



## Authorized Hibon Distributor, Warranty, Service & Repair Facility

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### VTB 820.XL Air Injection Blower

Call **1-780-962-1827** for technical, application and sales support.

Hibon Ingersoll Rand presents new state-of-the-art technology in three-lobe, positive displacement blowers. The VTB 820.XL offers a wide range of design features and incorporates energy efficiency improvements, complying with the strictest operational requirements of a variety of applications. The VTB XL series air-injected, high-vacuum blowers are ideally suited for the rigorous demand of the vacuum truck and industrial vacuum markets. Hibon is a worldwide leader in three-lobe positive displacement blower technology with thousands of units installed around the globe.

- Three-lobe impeller construction
- Unique air injection system
- Increased efficiency
- Clearances adjusted automatically during assembly
- Larger oil capacity
- Higher volume oil thrower
- High performance sealing arrangement using 4 piston rings
- Quieter operation than two-lobe impeller construction
- Allows high vacuum including "dead end" operation without overheating
- No oil or water cooling system (100% oil free air)
- Requires less horsepower for the same performance
- Easier maintenance
- Runs cooler
- Better lubrication of bearings
- Less frequent oil changes

### Specifications

Max Vacuum	27" Hg
CFM	1661
Maximum RPM	3800
Minimum RPM	1000
Max Outlet (discharge) Pressure	Atmospheric Pressure + Max Differential Pressure
Max Inlet Pressure	Atmospheric Pressure
Max Outlet Vacuum	Atmospheric Pressure
Max Inlet Vacuum	100 mbar, 1.01 x 10 <sup>4</sup> Pa, 75.75 Torr
Max Differential Pressure (inlet-outlet)	1100 mbar 1.0 x 10 <sup>5</sup> Pa, 750 Torr
Shaft Dia.	1.89" (48mm)
Drive End Lubrication	Hibon Lube
Opposite Drive End Lubrication	Hibon Lube
Drive End Cover – Horiz	1.50 Litres (0.40 US gal)
Drive End Cover – Vert	0.9 Litres (0.24 US gal)
Opp. Drive End Cover – Horiz	2.1 Litres (0.55 US gal)
Opp. Drive End Cover - Vert	1.3 Litres (0.34 US gal)
Bare Unit Weight	580 Lbs
Container	Wood Skid
Shipping Weight on Skid	620 lbs
Shipping Options	Ground Freight, Air or Sea



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**VTB 820.XL Approximate Oil Fill Amounts**

Model No. / Drive Shaft Location	Drive End Cover		Opposite Drive End Cover	
	Liters	US Gal.	Liters	US Gal.
VTB 820.XL (Horizontal)	1.5	0.40	2.1	0.55
VTB 820.XL (Vertical)	0.9	0.24	1.3	0.34

These capacities are provided to assist stocking the correct amount of oil. Exact sump capacity may differ slightly. Review the proper filling instructions in OEM Manual.

**VTB 820.XL Lubrication Data**

Parameter	Standard Use	Special Use
Density (at 15 °C, 59 °F)	0.89	0.86
Mean pour point	21 °C (70 °F)	45 °C (113 °F)
Mean flash point	224 °C (435 °F)	260 °C (500 °F)
Viscosity: At 20 °C (68 °F)	8.09 x 10 <sup>-4</sup> m <sup>2</sup> s <sup>-1</sup> (809 cSt)	6.04 x 10 <sup>-4</sup> m <sup>2</sup> s <sup>-1</sup> (640 cSt)
At 40 °C (212 °F)	2.2 x 10 <sup>-4</sup> m <sup>2</sup> s <sup>-1</sup> (202 cSt)	2.18 x 10 <sup>-4</sup> m <sup>2</sup> s <sup>-1</sup> (218 cSt)
At 100 °C (212 °F)	1.8 x 10 <sup>-5</sup> m <sup>2</sup> s <sup>-1</sup> (18 cSt)	2.7 x 10 <sup>-5</sup> m <sup>2</sup> s <sup>-1</sup> (27 cSt)
Mean viscosity index	93	149
Recommended Oil	Hibon Lube	Contact Fraserwoods

