

# BOXER 81 / BOXER 90

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## AIR-OPERATED DOUBLE DIAPHRAGM PUMPS



Suction / delivery connections	1" f BSPP (*)
Air fitting	3/8" f BSPP
Max flow rate*	110 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry running**	4 m
Max negative suction head - pump primed	9,5 m
Max diameter suspended solids	4 mm
Noise level	70 dB
Volume per stroke	100 cc



[\*] NPT fittings only on request

\* The curves and performances refer to pumps with immersed suction and open delivery outlet with water at 20 °C and vary according to the composition materials.

\*\* Value depends on pump configuration.



- Product designed and constructed in Italy
- PATENTED stall-prevention pneumatic circuit
- Operates with NON-lubricated air
- SELF-PRIMING
- Supports dry running
- ATEX certification for ZONE 1 - ZONE 2
- IECEx certification
- Adjustable operating speed
- Versatile
- Suitable for pumping fluids with high viscosity and for demanding applications
- Usable with fluids containing suspended solids
- Option of suspended installation
- Manifolds available with stainless steel reinforcement rings for PP - PP + CF - PVDF pumps
- Suitable for continuous use

# BOXER 81 / BOXER 90

AIR-OPERATED DOUBLE DIAPHRAGM PUMPS



## Specifications and types



ATEX Zona 1 (CONDUCT): II2GExhIIIBT4Gb – II2DExhIIIBT135°CDbX  
 ATEX Zona 2 (STANDARD): II3GExhIIIBT4Gc – II3DExhIIIBT135°CDeX – IM2ExhIMbX\*  
 IECEx: ExhIIBT4Gb – ExhIIBT135°CDb

\* The string relating to mining applications is not applicable to aluminium BOXER range pumps



PP

Boxer 81



### Maximum Dimensions

Height	274 mm
Width	308 mm
Depth	170 mm



### Construction materials (body and manifolds) and net weight

Polypropylene (with glass filler)	5 Kg
	Temp. 3°C min. 65°C max
Conductive polypropylene (with carbon filler)	5 Kg
	Temp. 3°C min. 65°C max



PVDF

Boxer 81



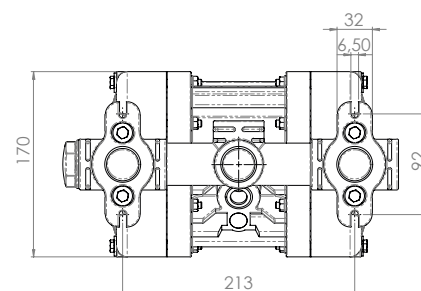
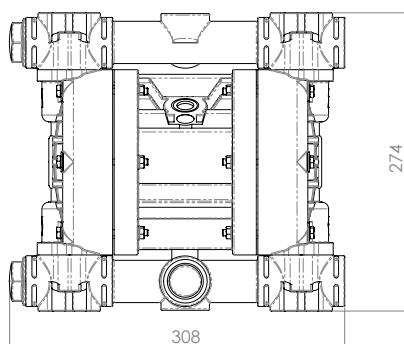
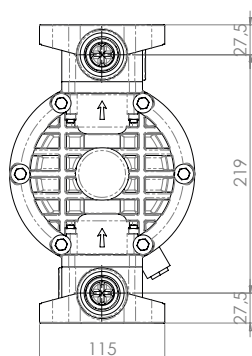
### Maximum Dimensions

Height	274 mm
Width	308 mm
Depth	170 mm



### Construction materials (body and manifolds) and net weight

PVDF (with carbon filler)	6 Kg
	Temp. 3°C min. 95°C max



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## Specifications and types



ATEX Zona 1 (CONDUCT): II2GExhIIIBT4Gb – II2DExhIIIBT135°CDBx  
 ATEX Zona 2 (STANDARD): II3GExhIIIBT4Gc – II3DExhIIIBT135°CDCx – IM2ExhIMbx\*  
 IECEx: ExhIIIBT4Gb – ExhIIIBT135°CDB

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### Electropolished AISI 316

