

# LCPR

with backward-curved blades

## Description Applications

Low-pressure radial fan designed for the conveyance of minimal air or gas-flow which is corrosive, slightly dust-polluted or explosive.

### General specifications

- LCPR is fitted with circular inlet and outlet connectors
- casing manufactured in PVC or PP
- fan impeller fitted with backward-curved blades and made of PP
- operates within a range of flow of up to 1.5 m<sup>3</sup>/s and range of pressure of up to approximately 1000 Pa
- suitable for indoor and outdoor installation
- manufactured in six different sizes
- can be supplied with direct or belt drive, or fitted with a two-speed motor
- fan and motor are fitted to a joint stand made of galvanized steel with painted surface finish in accordance with VVS-AMA 83, environmental standard M4 A.

### Standard sizes

LCPR fans are manufactured in six different sizes: 016, 020, 025, 031, 035, 040. The designations refer to the inlet and outlet dimensions in centimetres.

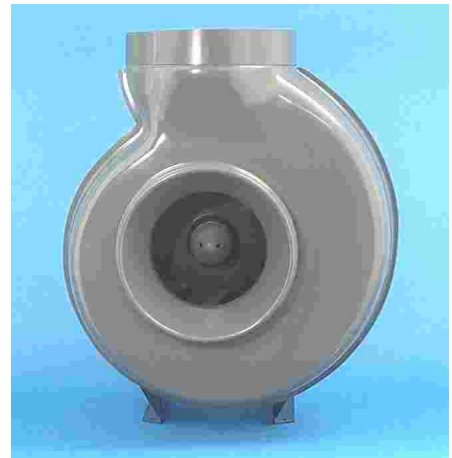
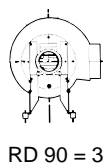
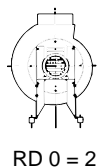
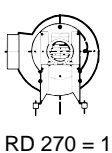
### Program text

Radial fan, Arex model LCPR, fan impeller made of PP with backward-curved blades and shroud plate. Casing manufactured in PVC (or PP).

### Outlet position

The illustrations below show the fans from the drive side.

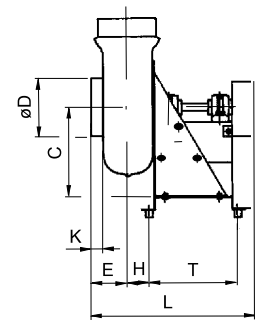
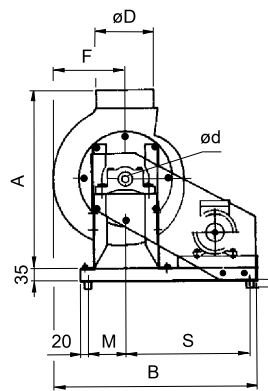
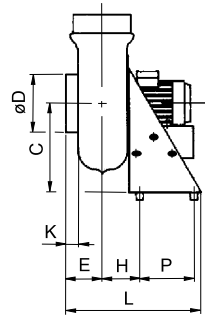
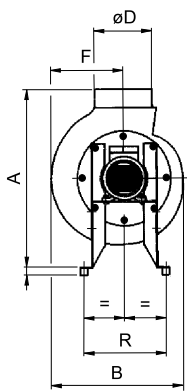
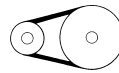
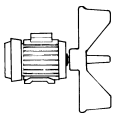
LCPR is only available in RD, i.e. right-handed layout.









## Specifications

LCPR		-XXX-XX-X-X-X	
Sizes	016, 020 025, 031 035, 040		
Drive type	11= Belt drive 20= Direct drive 40= 60= 80= 24= 46= 48=	2800 rpm 1400 rpm 900 rpm 700 rpm 2800/1400 rpm 1400/900 rpm 1400/700 rpm	
Outlet position	1, 2, 3		
See illustration below			
Materials, casing	0=PVC, 1=GRP, 2=PP 3=Various materials		
Materials, impeller	2 = PP		

