
- 1 pc. vibration seal
  - 4 pc. rubber vibration dampers with foot plates

6.0 Connection element, rigid

6.1 Mating flange suction-side in accordance with DIN 24154-R4.

6.2 Protective intake grille chrome-plated.

6.3 Mating frame pressure-side in accordance with DIN 24158-R4.

6.4 Transition piece rectangular to round DIN 24154, R4 welded-on.

6.5 Mating flange for transition piece in accordance with DIN 24154-R4.

6.6 Screws / seals

1 set for connection of a connecting element / compensator.

7.0 Connecting element, flexible

7.1 Compensators round, suction-side or for the pressure-side transition piece.

7.2 Compensators rectangular, pressure side, also watertight.

7.3 Baffle round and rectangular, internal

Protects sleeve if there is negative pressure and protects against particles

8.0 Drives

Motor

PTC thermistor temperature sensor, other numbers of contacts, protection classes, heat classes, voltages, frequencies, EEx e.

Thermal barrier

on the shaft passage, at displacement medium temperatures in excess of +100°C

We would be pleased to advise you: Phone +49 7942/101224

# P4R

## Industrial Process Fans with housing and belt drive

Pre-Selection																		
8000	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560
	20	21	22	22	23	24	25	27	31	34	39	42	49	53	61	66	77	
7100	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560
	17	18	18	19	20	21	22	24	27	30	33	36	43	46	53	57	66	
6300	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560
	14	15	16	16	17	18	19	21	24	26	29	32	37	41	46	51	58	
5600	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560
	12	13	13	14	14	15	17	19	21	23	25	28	33	36	40	45	51	
5000	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560	N3B-560
	10	11	11	12	12	13	15	17	18	21	23	26	29	33	36	37	45	
4500	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560	N3B-560
	9	9	10	10	11	12	13	15	17	18	20	23	26	29	32	36	40	
4000	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560	N3B-560	P3B-630	P3B-630
	8	8	9	9	10	11	12	13	15	16	19	20	23	26	29	32	36	
3550	H3B-315	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560	N3B-560	P3B-630	P3B-630	P3B-630
	7	7	7	8	8		11	12	13	15	16	18	21	24	26	30	32	
3150	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560	N3B-560	P3B-630	P3B-630	Q3B-710	Q3B-710
	6	6	6	7	8	8	10	10	12	13	15	16	19	21	24	26	30	
2800	H3B-315	H3B-315	H3B-315	H3B-315	J3B-355	J3B-355	K3B-400	K3B-400	L3B-450	L3B-450	M3B-500	M3B-500	N3B-560	N3B-560	P3B-630	P3B-630	Q3B-710	Q3B-710
	5	5	5	6	7	7	8	9	11	12	13	14	17	18	21	23	26	
2500	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630
	6	6	6	6,5	7	7,5	8	9	10	11	12	14	16	18	20	22	25	
2240	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630
	5	5	5,5	6	6	6,5	7	8	9	10	11	12	14	16	18	20	22	
2000	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630
	4,5	4,5	5	5	5,5	6	6,5	7	8	9	10	11	13	14	16	18	20	
1800	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630
	4	4	4	4,5	5	5	5,5	6	7	8	9	10	11	13	14	16	18	
1600	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630
	3	3	3,5	4	4	4,5	5	6	6,5	7	8	9	10	11	13	14	16	
1400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710
	3	3	3	3,5	4	4	4,5	5	5,5	6,5	7	8	9	10	11	12	14	
1250	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710
	2	2,5	3	3	3,5	3,5	4	4,5	5	6	6	7	8	9	10	11	12	
1120	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	N1B-710
	2	2	2,5	2,5	3	3	3,5	4	4,5	5	5,5	6	7	8	9	10	11	
1000	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	N1B-710
	2	2	2	2,5	2,5	3	3,5	3,5	4	4,5	5	5,5	6,5	7	8	9	10	
900	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	P1B-800	P1B-800
	1,5	2	2	2	2,5	2,5	3	3	3,5	4	4,5	5	6	6,5	7	8	9	
800	H1B-400	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	P1B-800	P1B-800
	1,5	1,5	2	2	2	2,5	2,5	3	3	3,5	4	4,5	5	6	6,5	7	8	
710	H1B-400	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	P1B-800	P1B-800	P1B-800
	1	1,5	1,5	2	2	2	2,5	2,5	3	3	3,5	4	4,5	5	5,5	6	7	
600	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	P1B-800	P1B-800	Q1B-900	Q1B-900
	1	1	1,5	1,5	1,5	2	2	2	2,5	2,5	3	3,5	4	4	4,5	5	6	
500	H1B-400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	P1B-800	P1B-800	Q1B-900	Q1B-900
	1	1	1	1,5	1,5	1,5	2	2	2	2,5	2,5	3	3	4	4	4,5	5	
400	H1B-400	H1B-400	J1B-450	J1B-450	J1B-450	K1B-500	K1B-500	L1B-560	L1B-560	M1B-630	M1B-630	N1B-710	N1B-710	P1B-800	P1B-800	Q1B-900	Q1B-900	Q1B-900
	0,5	1	1	1	1	1,5	1,5	1,5	2	2	2	2,5	3	3	3	3,5	4	
m³/h	4000	4500	5000	5600	6300	7100	8000	9000	10000	11200	12500	14000	16000	18000	20000	22400	25000	
m³/min	67	75	83	93	105	118	133	150	167	187	208	233	267	300	333	373	417	
m³/s	1,11	1,25	1,40	1,56	1,75	2	2,22	2,5	2,8	3,11	3,5	3,9	4,44	5	5,56	6,22	7	

