

# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 2000 - Poulibloc 3000



**CATEGORY 2  
ZONE 21**

## General information



Poulibloc 2000 geared motors with parallel gears are used to adapt the speed of the electric motor to that of the driven machine. Their size is therefore determined by the motor power ( $P$ ) expressed in kilowatts (kW) and the output rotation speed of the gear box ( $n_s$ ) in revolutions per minute ( $\text{min}^{-1}$ ). The main characteristic of the speed reducers is the rated output torque ( $M_{nS}$ ) expressed in Newton-metres (N.m) :

$$M_{nS} = \frac{P \times 9550}{n_s} \times \text{efficiency}^1$$

1.  $\eta$  gearbox x  $\eta$  belt-pulley.

- A range of eight sizes for Pb 2000 series : 20, 21, 22, 23, 24, 25, 26, 27.  
Rated output torque : from 100 N.m to 13 000 N.m.  
Power rating : from 0.25 to 55 kW.  
Reduction ratios : from 3 to 25.  
From one to two reduction stages.  
High efficiency : 96 % to 98 %.  
Reversible.
- A range of three sizes for Pb 3000 series : 30, 31, 32, lubricated with grease.  
Nominal output torque up to 820 N.m.
- A range of three sizes for Pb 3000 series : 31, 32, 33, lubricated with oil.  
Rated output torque up to 1100 N.m.

Gearboxes within the Poulibloc range benefit from the ATEX **certification** : INERIS n° 03 ATEX 3005 X.

## Construction

### Description of Poulibloc (Pb) gearboxes - Zone 21



**II 2D T 125 °C**

Component	Materials	Remarks
Housing	Cast iron	- use of FGL cast iron (flake graphite : tensile strength 150 MPa ) single component perlite to ensure the complete sealing of the unit - monobloc with reinforced internal ribbing to absorb vibrations and noise, and to increase rigidity - they are compact and meet industrial application-related requirements
Gears	Steel and C 45	- cut by gear hob, they are heat treated by cementation, then undergo a final machining. The quality and the precision of the gear cutting allow maximum torque with minimum noise level
Shaft	Steel	- grinding of the sealing surfaces - taper bush and tightening key - diameter tolerances in accordance with IEC 72-1 (DIN 748)
Seals	Acrylonitrile	- anti-dust lipseals according to DIN 3760 AS form
Torque bracket	Steel	- can be orientated in three positions when mounting the belt tension arm - delivered with Poulibloc 2000
Lubrication	Oil	- in accordance with ISO 6743 / 6 - For Pb 2000 : delivered without oil, fill in accordance with the operating position. It is fitted with drain, level and vent plugs - For Pbh 31 to Pbh 33 delivered without oil, fill in accordance with the operating position. It is fitted with drain, level and vent plugs
	Grease	- For Pb 30 to Pb 32 delivered lubricated for 10 000 hours operation
Mounting		AP : gearbox with input shaft
Standard motor		LSPX : multi-voltage 220/380 V - 230/400 V - 240/415 V - IP 65 standard protection
Cast iron motor		FLS PX : asynchronous motor with cast iron casing, IP 65 protection
Other motors		LSMV PX : asynchronous motor optimised for variable speed
Finish	Paint	Shade : RAL 1007 (yellow), system I (1 polyurethane vinyl layer of 25/30 $\mu\text{m}$ )

# Electromechanical products

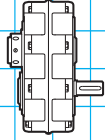
## Atmospheres containing explosive dust