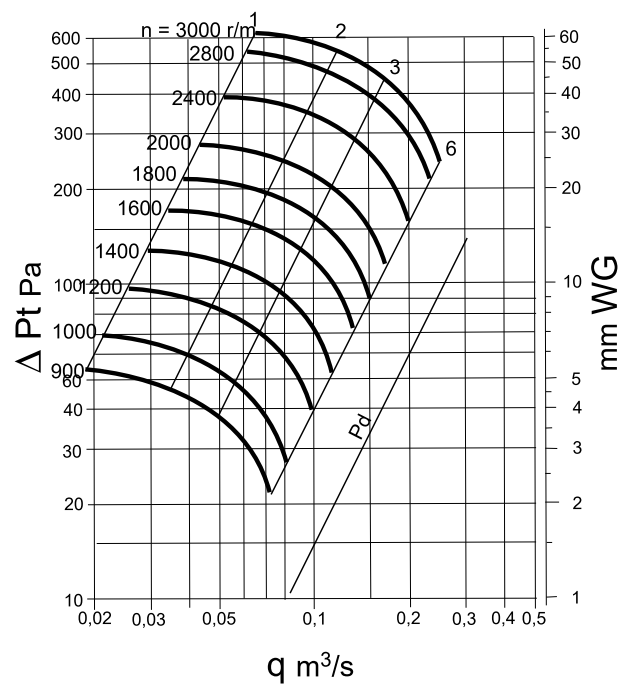
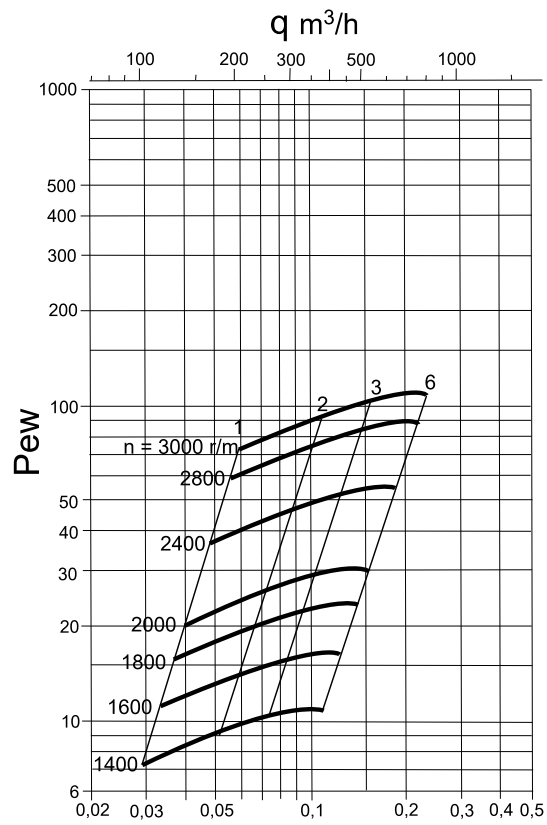
# LCPR



LCPR	A mm	B mm	C mm	ØD mm	E mm	F mm	H mm	K mm	L mm	P mm	R mm	S mm	T mm	kg ca
016 MT63	495	375	245	160	105	205	100	35	370	150	214			6
016 MT71	495	375	245	160	105	205	100	35	370	150	214			6
016 	495	565	245	160	105	205	55	35	455			342	245	20
020 MT63	605	465	300	200	115	260	120	35	425	150	214			7
020 MT71	605	465	300	200	115	260	120	35	425	150	214			7
020 	605	620	300	200	115	260	75	35	485			342	245	20
025 MT63	620	510	300	250	120	285	130	35	440	150	214			8
025 MT71	620	510	300	250	120	285	130	35	440	150	214			8
025 	620	645	300	250	120	285	85	35	500			342	245	20
031 MT71	775	615	400	315	160	350	170	35	595	230	280			15
031 	775	850	400	315	160	350	110	40	660			475	330	35
035 MT71	830	680	400	355	170	390	185	40	620	230	280			15
035 MT80	830	680	400	355	170	390	185	40	620	230	280			15
035 	830	885	400	355	170	390	125	40	695			475	330	35
040 MT71	1050	810	540	400	205	460	210	40	670	230	280			20
040 MT80	1050	810	540	400	205	460	210	40	670	230	280			20
040 	1050	1015	540	400	205	460	155	40	750			525	330	45