Total pressure increase pF

Volume flow  $q_v$

The specification is on page 4  
See pages 12 and 13 for dimensions and accessories ...

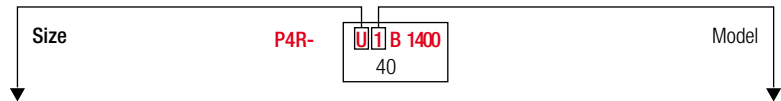


# P4R

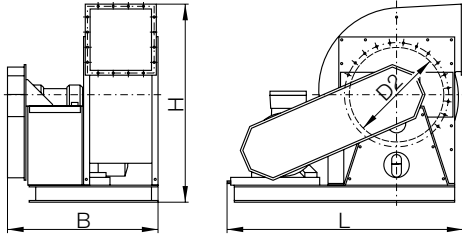
## Industrial Process Fans with housing and belt drive

Main Dimensions in mm, subject to change.

The dimensions can be determined from the Pre-Selection, as follows:

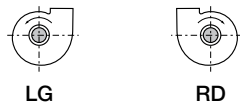


### P4R



Size	Impeller Ø D2	L <sub>max</sub>	H <sub>max</sub>	B <sub>max</sub> for model 1	3
<b>H</b>	447	1200	880	980	900
<b>J</b>	501	1270	950	1030	960
<b>K</b>	562	1460	1100	1090	1000
<b>L</b>	631	1560	1220	1200	1100
<b>M</b>	708	1650	1350	1290	1170
<b>N</b>	794	1780	1500	1400	1270
<b>P</b>	891	2050	1700	1520	1370
<b>Q</b>	1000	2150	1900	1620	1450
<b>R</b>	1122	2670	2150	1650	1430
<b>S</b>	1258	2800	2410	1820	1560
<b>T</b>	1413	2950	2680	1940	1700
<b>U</b>	1585	3060	3000	2190	1920

### Housing Position and Rotation



#### Direction of rotation

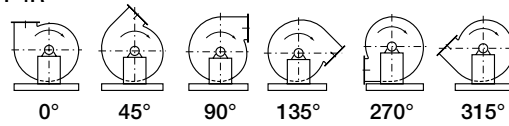
The direction of rotation is determined with viewing direction toward the drive side (motor):

**LG** = counterclockwise.

**RD** = clockwise.

LG and RD are available.

#### P4R



#### Housing positions

The housing positions of the P4R are possible in 45° for the following positions:

