Boxer 81 / Boxer 90

Specifications and types

Ex	Zone 2 – Zone 22	II 3G Ex h IIB T4 Gc e II 3D Ex h IIIB T135°C Dc X
	Zone 1 – Zone 21	II 2G Ex h IIB T4 Gb e II 2D Ex h IIIB T135°C Db X
	Zone 1 – Zone 21	II 2G Ex h IIC T4 Gb
	Zone M2	I M2 Ex h I Mb X *
	IECEx	Ex h IIB T4 Gb e Ex h IIIB T135°C Db

** The Group IIC gas application string is applicable on Boxer series pumps in Conduct version with Conductive TFM diaphragms.
* The mining application string does not apply to aluminium pumps in the Boxer range.

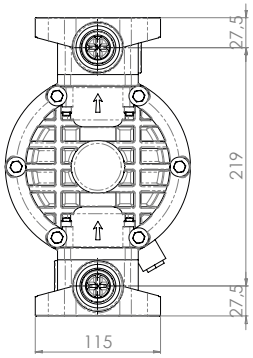
Suction / delivery connections Boxer 81 / 90	1" f BSPP (*)
Suction / delivery connections FDA Boxer 81	1"1/2 Clamp BS 4825'
Air fitting	3/8" f BSPP
Max. flow rate*	110 l/min
Max. supply air pressure	8 bar
Max. head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - with pump primed	9,5 m
Max. diameter suspended solids	4 mm
Noise	70 dB

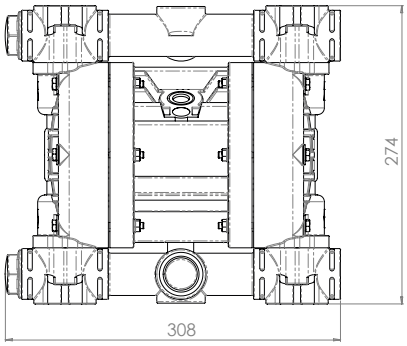
(*) NPT fittings only on request
* The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary depending on material composition.
** The value depends on the pump configuration.

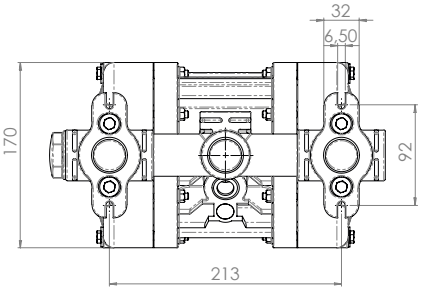
PLASTIC MATERIAL PP (GF/CF) - PVDF	Boxer 81

Maximum dimensions	
Height	274 mm
Width	308 mm
Depth	170 mm

Construction mat. (casing and manifolds) and net weight	
POLYPROPYLENE (with glass additive)	5 Kg Temp. 3°C min. 65°C max
CONDUCTIVE POLYPROPYLENE (with carbon additive)	5 Kg Temp. 3°C min. 65°C max
PVDF (with carbon additive)	6,5 Kg Temp. 3°C min. 95°C max







Boxer 81 / Boxer 90

#unboxingdebem

Specifications and types

Ex	Zone 2 – Zone 22	II 3G Ex h IIB T4 Gc e II 3D Ex h IIIB T135°C Dc X
	Zone 1 – Zone 21	II 2G Ex h IIB T4 Gb e II 2D Ex h IIIB T135°C Db X
	Zone 1 – Zone 21	II 2G Ex h IIC T4 Gb
	Zone M2	I M2 Ex h I Mb X *
	IECEx	Ex h IIB T4 Gb e Ex h IIIB T135°C Db

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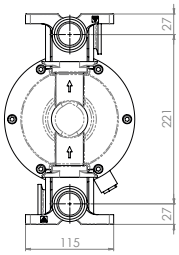
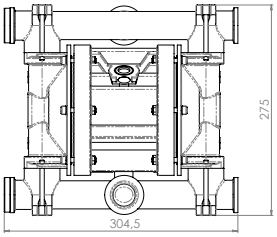
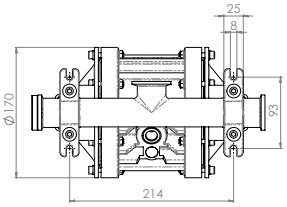
METAL MATERIAL - AISI 316 — Boxer 81