### Poulibloc 2000

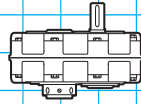


**CATEGORY 2**  
**ZONE 21**

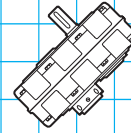
## Mounting positions



Horizontal shaft

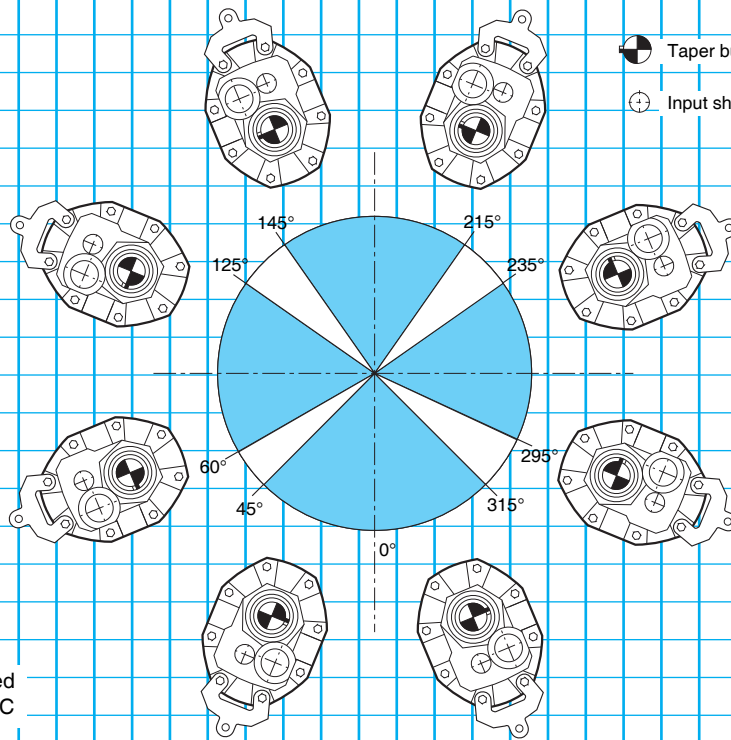


Vertical shaft



Other positions : see below

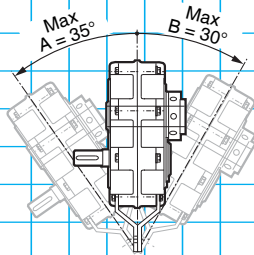
### Other positions



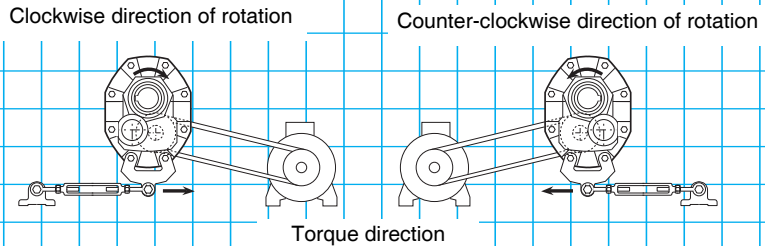
Backstop not recommended between 125° C and 235° C

Optimum position

### Limits to mounting arrangements



### Torque arm



# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 2000



**CATEGORY 2**  
**ZONE 21**

## Adaptation possibilities

Leroy-Somer offers several drives for its gearboxes which meet a diverse range of needs. They are described below and offered in this catalogue.

For other drives, consult Leroy-Somer technical specialists who will be pleased to assist you.

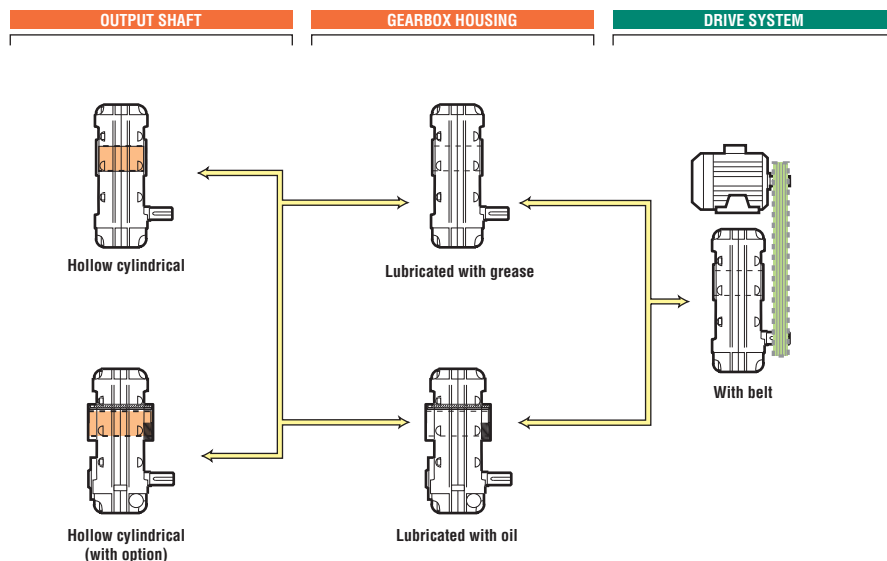
**Poulibloc gearboxes can be used in conjunction with the following drives :**