Boxer 81



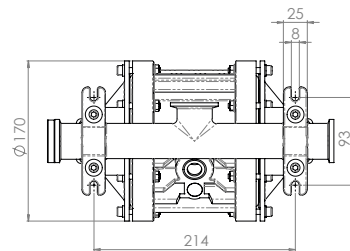
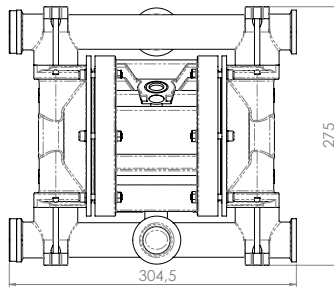
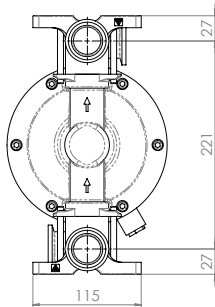
#### Maximum Dimensions

Height	275 mm
Width	305 mm
Depth	170 mm



#### Construction materials (body and manifolds) and net weight

Electropolished AISI 316	10,6 Kg
	Temp. 3°C min.
	95°C max



### BOXER 90

ALU



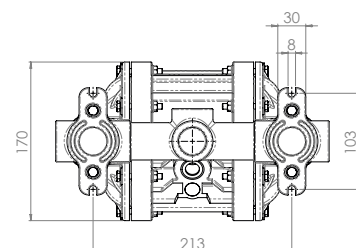
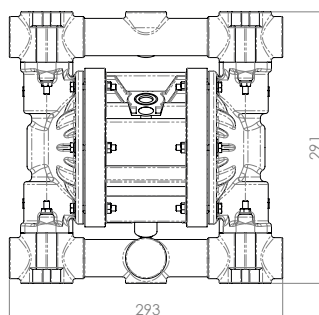
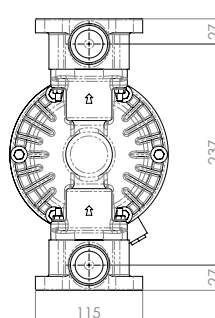
#### Maximum Dimensions

Height	291 mm
Width	293 mm
Depth	170 mm



#### Construction materials (body and manifolds) and net weight

ALU	7 Kg
	Temp. 3°C min.
	95°C max



# BOXER 81 / BOXER 90

AIR-OPERATED DOUBLE DIAPHRAGM PUMPS

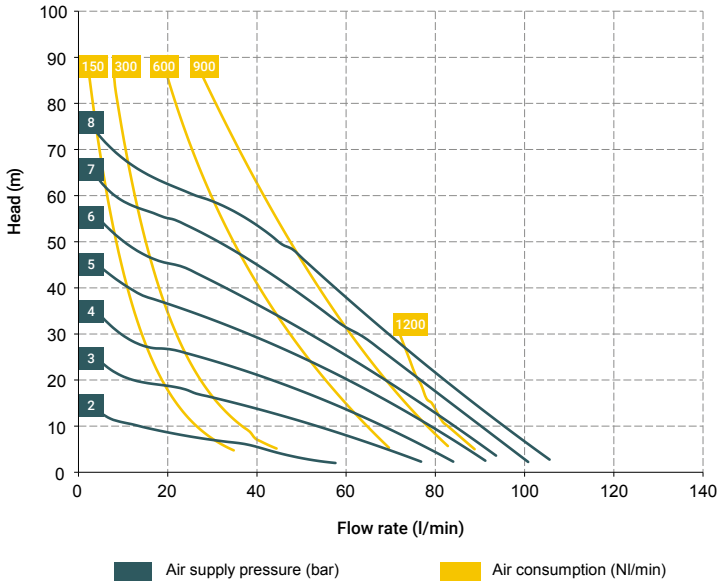


## Specifications and types



ATEX Zona 1 (CONDUCT): II2GExhIIIBT4Gb - II2DExhIIIBT135°CDBX  
 ATEX Zona 2 (STANDARD): II3GExhIIIBT4Gc - II3DExhIIIBT135°CDCX - IM2ExhIMbX\*  
 IECEx: ExhIIIBT4Gb - ExhIIIBT135°CDB

\* The string relating to mining applications is not applicable to aluminium BOXER range pumps



\* The curves and performances refer to pumps with immersed suction and open delivery outlet with water at 20 °C and vary according to the composition materials.