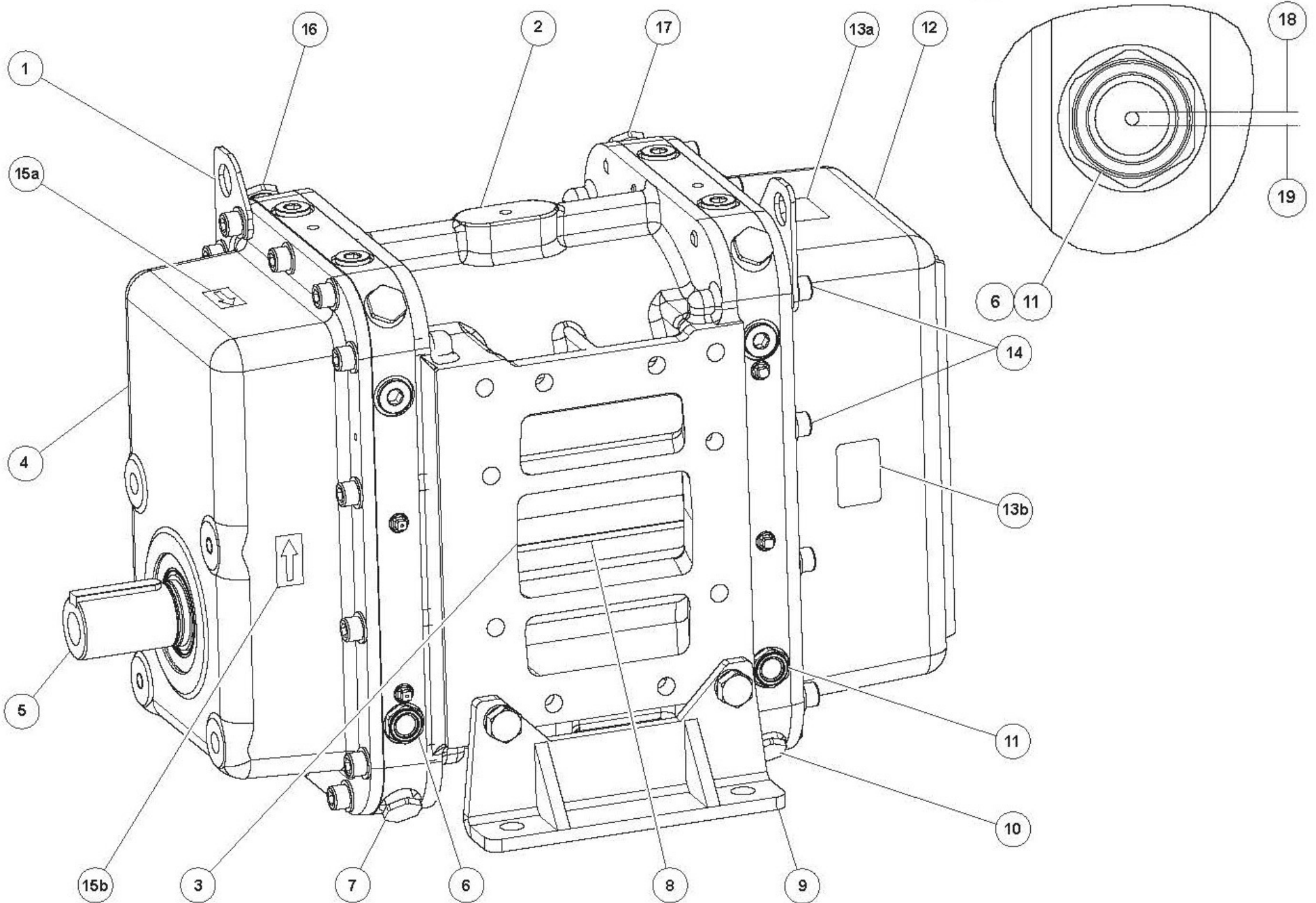
**VTB 820.XL Noise and Vibration Data**

Noise Level - dB(A)	Vibration Level
127	6.5 mm.s <sup>-1</sup> (0.25 inch s <sup>-1</sup> )

**VTB 820.XL Components**

Item Number	Part Name
1	Lifting lugs
2	Inlet (behind blower)
3	Discharge (outlet)/injection ports
4	Drive end cover
5	Drive shaft
6	Oil level sight glass (drive head plate)
7	Drive end oil drain plug
8	Rotors
9	Mounting feet
10	Non drive end oil drain plug
11	Oil-level sight glass (non-drive head plate)
12	Non-drive end cover
13a	Identification and rating plate (vertical position)
13b	Identification and rating plate (horizontal position)
14	Head plate bolts
15a	Direction of rotation arrow (vertical position)
15b	Direction of rotation arrow (horizontal position)
16	Oil filler plug (drive head plate)
17	Oil filler plug (non-drive head plate)
18	Maximum oil level
19	Minimum oil level