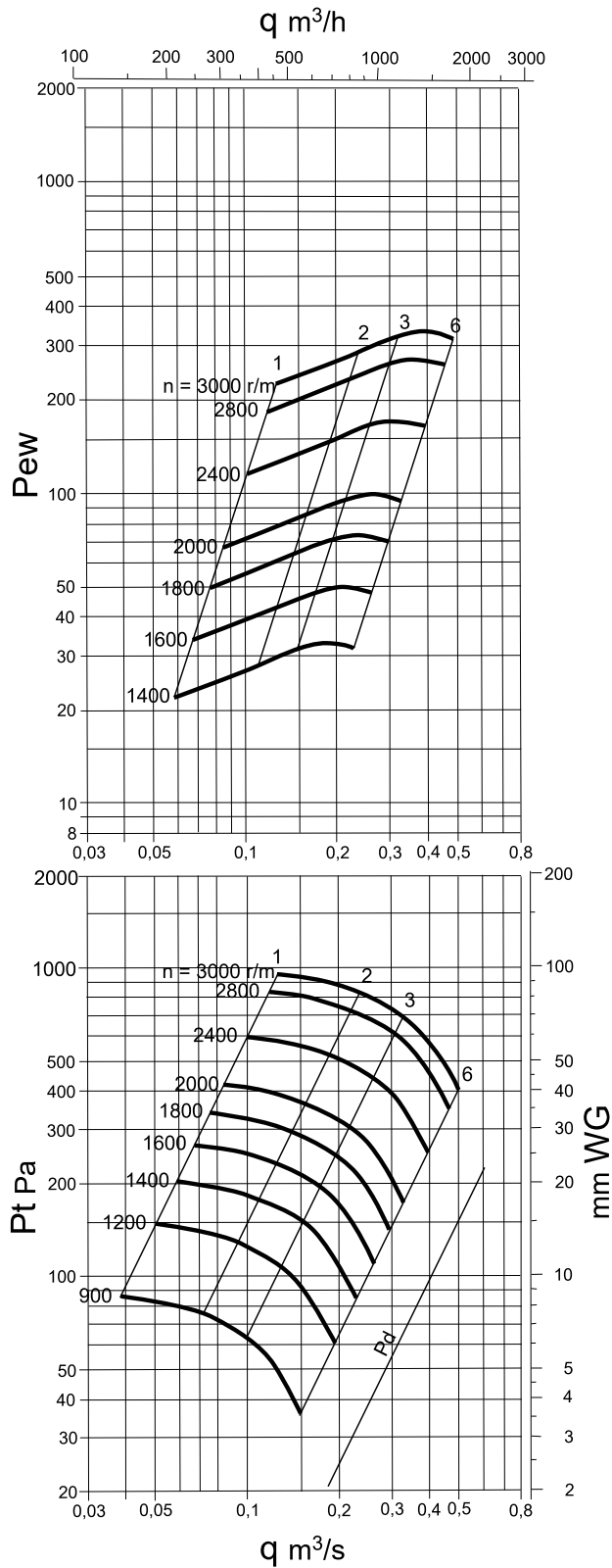
# LCPR 016

$n \leq 4150 \text{ rpm}$



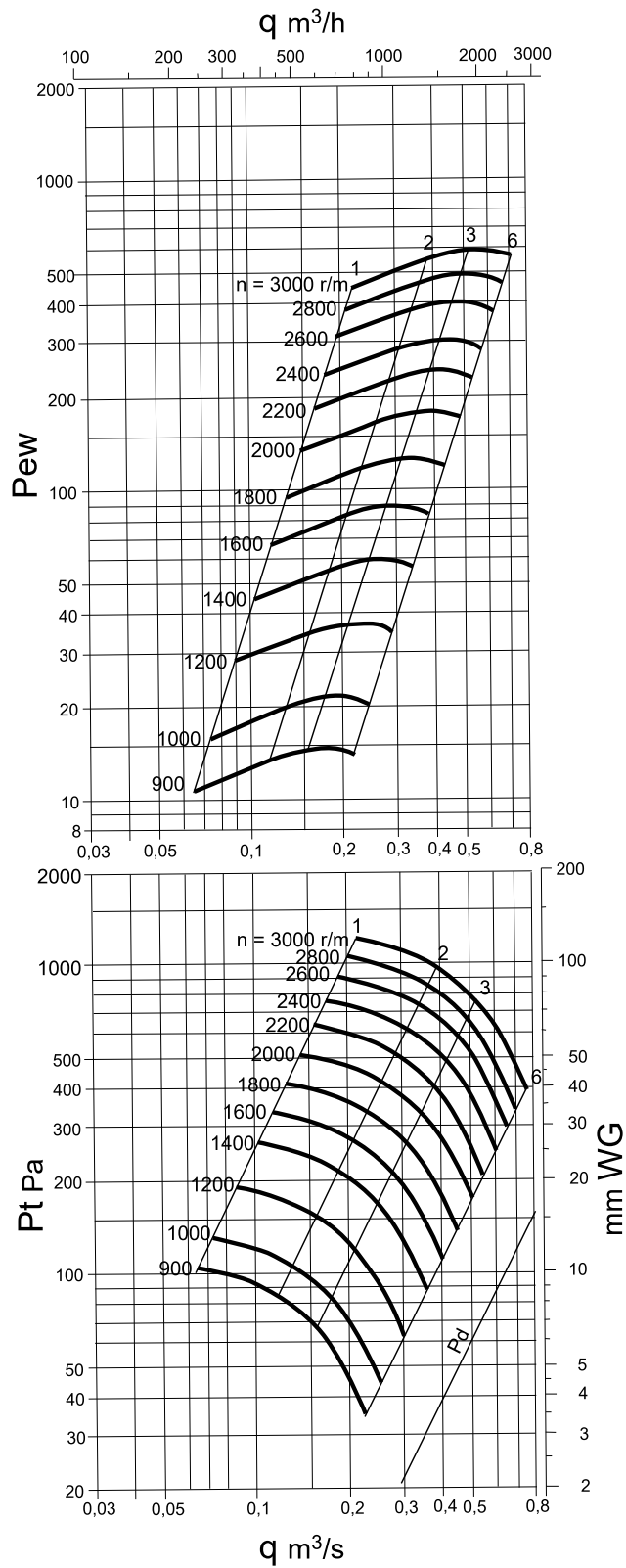