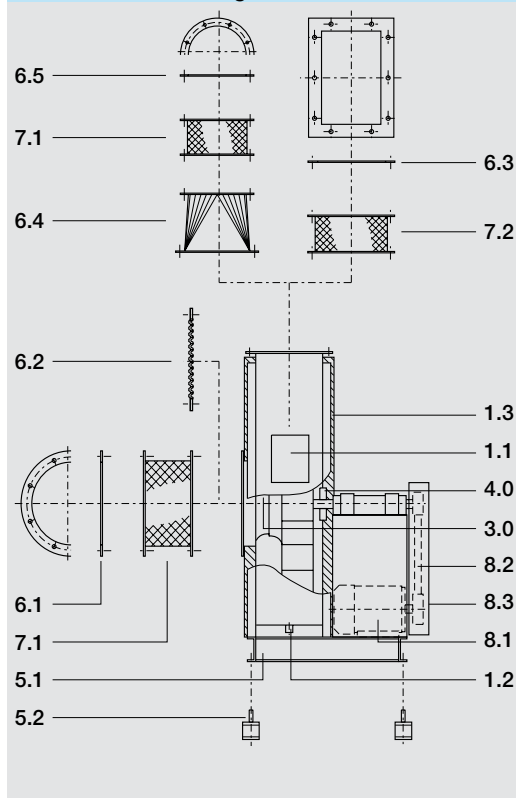
**0°, 45°, 90°, 135°, 270° and 315°** (see Fig.)

Housing settings 180° and 225° on request.

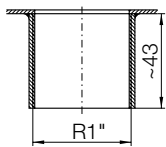
# P4R

# Industrial Process Fans with housing and belt drive

## Accessories and Fittings



### Drain plug for P4R



Welded coupler

### 1.0 Housing fittings

#### 1.1 Inspection opening

also available as a sealed opening.

#### 1.2 Drain plug

Welded coupler of steel or stainless steel 1.4307, R 1" internal thread.

#### 1.3 Acoustic insulation, thermal insulation

### 3.0 Explosion protection

In accordance with ATEX Category 2 or 3; gas or dust.

### 4.0 Sealing systems

#### Housing

- Housing welded watertight and sealed (standard for stainless steel material).  
An absolute seal cannot be achieved.

#### Shaft

- Stainless steel shaft seal to 300°C (standard for stainless steel housing and fans for medium temperatures >100°C).  
- Shaft seal and aerodynamic seal (impeller back side blades).  
- Shaft seal and V-ring seal, to 200°C.  
- Shaft seal and V-ring seal and water deflector, to +200°C.

### 5.0 Set-up systems

#### 5.1 Base frame

Included in the standard scope of delivery.

#### 5.2 Vibration dampers

One set of vibration dampers. Spring vibration dampers available on request.

### 6.0 Connection element, rigid

**6.1 Mating flange** suction-side in accordance with DIN 24154-R4.

**6.2 Protective intake grille** chrome-plated.

**6.3 Mating frame** pressure-side in accordance with DIN 24158-R4.

**6.4 Transition piece** rectangular to round DIN 24154, R4 welded-on.

**6.5 Mating flange** for transition piece in accordance with DIN 24154-R4.

#### 6.6 Screws / seals

1 set for connection of a connecting element / compensator.

### 7.0 Connecting element, flexible

**7.1 Compensators** round, suction-side or for the pressure-side transition piece.

**7.2 Compensators** rectangular, pressure side, also watertight.

**7.3 Baffle** round and rectangular, internal

Protects sleeve if there is negative pressure and protects against particles

### 8.0 Drives

#### 8.1 Motor

PTC thermistor temperature sensor, other numbers of contacts, protection classes, thermal classes, voltages, frequencies, EEx e.

#### 8.2 Belt drive

#### 8.3 Belt guard

#### 8.4 Thermal barrier

On the shaft passage for displacement medium temperatures over +100°C



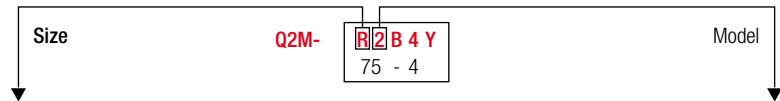


# Q2M

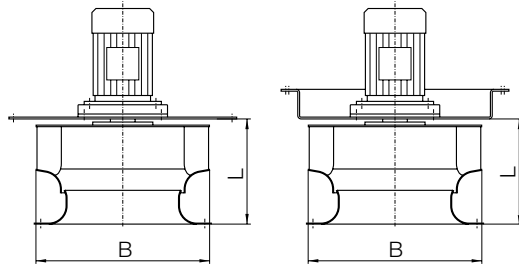
## Industrial Process Fans without housing, with direct drive

Main Dimensions in mm, subject to change.