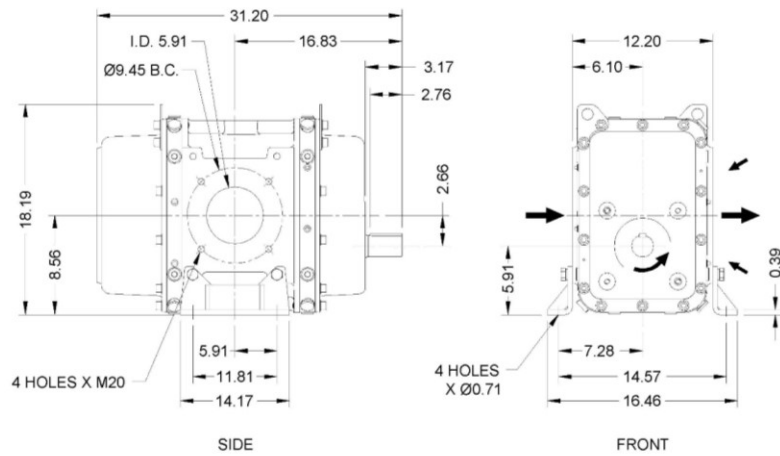
# VTB 820.XL Blower



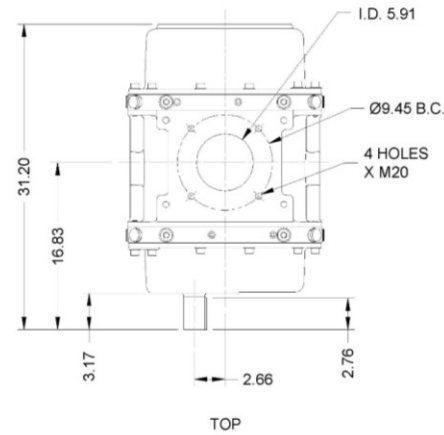
BLOWER	SPEED RPM	VACUUM PERFORMANCE													
		9" Hg		12" Hg		15" Hg		18" Hg		21" Hg		24" Hg		27" Hg	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
<b>VTB 820.XL</b> (1661 CFM*) *Volume Displacement at Maximum Speed	2200	785	22	764	28	728	35	673	41	608	45	505	49	152	53
	2600	948	27	955	33	894	41	843	48	778	54	683	58	290	63
	2800	1030	29	1042	36	978	44	928	52	864	58	772	63	360	68
	3000	1111	31	1128	39	1061	48	1014	55	949	62	861	67	429	74
	3200	1193	34	1215	42	1144	51	1099	59	1035	67	950	72	498	79
	3400	1275	36	1302	15	1227	55	1184	63	1120	71	1039	77	567	84
	3600	1356	39	1389	49	1310	58	1269	67	1205	76	1128	83	637**	90**
	3800	1438	42	1476	52	1393	62	1354	70	1291	80	1217**	87**	-	-

\*\* For intermittent use only (15 min/hour)