# LCPR 020

$n \leq 3750$  rpm



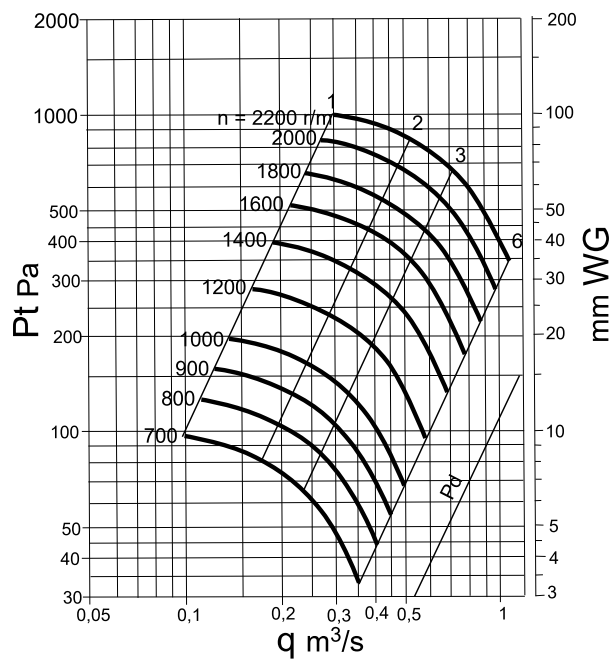
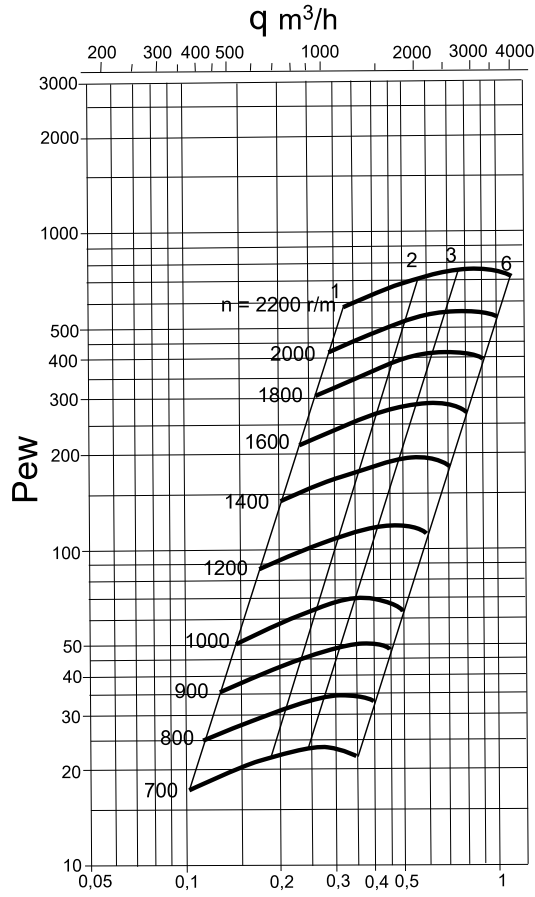
# LCPR 025