The dimensions can be determined from the Pre-Selection, as follows:

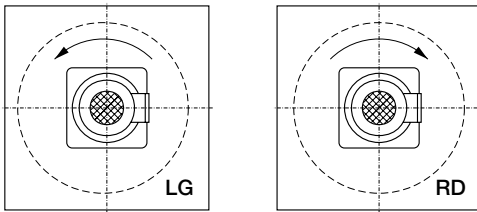


### Q2M



Size: Q2M-	Impeller Ø B	L <sub>max</sub> for model 1	2	3	5
D	282	180	–	140	–
E	316	–	180	–	–
F	355	210	200	180	130
G	398	250	210	200	150
H	447	270	250	210	160
J	501	290	270	250	180
K	562	310	290	270	190
L	631	390	310	290	230
M	708	430	390	310	240
N	794	480	430	380	–
P	891	540	480	430	–
Q	1000	600	540	480	–
R	1122	670	600	540	–
S	1258	750	670	600	–
T	1413	–	–	670	–

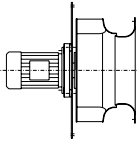
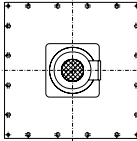
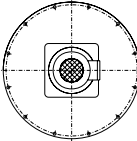
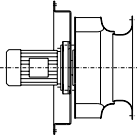
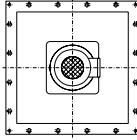
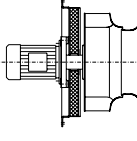
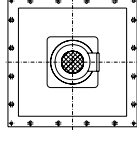
### Rotation



The direction of rotation is determined with viewing direction toward the drive side (motor):

- LG = counterclockwise.
- RD = clockwise.
- LG and RD are available.

### Kit System

Mounting plate Mounting frame	Possible Versions for from -20°C to t <sub>max</sub>	heat loss over the mounting plate app. (uninsulated ± 100%)
   <p>Mounting plate level/round level/square Motor, B5 mounting (to motor size 180)</p>	+300°C	100 %
  <p>Mounting frame Series 100 mm install depth ① Motor mounting B5 (to motor size 180) Motor mounting B3 (from motor size 200)</p>	+300°C	100 %
  <p>Mounting frame Series 100 mm install depth ① thermolock50 insulation, Motor mounting B5 (to motor size 180) Motor mounting B3 (from motor size 200)</p>	+500°C ②	30 % through <i>thermolock50</i>

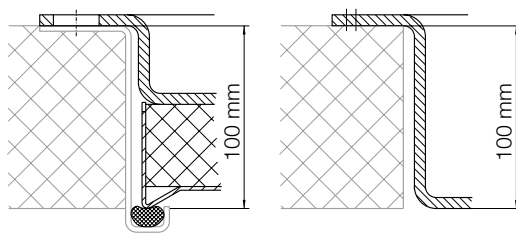
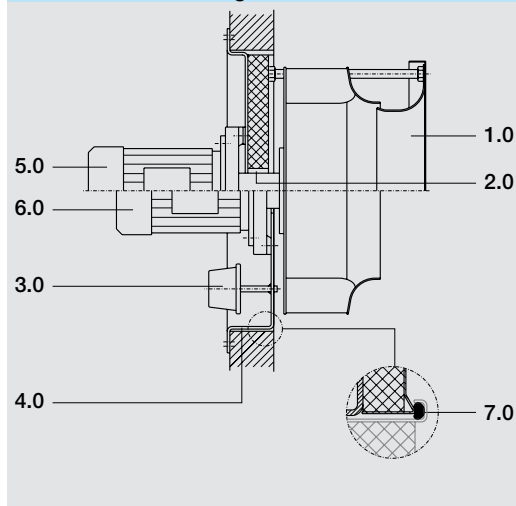
Thermal barrier for all versions for continuous temperatures over +100°C series

- ① „Custom install depth“ possible
- ② From +400°C impeller is always stainless steel 1.4307

# Q2M

# Industrial Process Fans without housing, with direct drive

## Accessories and Fittings



### 1.0 Suction duct nozzle

Standard, loose

#### Attached suction duct nozzle

For easy installation and optimal functional safety.  
Not available for round, level mounting plate.

### 2.0 Shaft seal

- Stainless steel shaft seal to +500°C  
(Standard if parts that contact the medium are stainless steel, For medium temperatures greater than +100°C and for *thermolock50*).
- Shaft seal and aerodynamic seal (impeller back side blades).
- Shaft seal and V-ring seal, to 200°C.
- Shaft seal and V-ring seal and water deflector, to +200°C.

### 3.0 Function monitoring

Through attached pressure cell with change-over contact.  
Not available for round, level mounting plate.

### 4.0 Custom mounting frame depth

The standard install depth with mounting frame is 100 mm.