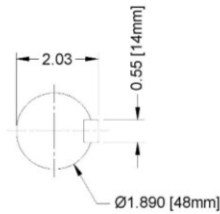
VERTICAL GEARS



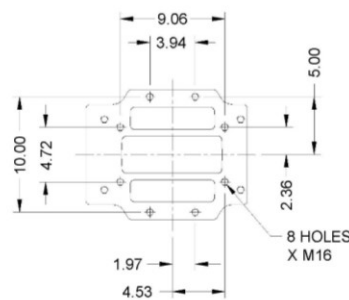
HORIZONTAL GEARS



SHAFT DETAILS



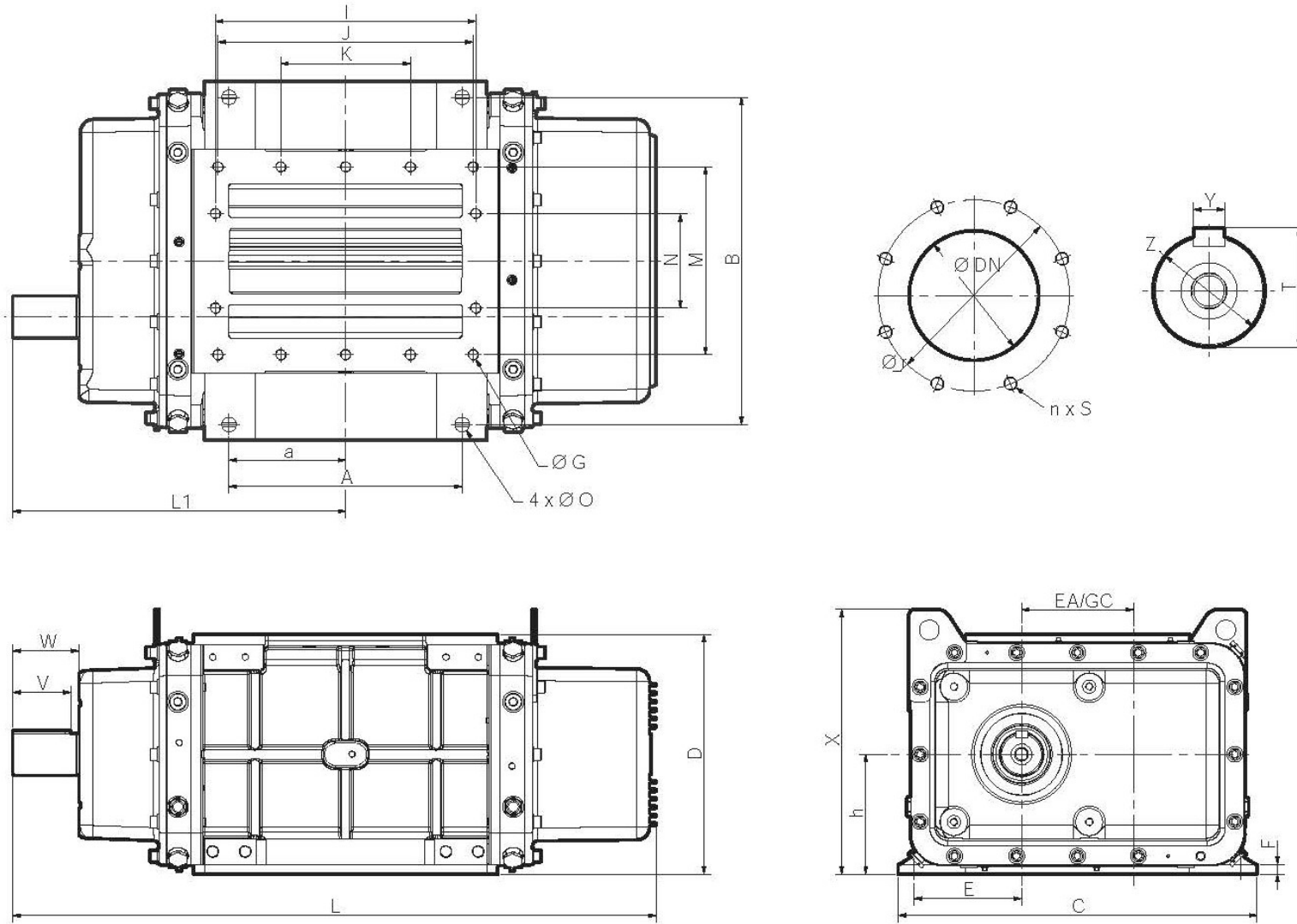
DISCHARGE FLANGE



- NOTES:  
 1. ENGLISH UNITS (INCH) UNLESS OTHERWISE NOTED.  
 2. WEIGHT: 344 lbs.  
 3. C.W. SHAFT ROTATION ALSO AVAILABLE ON REQUEST.  
 4. DO NOT USE FOR CONSTRUCTION.