$n \leq 3100 \text{ rpm}$



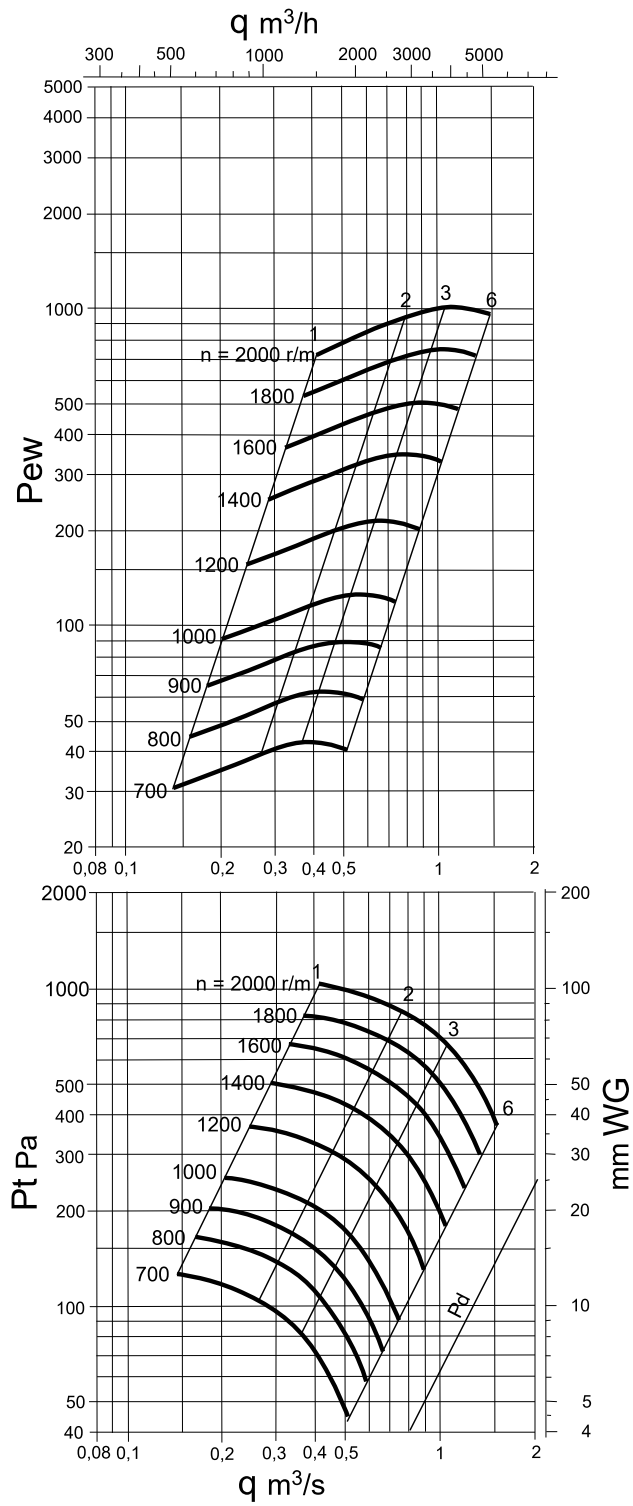
# LCPR 031

$n \leq 2200$  rpm



# LCPR 035

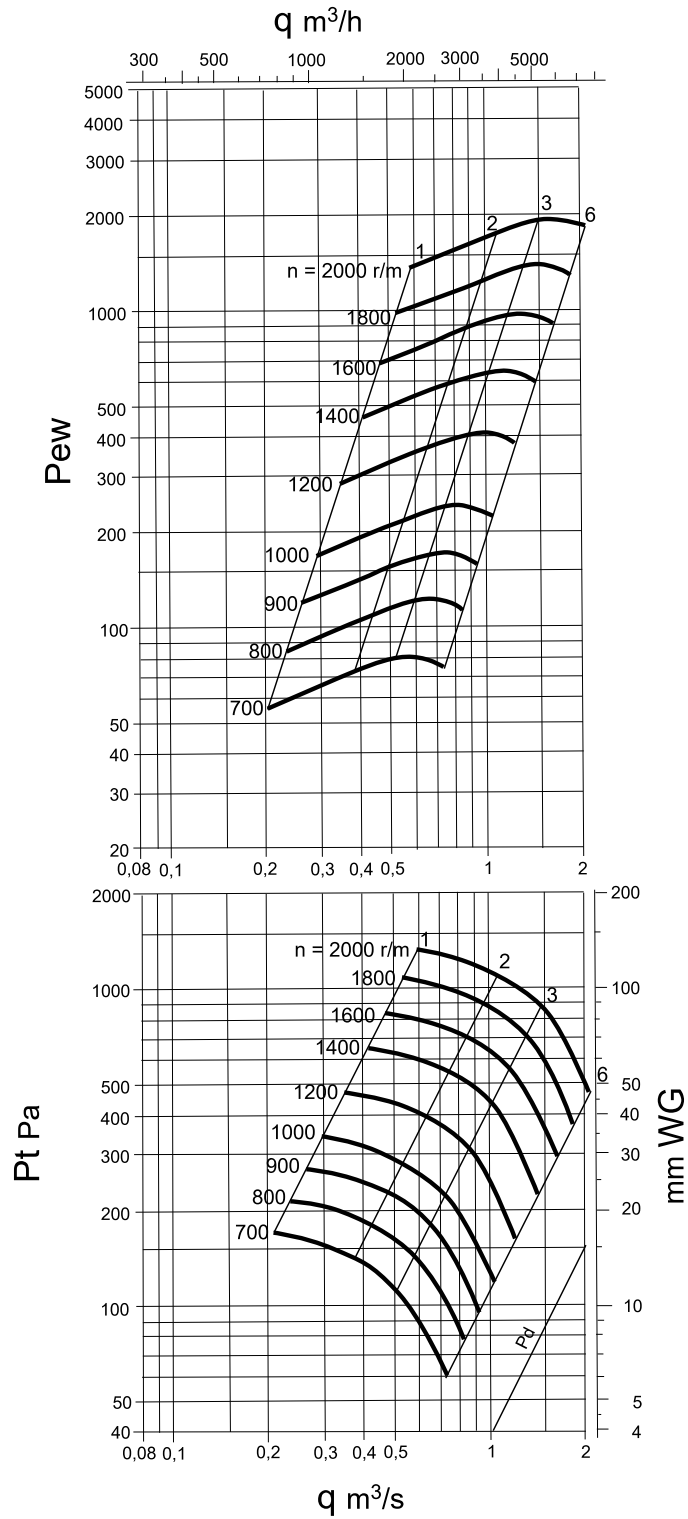
$n \leq 1950 \text{ rpm}$





# LCPR 040

$n \leq 1750 \text{ rpm}$