- **3-phase asynchronous motors :**  
- LSPX motors from 0.18 to 55 kW,

**A backstop can be fitted on Poulibloc gearboxes series Pb 2000.**

The backstop is delivered separately in kit form for types Pb 20--, 21--, 2212, 2220, 23--, 2412, 2420, 27--.

It can be delivered ready fitted on types Pb 2205, 2405, 25--, 26--.



## Designation / Coding

<b>ATEX II 2D T 125°C</b>	<b>Pb</b>	<b>2512</b>	<b>12.44</b>	<b>80</b>	<b>AD</b>
Specific application	Type	Size	Exact reduction	Diameter of hollow output shaft or taper bush	Backstop

**Codification example :**

Poulibloc 2512, 22 kW, 112 min<sup>-1</sup>, class II, taper bush for zone ATEX 21

**Designation**

ATEX II 2D T 125°C Pb 2512 AD Ø 80

**Code**

-

All the products in this catalogue have a code.

The coding table is incorporated in the price list with the list of designations.

Each electromechanical product is classified first in order of power and then in order of speed.

# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 3000



**CATEGORY 2**  
**ZONE 21**

## Adaptation possibilities

Leroy-Somer offers several drives for its gearboxes which meet a diverse range of needs. They are described below and offered in this catalogue.

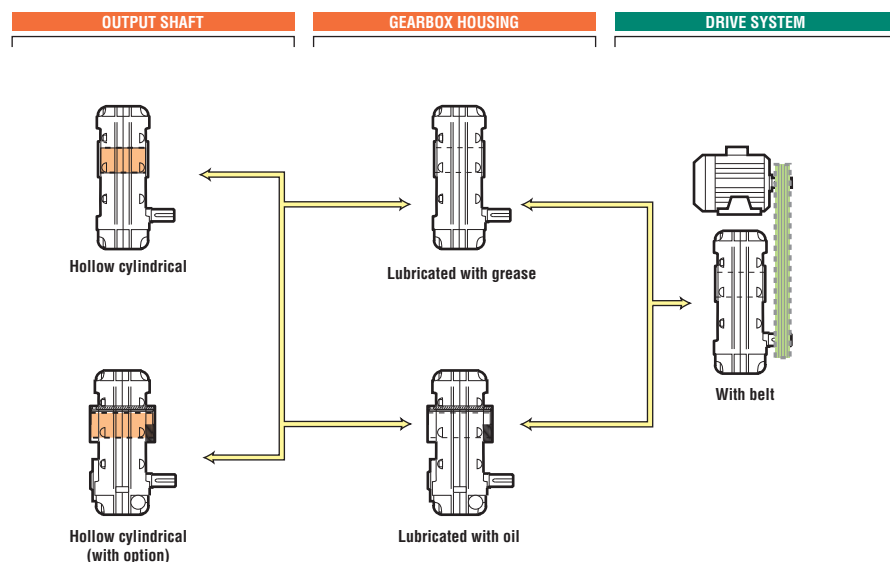
For other drives, consult Leroy-Somer technical specialists who will be pleased to assist you.

*Poulibloc 3000 can be used in conjunction with the following drives :*

- 3-phase asynchronous motors :  
- LSPX motors from 0.18 to 11 kW,

*A backstop can be fitted on Poulibloc gearboxes series Pbh 3000 (lubricated with oil).*

*The backstop is delivered ready-fitted. The direction of rotation (clockwise or counter-clockwise) must be specified - side view opposite primary shaft.*



## Designation / Codification

<b>ATEX II 2D T 125°C</b>	<b>Pb</b>	<b>3108</b>	<b>8</b>	<b>35</b>	<b>AD</b>
Specific application	Type	Size	Exact reduction	Hollow output shaft diameter	Backstop

*Codification example :*

Poulibloc 3108, 3 kW, 200 min<sup>-1</sup>, class II, hollow shaft Ø 35 for zone ATEX 21

**Designation**

ATEX II 2D T 125°C Pb 3108 Ø 35

**Code**

-

All the products in this catalogue have a code.