### 5.0 Explosion protection

Prepared for ATEX Category 3; gas or dust.

### 6.0 Drives

#### Motor

PTC thermistor temperature sensor, other numbers of contacts, protection classes, heat classes, voltages, frequencies, EEx e.

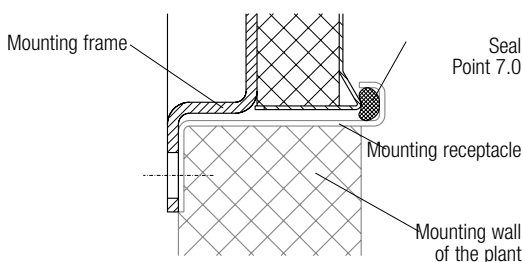
#### Thermal barrier

on the shaft passage, at displacement medium temperatures in excess of +100°C

### 7.0 Ceramic fibre seal

For interior seal *thermolock50* strictly required.

## *thermolock50*



### The highly efficient thermal insulation from Nicotra Gebhardt: *thermolock50*

Up to this point the usual solution consists of a thick insulation, most frequently with rock wool. However fans insulated in this manner are complex in design, and thus expensive. Now we know that they also frequently retain a lot less heat than was formerly assumed.

Through an extensive series of tests we have learned the following: It is not thickness of the insulation material alone that determines how good the thermal insulation of a fan is, the number and type of thermal bridges is also an important factor.

With *thermolock50* we have systematically minimised the thermal bridges on the basis of this knowledge.

#### The result

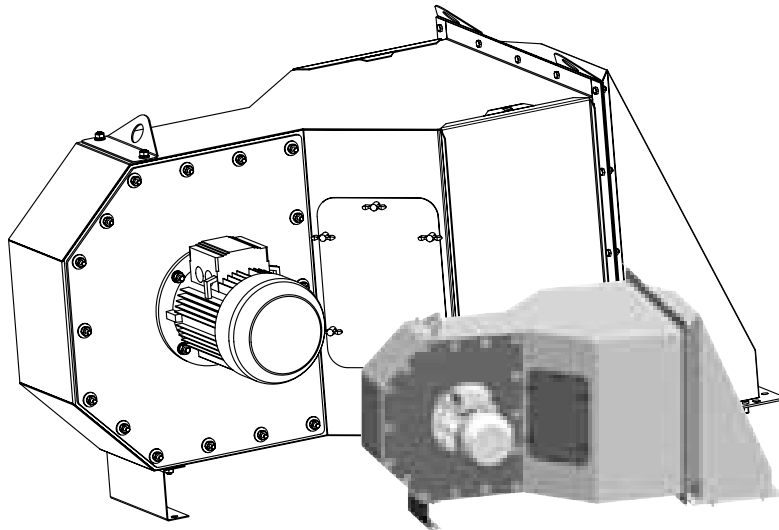
Example: Fan frame size K, +300°C continuous temperature of the displacement medium, +20°C ambient temperature; thermal losses only 1 kW/h, measured and confirmed.  
Thus this insulation is better than conventional insulation of 100 mm and more rock wool.

#### Additional advantages:

- Fewer thermal bridges due to ceramic fibre-seal (always use!).
- Hot gases do not migrate into the area between the mounting receptacle and the mounting frame. Consequence: Even less energy loss, even better contact protection.
- If the dew point is underranged sooting of the insulation material cannot occur, the insulating effect remains permanently intact.
- Particles of insulating material do not get into the displacement medium.