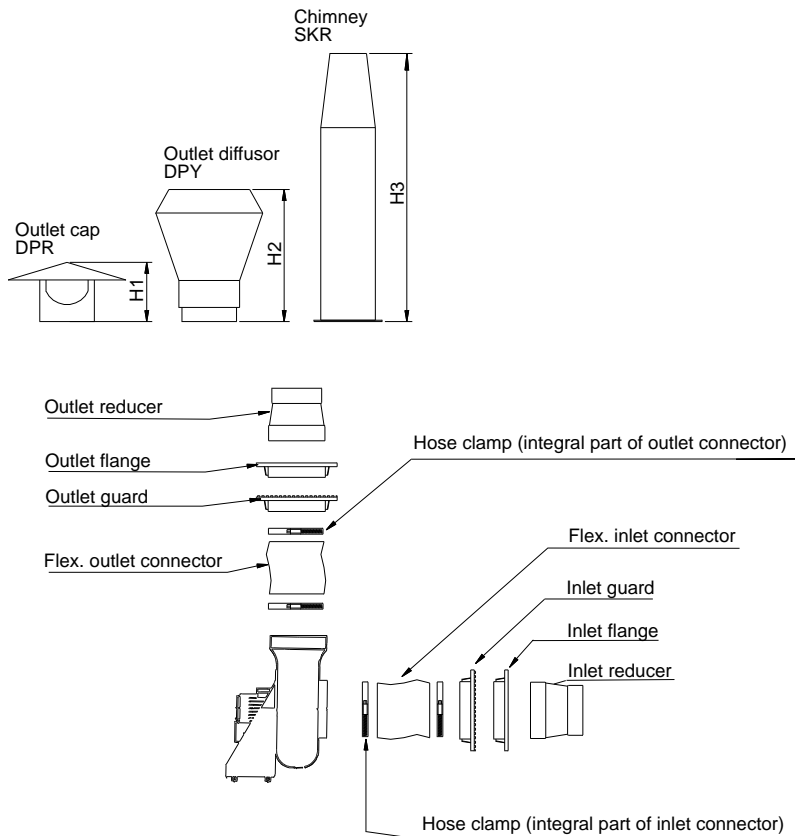




# LCPR

## Accessories

A wide range of accessories are available for LCPR fans, as shown in the exploded diagrams and specifications below.