### Accessories:

- Equaflex 100  
[For damper materials, please refer to the technical data sheet]
- Truck model 01
- Foot valve
- Air regulation kit W3000-10-G
- Batch controller
- Stroke counter
- Reinforcement rings
- Flange kit (DIN flanges - ANSI on request)

### Distributor material T20 (compressed air circuit)

- POM

### Core material:

- Polypropylene (with glass filler)
- Conductive polypropylene (with carbon filler)
- Aisi 316
- Aluminum

### Diaphragm materials:

- PTFE
- HYTREL®
- SANTOPRENE
- NBR
- EPDM

### Cap materials:

- Polypropylene (with glass filler)
- Conductive polypropylene (with carbon filler)
- PVDF
- PPS
- AISI 316 L

### Ball materials:

- PTFE
- AISI 316 L
- EPDM
- NBR

### O-ring materials:

- EPDM
- NBR
- VITON®
- PTFE

### Packaging:

cardboard box - 24 x 39 x 37 cm - weight 1.2 kg  
 (the weight refers only to the packaging without the pump inside)

Any colour variations in our polypropylene and PVDF products are due to the special blends of the raw materials used. The use of high levels of glass and long-fiber carbon filler result in a unique colour that does not in any way affect the quality of the product; on the contrary, it points to the high level of content used to ensure outstanding performance.

### BOXER 90 (ALU):

A1 - A2 - A3 - A4

M1 - M2 - M3 - M4

#### Standard fittings:

- Suction: A1
- Delivery: M1



### BOXER 81 (INOX):

A1 - A2 - A3

M1 - M2 - M3

#### Standard fittings:

- Suction: A1
- Delivery: M1



### BOXER 81 (PP):

A1 - A2 - A3 - A4 - A5 - A6

M1 - M2 - M3 - M4 - M5 - M6

### BOXER 81 (PVDF):

A1 - A2 - A3 - A4 - A5 - A6

M1 - M2 - M3 - M4 - M5 - M6

#### Standard fittings:

- Suction: A1
- Delivery: M1



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AIR-OPERATED DOUBLE DIAPHRAGM PUMPS



## Specifications and types



ATEX Zona 1 (CONDUCT): II2GExhIIIBT4Gb – II2DExhIIIBT135°CDbX  
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## BOXER PUMPS CODES ENCODING

ex. IB81-P-HTTPV--

Internal distributor, Boxer 81, body PP, air-side diaph. Hytrel®, product-side diaph. PTFE, AISI 316 L balls, PP ball seats, EPDM O-Ring.

IB81-	P	H	T	T	P	V	-	-
PUMP MODEL	PUMP BODY	AIR-SIDE DIAPHRAGM	FLUID-SIDE DIAPHRAGM	BALLS	BALL SEATS	O-RING	MANIFOLD	VERSION
<b>IB07</b> - Boxer 07 <b>IB15</b> - Boxer 15 <b>IMICR</b> - Microboxer <b>IB35</b> - Boxer 35 <b>IB50</b> - Boxer 50 <b>IMIN</b> - Miniboxer <b>IB81</b> - Boxer 81 <b>IB90</b> - Boxer 90 <b>IB100</b> - Boxer 100 <b>IB150</b> - Boxer 150 <b>IB251</b> - Boxer 251 <b>IB252</b> - Boxer 252 <b>IB522</b> - Boxer 522 <b>IB502</b> - Boxer 502 <b>IB503</b> - Boxer 503	<b>P</b> - PP <b>PC</b> - PP+CF <b>FC</b> - PVDF+CF <b>A</b> - AISI 316 (L) <b>AL</b> - ALU	<b>N</b> - NBR <b>D</b> - EPDM <b>H</b> - Hytrel® <b>M</b> - Santoprene®	<b>T</b> - PTFE	<b>T</b> - PTFE <b>A</b> - AISI 316 L <b>D</b> - EPDM <b>N</b> - NBR	<b>P</b> - Polypropylene <b>F</b> - PVDF <b>A</b> - AISI 316 L <b>I</b> - PE-UHMW <b>R</b> - PPS <b>L</b> - Aluminium	<b>D</b> - EPDM <b>V</b> - Viton® <b>N</b> - NBR <b>T</b> - PTFE	<b>X*</b> <b>3*</b> <b>Y*</b> <b>W*</b> <b>K*</b>	<b>C*</b> <b>Z*</b>

Example table, for the table with the complete codes please contact the Debem sales department.

\*X = split manifold

\*3 = 3rd hole on the manifold

\*Y = manifold with NPT fitting

\*W = clamp manifold

\*K = manifold with reinforcement rings

(all on request only)

C = CONDUCT version for ATEX ZONE 1

Z = Version for IECEx Standard

### SELF-PRIMING USE



### UNDER HEAD USE



### IMMERSED



### DRUM TRANSFER



### SPLIT SUCTION and DELIVERY



### SPLIT SUCTION



## MAIN APPLICATION SECTORS