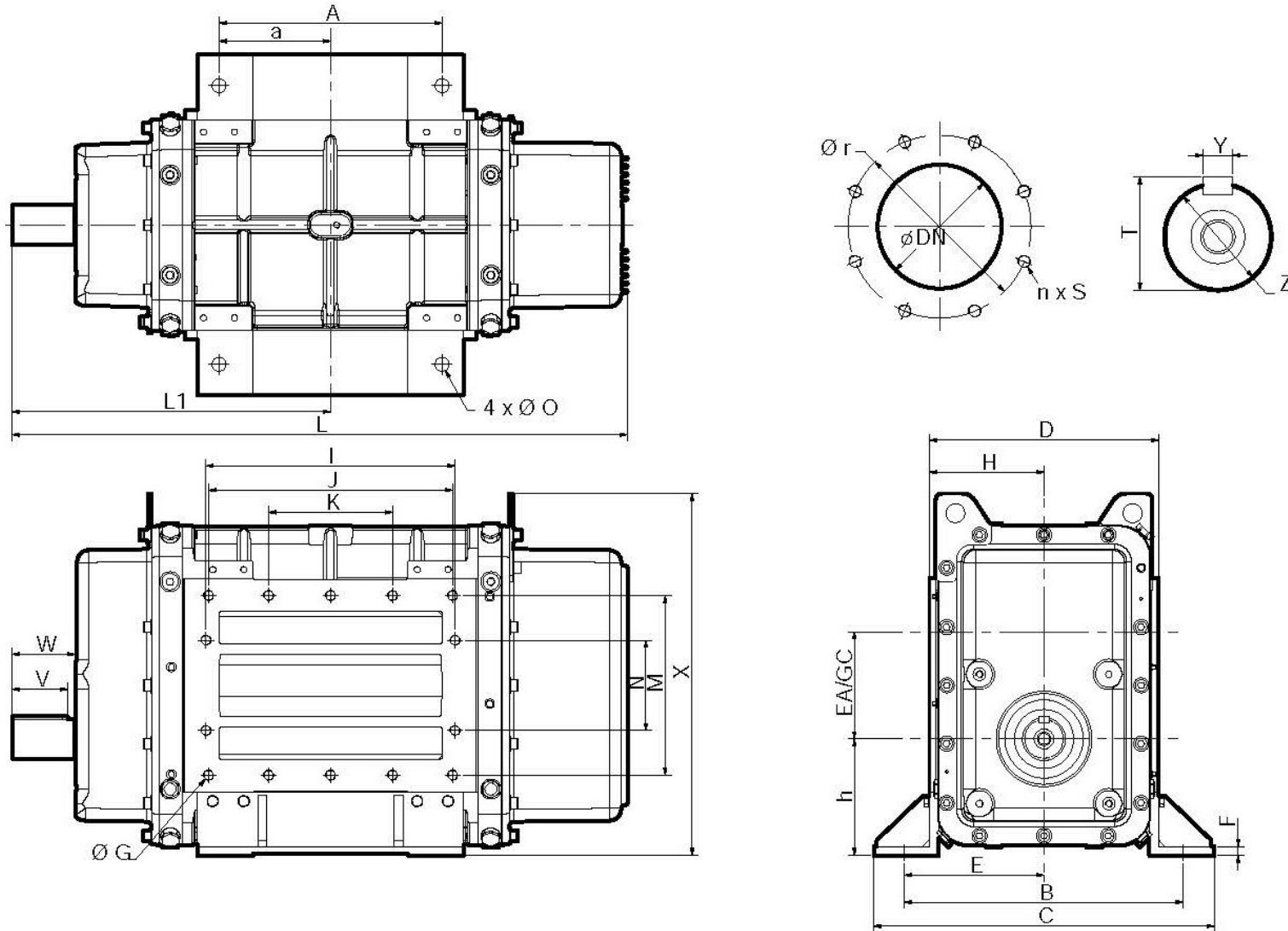
## VTB 820.XL Blower Dimensions: Horizontal Orientation



**VTB 820.XL Dimensions – Horizontal Orientation**

A	a	B	C	D	E	F	GC/EA	G	h	I	J	K	L	L1
-	-	-	16.73	12.20	-	-	5.31	8 x M16	6.10	9.06	3.94	-	31.18	16.83
M	N	ØO	Ør	n x S	T	ØDN	V	W	X	Y	ØZ*	<b>Fitting tolerance range: m6</b>		
10.00	4.72	-	9.45	4 x M20	2.03	5.91	2.76	3.19	12.99	0.55	1.89			

### VTB 820.XL Blower Dimensions: Vertical Orientation



**VTB 820.XL Dimensions – Vertical Orientation**

A	a	B	C	D	E	F	GC/EA	G	H	h	I	J	K	L
11.81	5.91	14.57	16.46	12.20	7.28	0.39	5.31	8 x M16	6.10	5.91	9.06	3.94	-	31.18
L1	M	N	ØO	Ør	n x S	T	ØDN	V	W	X	Y	ØZ	Fitting tolerance range: m6	
16.83	10.00	4.72	0.71	9.45	4 x M20	2.03	5.91	2.76	3.19	18.19	0.55	1.89		



## HIBON BLOWERS, VTB SERIES – HIGH VACUUM

### TECHNICAL DATA SHEET – VTB 820.XL

#### Performance Data:

Refer to performance curves, available upon request.