### Specifications

- Drive Motor, see motor table for LCPR
- PVC weather protection for motor
- Anti-vibration mountings
- Complementary belt drive with belts, pulleys, bushing and belt guard
- Other Drainage stud at lowest point
- Splinter protector

LCPR	DPR	DPY	SKR
	H1	H2	H3
016	148	340	600
020	173	435	600
025	190	505	800
031	223	615	1000
035	243	695	1000
040	250	740	1200

In an order or program text, a complete fan specification might read as follows:

1 radial fan LCPR 025-11-2-0-1. Motor 0.55 kW 1420 rpm, 400 V, 50 Hz, 3-phase. Belt drive rotation speed 2100 rpm. Inlet connector. Reducer. Outlet diffusor DPY. All inlet and outlet components made of PVC.

Note. Accessories manufactured in same material as fan casing.



# INSTALLATION AND MAINTENANCE

## Plastic centrifugal fans

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# INSTALLATION AND MAINTENANCE

## 1. GENERAL

The radial fans are either direct or belt driven to suit the intended application. The impeller is statically and dynamically balanced.

**WARNING!** Do not start working on the fan unless the power switch or the lockable main power switch has been switched in the OFF position.

### 1.1 TRANSPORT AND LIFTING

All handling should be carried out carefully.

Do not fix lifting equipment to plastic components or fan shaft. Lifting equipment should be affixed to a frame or steel foundation.

### 1.2 DELIVERY CHECK

Check carefully for signs of transport damage and make sure that the impeller rotates easily. In the event of damage to the equipment **make an immediate report to the carriers concerned**. Failure to report damage will result in the invalidity of the transportation insurance.

### 1.3 STORAGE BEFORE INSTALLATION

The fan shall be storage in a dry and heated up area, to avoid any risk of getting condensates inside the electric motor that could cause corrosion as a result.

## 2. INSTALLATION

### 2.1 FITTING AND SECURING THE FAN

The fan should be bolted (with or without the anti-vibration mountings) to a stable flat surface.

### 2.2 CONNECTION OF DUCTING

The fan casing should not support the weight of any ducting connected to the fan. Flexible duct sleeves should be used as ducting joints.

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## INSTALLATION AND MAINTENANCE

### 2.3 GUARDS

Industrial safety legislation in most countries specifies that rotating machine components must be provided with reliable guards.

Such instructions must be observed when installing the fan. **If the inlet or outlet of the fan is open it must be provided with a protective grill, which is available as an accessory.**

### 2.4 ELECTRIC INSTALLATION

(To be carried out by an authorised electrician)

After connecting the fan motor, check that the impeller rotates in the direction shown by the arrow on the end wall of the casing.

The fan should be equipped with a safety-isolating switch (not included in the fan delivery). Before work is started on the fan, the safety-isolating switch must always be in position OFF.

## 3. TESTING

**Before testing the fan check that:**

1. The fan and motor have been correctly aligned and bolted down.
2. The belt or belts have been correctly tensioned, where applicable see point 5.3.
3. The bearings have been lubricated, where applicable see point 5.4
4. The anti-vibration mountings have been correctly fitted.
5. The flexible duct joints are tight and the fan casing does not support the weight of ducts.
6. Guards have been fitted and are well secured.
7. No tools or other foreign objects have been left in the casing or ducts.

**Start the fan and check that:**

1. The fan rotates in the correct direction.
2. There are no abnormal vibrations or noise.
3. The bearing temperatures are normal, where applicable see point 5.4.
4. The belt tension is correct after 24 hours operation, adjust if necessary.

When starting the fan after installing a new or renovated an existing bearing the bearing temperature may rise to a level which is 10-15°C higher then when the fan runs steadily. This condition is normal due to the fact that the bearing has been lubricated. The temperature will return to normal on steady fan operation after about 24 hours running time depending on the amount of grease that are filled in the bearing housing. (An excessive amount of grease is a common cause of high temperature). The above condition may also occur after periodically lubricating the bearing. The temperature generally increases as described above but will generally stabilise after the fan has run for 24 hours.