The coding table is incorporated in the price list with the list of designations.

Each electromechanical product is classified first in order of power and then in order of speed.



# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 3000

**CATEGORY 2**  
**ZONE 21**

## Selection

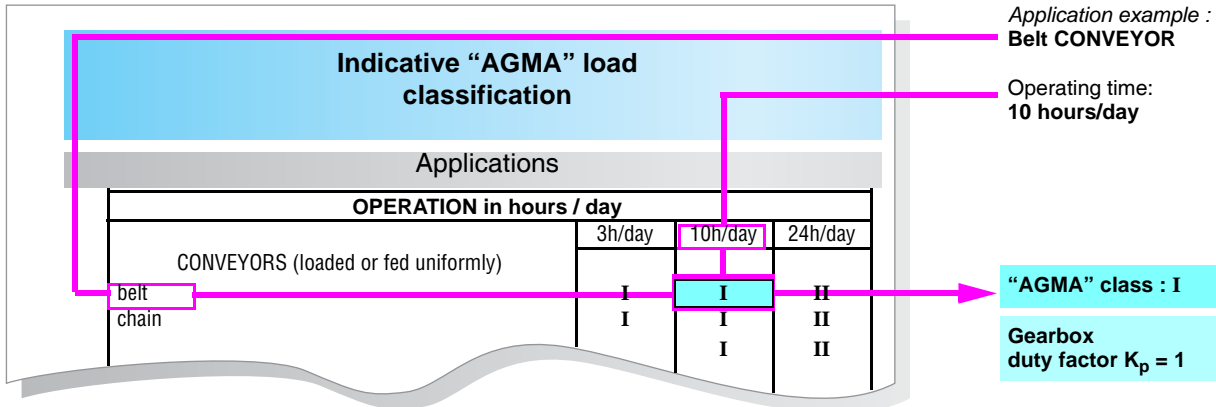
The selection of a gearbox or of a geared motor should take account of the application. Some of these applications are listed in the indicative "AGMA" load classification, page D0.10.

The opposite table summarises the relationship between the "AGMA" class and the gearbox duty factor  $K_p$ .

"AGMA" class	Gearbox duty factor $K_p$
I	1
II	1.4
III	2

## 1<sup>st</sup> case. – Your application is listed

Follow the indicative "AGMA" load classification table, page D0.10 of this catalogue. ▼



## 2<sup>nd</sup> case. – Your application is not listed

The "AGMA" selection class is defined by the daily operating time and by the application operating type, according to the table below. ▼

Type of application	Daily operating time	"AGMA" class
Shock-free, few starts	10 hours / day	I
Damped shocks	10 hours / day	II
Shock-free, few starts	24 hours / day	III
Violent shocks, many starts	10 hours / day	III
Damped shocks	24 hours / day	III

# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 2000 - Poulibloc 3000



**CATEGORY 2**  
**ZONE 21**

## Selection

Pb 2000, Pb 3000  
II 2D T 125°C - ZONE 21

Maximum quantity by order Pb 2000

i	Pb 20	Pb 21	Pb 22	Pb 23	Pb 24	Pb 25	Pb 26	Pb 27
5	5	5	5	5	5			-
12	5	5	5	5	5	5	5	1
15								-
20	5	5	5	5	5	5	5	1
25	5	5	5	5	5	5	5	-
NU								
bush Ø 20								
bush Ø 25								
bush Ø 30								
bush Ø 35								
bush Ø 40								
bush Ø 45								
bush Ø 50								
bush Ø 55								
bush Ø 60								
bush Ø 65								
bush Ø 70								
bush Ø 75								
bush Ø 80								
bush Ø 85								
bush Ø 90								
bush Ø 95								
bush Ø 100								
bush Ø 110								
bush Ø 120								
torque arm								
backstop								
	<b>Page(s) of dimensions</b>							
Pb 20 to 27	D5.14	D5.14	D5.14	D5.14	D5.14	D5.14	D5.14	D5.15
Driven shaft	D5.16							