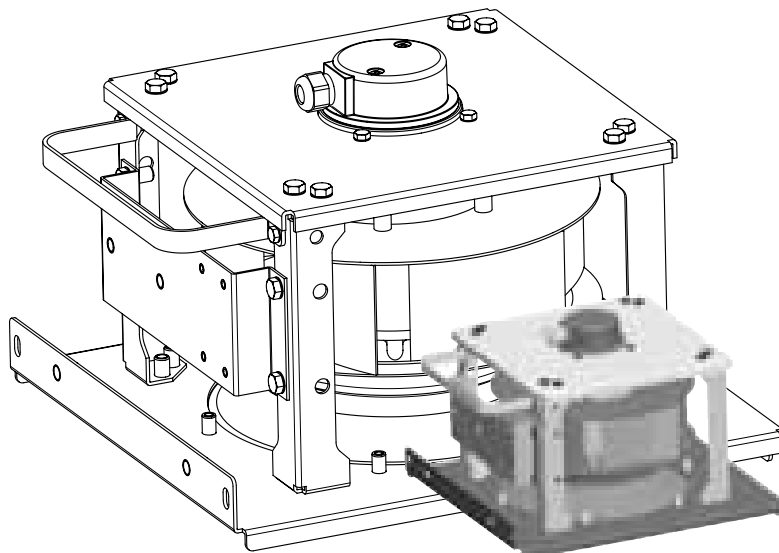
## Customer-specific process air fans

In addition to the broad line of standardised centrifugal fans for ventilation and air-conditioning technology and process air technology, and the many variants that can be generated with the product line, Nicotra Gebhardt also has years of experience in the area of customer-specific fan solutions. If the requirement is appropriate even totally new developments are possible.



### **Optimal function, best price**

- Do you want to standardise the ventilation and air technology in your machine or plant?
- Do you have a project for which you require higher quantities of a fan that optimally ensures that your goals relative to function and price are achieved?
- Are you looking for an experienced partner that will develop and supply this fan solution in close collaboration with you?



# Customer-specific process air fans

## What we offer you

Our specialists for customer-specific process air fans support your project: Competently, and they are fast and flexible.

Scope of service:

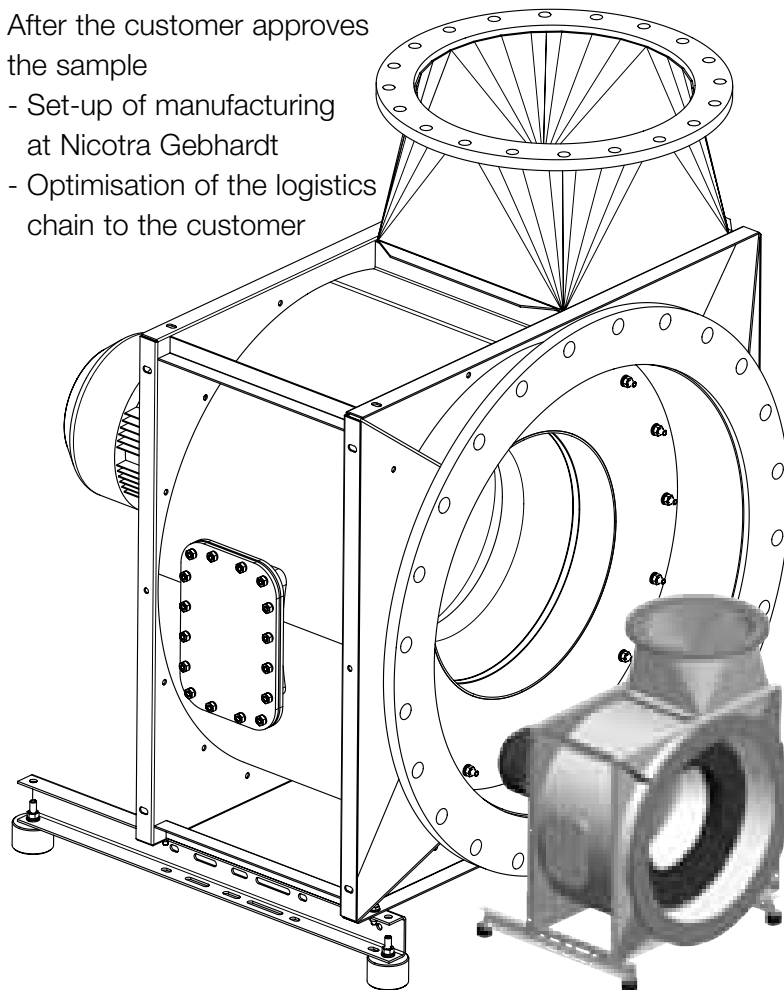
- Competent consulting
- Reviewing the specification for your fan:
  - Is the target price feasible?
  - Is the desired delivery date feasible?
  - Can the technical requirements be implemented?
  - Is a customer-specific solution economically practical?

After the customer approves the project

- Complete development of the fan
- Building the sample and measuring it on standard test stands
- Supporting the customer with the practical test in the plant
- Optimisation of the fan based on the results of the practical test

After the customer approves the sample

- Set-up of manufacturing at Nicotra Gebhardt
- Optimisation of the logistics chain to the customer



*Many successful projects for our customers in different industries speak for themselves.*

*We would be pleased to advise you: Phone +49 7942/101224*

## Our industrial competence

Each industry imposes its own requirements on ventilation and air-conditioning technology. We have employees who are specialised in specific industries. For example ...