Maximum dimensions	
Height	275 mm
Width	305 mm
Depth	170 mm

Construction mat. (casing and manifolds) and net weight	
AISI 316	10,6 Kg Temp. 3°C min. 95°C max







FDA BOXER 81

METAL MATERIAL - AISI 316 — FDA Boxer 81

Maximum dimensions	
Height	305 mm
Width	315 mm
Depth	170 mm

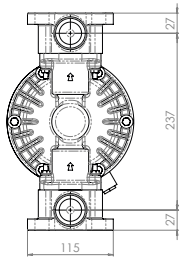
Construction mat. (casing and manifolds) and net weight	
AISI 316	10,6 Kg Temp. 3°C min. 95°C max

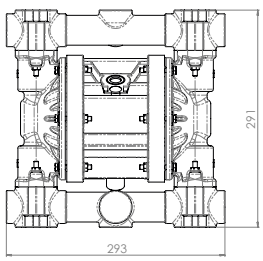
BOXER 90

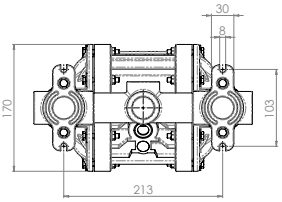
METAL MATERIAL - ALU — Boxer 90

Maximum dimensions	
Height	291 mm
Width	293 mm
Depth	170 mm

Construction mat. (casing and manifolds) and net weight	
ALU	7 Kg Temp. 3°C min. 95°C max







AIR-OPERATED DOUBLE DIAPHRAGM PUMPS
DEBEM srl - Via Del Bosco, 41 - 21052 Busto Arsizio (VA) Italy - Tel. +39 0331 074034 - Fax +39 0331 074036 - info@debem.it - www.debem.com

Boxer 81 / Boxer 90

Specifications and types

Zone 2 – Zone 22	II 3G Ex h IIB T4 Gc e II 3D Ex h IIIB T135°C Dc X
Zone 1 – Zone 21	II 2G Ex h IIB T4 Gb e II 2D Ex h IIIB T135°C Db X
Zone 1 – Zone 21	II 2G Ex h IIC T4 Gb
Zone M2	I M2 Ex h I Mb X *
IECEx	Ex h IIB T4 Gb e Ex h IIIB T135°C Db

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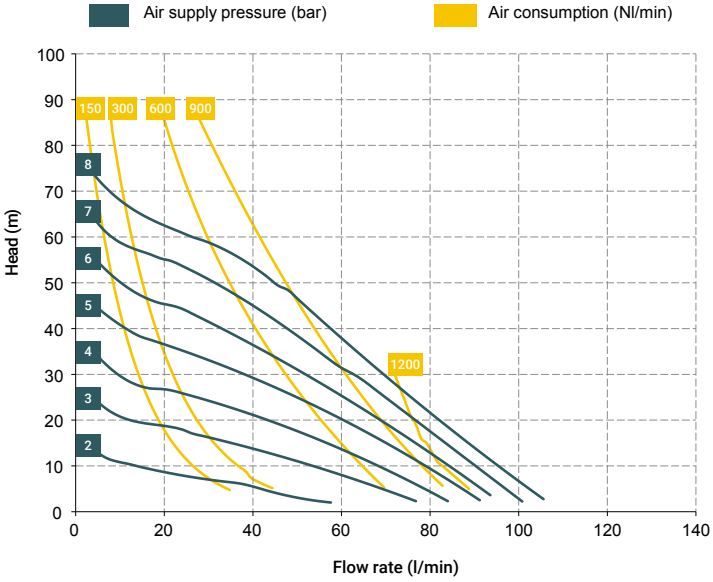
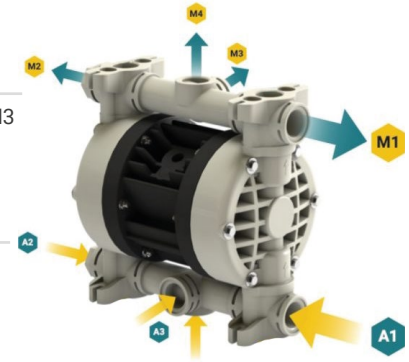