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## INSTALLATION AND MAINTENANCE

### 4. FAN OPERATION

The fan should not be exposed to impact or shocks. Make sure no particles adhere to impeller as this can result in imbalance and a breakdown. If particles can be drawn into the fan inlet must be fitted with a grille, which is available as an accessory. The transported air's temperature must not exceed the values stated below:

Fan material	Maximum temp. °C
PVC	+55 °C
PP	+60 °C
PEH	+70 °C
GRP	+90 °C

(GRP quality withstanding higher temperatures can be supplied on request)

### 5. MAINTENANCE

#### 5.1 GENERAL INSPECTION

Rotating machine components such as: bearings, motors and belt assemble are subjects to wear. Increased temperatures, high degrees of contamination and high speed increase the level of wear. In some installations ducts, which results in erosion damage to the impeller and fan casing, can occur. In other installations the dust can form a layer of grime on the impeller and fan casing. Layers of grime reduce the fan's output and give rise to imbalance resulting in breakdown.

#### After 1000 hours running time or when necessary:

1. Check that the impeller rotates easily and that it does not come into contact with the casing.
2. Check that fan does not vibrate or is noisy.
3. Check that the bearing temperature is normal. Noise from bearing can be an indication that lubrication is required.
4. Check all belts and their tension.
5. If necessary clean the fan casing and impeller.

#### Twice a year or when necessary:

1. Lubricate the bearings
2. Check that the impeller is undamaged and sits securely.
3. Check that the motor's fixture is in good condition and that bolts are tightened.
4. Clean all dirt, dust and oil from motor.

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## INSTALLATION AND MAINTENANCE

### 5.2 MOTOR

Follow the manufacturer's instruction regarding lubrication and maintenance.

### 5.3 BELT DRIVE (if applicable)

Control the belt tension by pressing down the free belt length using the force F. The correct belt tension while applying pressure is equal to 1-1.5% of free belt length. The force F is defined in the table below.

Minimum pulley dia.	F (Newton) Minimum	F (Newton) Maximum
63 – 89	11	16
90 – 114	12	18
115 – 152	13	20

### 5.4 BEARINGS (if applicable)

Fans driven by V-belts are fitted with two bearings, which are lubricated using grease. The bearings should at least be lubricated 2 times/year, see appendix 1. Increased temperature conditions as well as other loads reduce the time interval between lubrication. Every increase of 15 °C over the 70 °C bearing temperature results in halving of the lubrication interval. The maximum permitted temperature of the grease must not be exceeded. The bearing housing is not usually fitted with a grease nipple. Grease is applied by removing the inner section of the bearing. All old grease should be removed before apply the new grease. The bearing housing should not be fitted completely with grease. Too much grease can cause extreme increase in temperature. After lubrication make sure the bearing runs easily without noise.

## 6. DISMANTLING THE IMPELLER

1. Remove the rear plate from the fan casing. (If the case is not fitted with a rear plate remove the inlet plate)
2. Dismantle the fan housing.
3. If belt driven, remove the bearing's clamping sleeve from the shaft.
4. Pull out the impeller and shaft.
5. Pull of the impeller from the shaft.

To assemble follow the above instructions in the reverse order.

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## EG-Försäkran om överensstämmelse



**TILLVERKARE:**

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**MASKIN:**

Radialfläktar med beteckningar:  
LCPA            MCBP        HCTP  
LCPB            MCPP  
LCPR            MCTP  
LCPS

**FÖRSÄKRAN:**

Försäkrar under eget ansvar att angiven maskin  
är tillverkad enligt följande direktiv och standarder.  
Maskindirektivet 98/37/EEG  
Lågspänningsdirektivet 73/23/EEG inkl. tillägg  
EMC-direktivet 89/336/EEG inkl. tillägg

**ÅBEROPAD STANDARD:**

SS EN 60 034-1  
SS EN 292-1-2  
SS EN 294

**FÖRBEHÅLL:**

Denna försäkran gäller under förutsättning att fläkten  
installeras enl. våra anvisningar.  
Se installation och skötselanvisningar.

Valdemarsvik 2003  
AB AREX

A handwritten signature in blue ink, appearing to be a stylized name or initials.