- Wind turbines
- Systems for environmental engineering
- Machines for the food products industry
- Rail vehicles
- Plastic machines



*We would be pleased to advise you: Phone +49 7942/101224*

## Our industrial competence



Our specialists support you in selecting the suitable fan and with the engineering for its proper technical flow integration in your system.

Together with you they will work out the optimal fan solution, quiet and powerful, for example

- for installation where space is at a premium
- for minimum weight
- for minimum maintenance requirements
- for maximum service life
- for minimum energy consumption
- for different supply systems
- for variable speed drives
- with appropriate corrosion protection
- for operation with vibration from outside



# Fans for comfort applications, also for process air technology

## The extensive Nicotra-Gebhardt product line

Also in the field of process air technology there are applications for which our ventilation and air-conditioning technology fans are ideally suitable.

Choose the fan that is right for your application from a large standardised product line - with the aid of our electronic selection program proSELECTA II - fast and easy.



If centrifugal fans are required for ventilation and air-conditioning technology, we are the first company you should speak with.

From housing fans with belt drive to built-in fans without housing with direct drive.

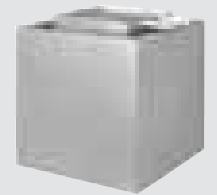
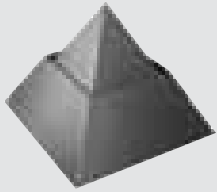
We offer the largest and most extensive product line for this area - and naturally also the matching system accessories.

Volume flows to 300,000 m<sup>3</sup>/h



# Fans for comfort applications, also for process airtechnology

## The extensive Nicotra-Gebhardt product line



### The extensive roof fan product line from Nicotra Gebhardt has set worldwide standards.

Today we offer roof fan systems to meet your specific requirements.

Profit from the advantages of our product diversity:

- Perfect quality in all models
- Uniform accessories for all models
- Maximum variability for individual requirements

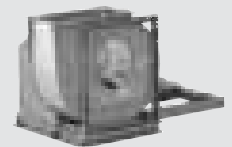
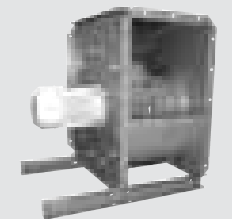
Volume flows to 57,000 m<sup>3</sup>/h

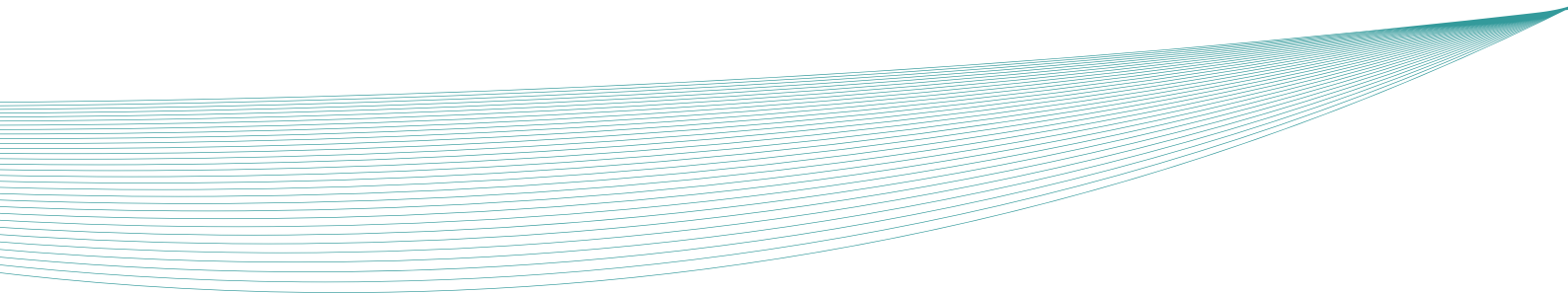


### He who understands fire, masters the smoke extraction.

With our wall fans, roof fans, centrifugal fans, axial fans, and impulse fans, we master every form of smoke extraction, regardless of the application. Thus we ensure maximum safety from the underground garage to the roof and satisfy all legally required standards.

Volume flows to 150,000 m<sup>3</sup>/h





**NICOTRA** | Gebhardt

**motralec**

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