BOXER 90 (ALU):

A1 - A2 - A3 - A4 - M1 - M2 - M3 -M4

Standard fittings:

- Suction: A1
- Delivery: M1

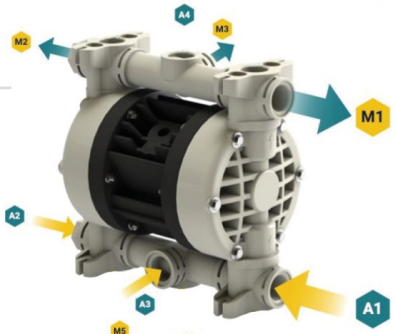


BOXER 81 (INOX):

A1 - A2 - A3 - M1 - M2 - M3

Standard fittings:

- Suction: A1
- Delivery: M1



BOXER 81 (PP):

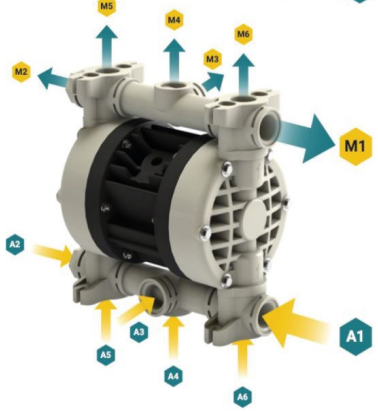
A1 - A2 - A3 - A4 - A5 - A6 - M1 - M2 - M3 - M4 - M5 - M6

BOXER 81 (PVDF):

A1 - A2 - A3 - A4 - A5 - A6 - M1 - M2 - M3 - M4 - M5 - M6

Standard fittings:

- Suction: A1
- Delivery: M1



T20 distributor material (compressed air circuit)

- POM

Core material

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

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)

Accessories

- Equaflux 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)

The curves and performance of the pumps have been determined in accordance with the ANSI/HI 10.6/2016 standard and may vary depending on the composition materials.

Debem procedure

1. The suction manifold positioned with a positive head of 50 cm.
2. The maximum length of the suction pipe is 50 cm without bends, elbows, filters, or other accessories.
3. The diameter of the suction pipe must be the same diameter as the manifold or larger.
4. The discharge pipe, including the flow meter, must not exceed 1 meter and must be the same diameter as the manifold.
5. If testing with longer pipes is necessary, pipes of larger diameter must be used, otherwise the data may be distorted.

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 81 / Boxer 90

Specifications and types

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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.

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

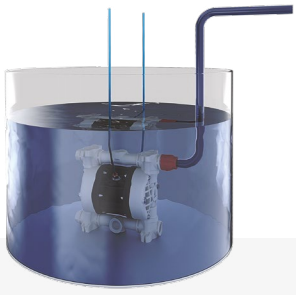
Example table, for the table with the complete codes please contact the Debem sales department.

*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

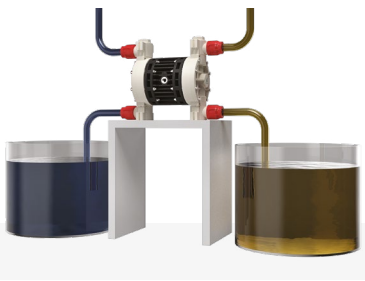
Self priming

Under head

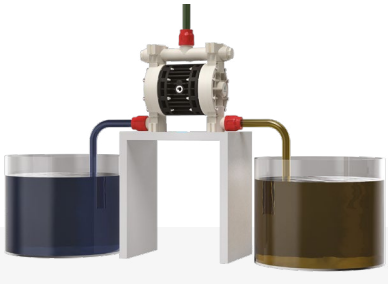


Immersed

Drum Transfer



Split Suction



Split Suction and Delivery