Maximum quantity by order Pb 3000

i	Pb 30	Pb 31	Pbh 31	Pb 32	Pbh 32	Pbh 33
5	5	5				
8	-	5		5		5
NU Ø 25						
NU Ø 30						
NU Ø 35						
NU Ø 40						
NU Ø 45						
NU Ø 50						
NU Ø 55						
NU Ø 60						
backstop	-	-		-		
	<b>Page(s) of dimensions</b>					
Pb 30 to 32	D5.17					
Pb h 31 to 33	D5.18					



# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 2000 - Poulibloc 3000

**CATEGORY 2**  
**ZONE 21**

## Exact reductions

Pb 2000, Pb 3000

II 2D T 125°C - ZONE 21

VERSION WITHOUT OIL				GREASE VERSION				VERSION WITHOUT OIL									
Exact reductions				Exact reductions				Exact reductions									
Type	Reduction index	Designation	Reduction	Type	Reduction index	Designation	Reduction	Type	Reduction index	Designation	Reduction						
<b>Pb 20--</b>	5	Pb 2005	5.5	<b>Pb 30--</b>	5	Pb 3005	5	<b>Pb 21--</b>	5	Pb 2105	5.62						
	12	Pb 2012	12.92		<b>Pb 31--</b>	8	Pb 3108		8	<b>Pb 31--</b>	5	Pbh 3105	5.08				
	15	Pb 2015	15.54	<b>Pb 32--</b>		5	Pb 3205		5.07		<b>Pb 32--</b>	5	Pbh 3205	5.07			
	20	Pb 2020	20.57			<b>Pb 22--</b>	8		Pb 3208			7.85	<b>Pb 33--</b>	8	Pbh 3308	7.85	
	25	Pb 2025	24.75	<b>Pb 23--</b>	5		Pb 2305		5.62	<b>Pb 24--</b>	5	Pb 2405		5.5			
<b>Pb 21--</b>	12	Pb 2112	11.47		<b>Pb 25--</b>	12	Pb 2512	12.44	<b>Pb 26--</b>		12	Pb 2612	12.5				
	15	Pb 2115	14.55			<b>Pb 27--</b>	15	Pb 2515			14.75	<b>Pb 27--</b>	15	Pb 2615	14.66		
	20	Pb 2120	20.56				<b>Pb 32--</b>	20			Pb 2520		20.48	<b>Pb 27--</b>	20	Pb 2620	21.09
	25	Pb 2125	26.07					<b>Pb 33--</b>			25		Pb 2525		24.29	<b>Pb 27--</b>	25
	<b>Pb 22--</b>	5	Pb 2205	5.54			<b>Pb 26--</b>			5	Pb 2605		5.5	<b>Pb 27--</b>	12		Pb 2712
12		Pb 2212	11.58	<b>Pb 27--</b>	12	Pb 2612		12.5	<b>Pb 27--</b>	20	Pb 2720	20.86					
15		Pb 2215	14.54		<b>Pb 27--</b>	15		Pb 2615		14.66	<b>Pb 27--</b>						
20		Pb 2220	19.51			<b>Pb 27--</b>		20		Pb 2620		21.09	<b>Pb 27--</b>				
25		Pb 2225	24.49					<b>Pb 27--</b>		25		Pb 2625			24.75	<b>Pb 27--</b>	
<b>Pb 23--</b>	5	Pb 2305	5.62				<b>Pb 27--</b>							<b>Pb 27--</b>			
	12	Pb 2312	12.21	<b>Pb 27--</b>								<b>Pb 27--</b>					
	15	Pb 2315	15.24		<b>Pb 27--</b>						<b>Pb 27--</b>						
	20	Pb 2320	20.57			<b>Pb 27--</b>							<b>Pb 27--</b>				
	25	Pb 2325	25.67					<b>Pb 27--</b>							<b>Pb 27--</b>		
<b>Pb 24--</b>	5	Pb 2405	5.5				<b>Pb 27--</b>							<b>Pb 27--</b>			
	12	Pb 2412	12.28	<b>Pb 27--</b>								<b>Pb 27--</b>					
	15	Pb 2415	14.41		<b>Pb 27--</b>						<b>Pb 27--</b>						
	20	Pb 2420	20.76			<b>Pb 27--</b>							<b>Pb 27--</b>				
	25	Pb 2425	24.35					<b>Pb 27--</b>							<b>Pb 27--</b>		
<b>Pb 25--</b>	5	Pb 2505	5.69				<b>Pb 27--</b>							<b>Pb 27--</b>			
	12	Pb 2512	12.44	<b>Pb 27--</b>								<b>Pb 27--</b>					
	15	Pb 2515	14.75		<b>Pb 27--</b>						<b>Pb 27--</b>						
	20	Pb 2520	20.48			<b>Pb 27--</b>							<b>Pb 27--</b>				
	25	Pb 2525	24.29					<b>Pb 27--</b>							<b>Pb 27--</b>		
<b>Pb 26--</b>	5	Pb 2605	5.5				<b>Pb 27--</b>							<b>Pb 27--</b>			
	12	Pb 2612	12.5	<b>Pb 27--</b>								<b>Pb 27--</b>					
	15	Pb 2615	14.66		<b>Pb 27--</b>						<b>Pb 27--</b>						
	20	Pb 2620	21.09			<b>Pb 27--</b>							<b>Pb 27--</b>				
	25	Pb 2625	24.75					<b>Pb 27--</b>							<b>Pb 27--</b>		
<b>Pb 27--</b>	12	Pb 2712	12.34				<b>Pb 27--</b>							<b>Pb 27--</b>			
	20	Pb 2720	20.86	<b>Pb 27--</b>								<b>Pb 27--</b>					



# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 2000



**CATEGORY 2**  
**ZONE 21**

**AGMA I**

**Pb 2000**  
**II 2D T 125°C - ZONE 21**

### Pb 2000

min <sup>-1</sup>	LSPX (kW)																				
	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11	15	18.5	22	30	37	45	55
	i: 12,15,20,25 <sup>1</sup>																				
10				2125																	
11.2																					
12.5																	2720				
14		2025					2225		2325		2425		2525		2625						
16						2125															
18																					
20												2420									
22.5								2220													
25																					
28			2020					2120		2320		2420		2520		2620		2720			
31.5									2220												
35.5																					
40																					
45																					
50																					
56				2015					2115	2215		2315		2415		2515		2615	♦	2712	
63																				♦	
71																				♦	♦
80																2412	♦	♦			♦
90											2212					♦	♦	♦			♦
100															2312	♦	♦	♦	♦	♦	♦
112					2012					2112		2212				♦	♦	♦	2512	♦	♦
125													2212			♦	♦	♦	2412	♦	♦
140																♦	♦	♦	♦	♦	♦

min <sup>-1</sup>	i: 5 <sup>1</sup>																				
	50										2105										
56																2405				2605	♦
63										2105											♦
71												2205								2505	♦
80																2305	♦			♦	♦
90										2105							♦	2405			♦
100																					♦
112																					♦
125						2005											♦	♦	♦	♦	♦
140																	♦	♦	♦	♦	♦
160																	♦	♦	♦	♦	♦
180																	♦	♦	♦	♦	♦
200																	♦	♦	♦	♦	♦
225																	♦	♦	♦	♦	♦
250																	♦	♦	♦	♦	♦
280																	♦	♦	♦	♦	♦
315																	♦	♦	♦	♦	♦
355																	♦	♦	♦	♦	♦

1. :i Poulibloc selected depending on the pulley ø ratio of 1/1, 1/2 or 1/3.  
♦ : S1, consult Leroy-Somer.

# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 2000



**CATEGORY 2**  
**ZONE 21**

**AGMA II**

**Pb 2000**  
**II 2D T 125°C - ZONE 21**

### Pb 2000

		LSPX (kW)																					
		0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11	15	18.5	22	30	37	45	55	
min <sup>-1</sup>		i: 12,15,20,25 <sup>1</sup>																					
10																							
11.2										2425													
12.5															2720								
14		2025		2125		2225		2325		2425	2525		2625										
16															2720								
18																							
20											2420												
22.5								2220															
25																							
28		2020					2120			2320		2420	2520		2620		2720						
31.5																							
35.5									2220														
40																							
45																							
50																							
56			2015						2115	2215		2315		2415	2515		2615			2712			
63																							
71																							
80											2212				2412								
90																							♦
100																							♦
112				2012						2112			2312			2412	2512		2612			2712	♦
125												2212						♦	♦	♦	♦	♦	♦
140																		♦	♦	♦	♦	♦	♦

		i: 5 <sup>1</sup>																					
50									2105						2405								
56																							
63									2105				2305										
71																							
80																							♦
90										2105												2605	♦
100													2205					2405					♦
112				2005																			♦
125																							♦
140																							♦
160																					2505	♦	♦
180													2105			2305						♦	♦
200																						♦	♦
225																		♦	♦			♦	♦
250																		♦	♦		2405	♦	♦
280																		♦	♦			♦	♦
315																					2105 ♦	♦	♦
355																						♦	♦

1. :i Poulibloc selected depending on the pulley  $\sigma$  ratio of 1/1, 1/2 or 1/3.  
♦ : S1, consult Leroy-Somer.

# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 2000



**CATEGORY 2**  
**ZONE 21**

**AGMA III**

**Pb 2000**

**Ex II 2D T 125°C - ZONE 21**

### Pb 2000

LSPX (kW)

min <sup>-1</sup>	LSPX (kW)																					
	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11	15	18.5	22	30	37	45	55	
10																						
11.2		2125																				
12.5																						
14	2025		2125	2225																		
16																						
18																						
20																						
22.5																						
25																						
28		2020																				
31.5																						
35.5																						
40																						
45																						
50																						
56			2015																			
63																						
71																						
80																						
90																						
100																						
112																						
125																						
140																						

i: 12,15,20,25<sup>1</sup>

50																						
56																						
63																						
71																						
80																						
90																						
100																						
112																						
125																						
140																						
160																						
180																						
200																						
225																						
250																						
280																						
315																						
355																						

1. :i Poulibloc selected depending on the pulley ø ratio of 1/1, 1/2 or 1/3.

♦ : S1, consult Leroy-Somer.

# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 3000



**CATEGORY 2**  
**ZONE 21**

**AGMA I**

Pb 3000, Pbh 3000  
II 2D T 125°C - ZONE 21

### Pb 3000 - Pbh 3000

min <sup>-1</sup>	LSPX (kW)													
	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11
30														
35.5								3208						
40					3108									
45	3006													
50											3308			
60														
70														
80									3206			3306		
90								3106						
100				3005										
120													3305	
135														
150														
180												3205		3304
200											3105			
250						3004								
270														
300														
350														3204
375														
500														3104
600								3003						
750														
1000												3002		

1. :i Poulibloc selected depending on the pulley ø ratio.



# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 3000



**CATEGORY 2**  
**ZONE 21**

**AGMA II**

**Pb 3000, Pbh 3000**  
**II 2D T 125°C - ZONE 21**

## Pb 3000 - Pbh 3000

		LSPX (kW)													
		0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11
min <sup>-1</sup>		i : 5 and 8 <sup>1</sup>													
30				3108			3208								
35.5	3006														
40															
45															
50															
60						3106					3308				
70									3206						
80			3005												
90													3306		
100															
120															
135									3105			3205			
150					3004									3305	
180															
200															
250															
270															
300								3003			3104				3304
350														3204	
375															
500															
600															
750									3002						
1000															

1. :i Poulibloc selected depending on the pulley ø ratio.

# Electromechanical products

## Atmospheres containing explosive dust

### Poulibloc 3000



**CATEGORY 2**  
**ZONE 21**

**AGMA III**

Pb 3000, Pbh 3000  
II 2D T 125°C - ZONE 21

### Pb 3000 - Pbh 3000

min <sup>-1</sup>	LSPX (kW)													
	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11
30														
35.5				3208										
40														
45			3108											
50	3006													
60										3308				
70							3206							
80					3106									
90														
100														
120			3005									3306		
135														
150										3205				
180								3105						
200														
250					3004								3305	
270														
300														
350												3204		
375										3104				
500							3003							3304
600														
750														
1000										3002				

1. :i Poulibloc selected depending on the pulley ø ratio.