- Vacuum performance, metric (ISO) units
- Vacuum performance, imperial units
- Pressure performance, metric (ISO) units
- Pressure performance, imperial units

#### Dimensional Data:

Refer to general arrangement drawings, available upon request.

- Bare shaft blower dimensions, metric and imperial units –
- Bare shaft dimensions, 2D & 3D drawings, metric and imperial units
- Blower with manifold, 2D drawings, metric and imperial units
- Blower inlet flange is 6" (150 mm) diameter, PN 10 metric drilling
- Manifold flanges are 6" (150 mm) diameter, ANSI 125 Lbs drilling

Note: Manifold type and flange positions must be shown on order

#### Gasket Data:

- Inlet flange: Standard, 6" (150 mm) PN 10 metric drilling, Part # GKTR-0820  
Asbestos free, glass fiber reinforced compressed gasket, 1/8" thick, equivalent to Permatite AF2100 or Mevco N748B
- Discharge flange: Special drilling, Part # GKTS-0820

#### Weight Data:

- Blower, without manifold: 588.1 Lbs (267 Kg)
- Manifold only: ~ 119 Lbs (54 Kg)  
Manifold weight varies with configuration.

#### Blower Configurations:

Blower is available in several configurations to suit your installation and type of drive:

- Air flow: Vertical or horizontal
- Rotation: Clockwise or Counter-Clockwise
- Shaft position: Top, bottom, left, right

A typical arrangement drawing is available to help you select the proper configuration at time of order.

#### Oil Capacity, Vertical Gears, Horizontal Flow Arrangement:

- Drive end: 0.24 US Gal (0.90 Liters)
- Gear end: 0.34 US Gal (1.30 Liters)

#### Oil Capacity, Horizontal Gears, Vertical Flow Arrangement:

- Drive end: 0.40 US Gal (1.50 Liters)
- Gear end: 0.55 US Gal (2.10 Liters)

Note: Oil quantities are approximate. Please follow instruction of the maintenance manual to read proper oil level.

#### Type of Oil:

- Hibon® Lube is recommended for optimum performance.
- Extreme Pressure (EP) Synthetic Gear Oil, ISO 220 grade.
- For truck service, a synthetic type of oil is preferred for summer and winter operation.
- Make sure that the synthetic oil incorporates the EP (Extreme Pressure) gear additive.



#### Power Transmission Data:

- Maximum input torque: 250 lbf-ft (339 N-m) (1 second start-up)
- Start-up inertia: 8.12 lb-ft<sup>2</sup> (0.342 Kg-m<sup>2</sup>)
- Minimum blower pulley size: See manual
- Minimum rotation speed: 1,000 RPM
- Maximum rotational speed: 3,800 RPM

#### Other Operating Data:

- Maximum blower tilt angle: 12° (for proper lubrication, any direction)
  - Maximum temperature: 285°F (140°C) at blower discharge
  - Temperature switch set at: 265°F (130°C)
  - Maximum size of particles entering blower: 0.003" (0.07 mm)
  - Maximum dust load through blower: 0.006 oz/ft<sup>3</sup> (6 gr/m<sup>3</sup>)
- Temperature probe must be located close to manifold discharge flange.

#### Silencer Data:

- Maximum Pressure Loss:
  - Air injection silencer and associated piping: 8" WC (200 mm H<sub>2</sub>O)
  - Discharge silencer and associated piping: 8" WC (200 mm H<sub>2</sub>O)
- Design air flow: 1,400 SCFM (2,380 m<sup>3</sup>/hr)
- Design Temperature:
  - Air injection silencer: 100°F (38°C)
  - Discharge silencer: 250°F (120°C)

Note: Air injection and discharge silencers have atmospheric inlet / discharge







# VTB.XL Series

## Air injection Vacuum Blower

**Better by design**

With over 100 years of experience, Hibon is a market leader with a world-class range of air blowers and vacuum equipment used to provide air/gas volumes for pressure and vacuum applications.

Continuous research and development of the **hibon** Product range has led to the introduction of the new **VTB.XL** Series Air Injection blowers.

Their new design incorporates the benefits of improved assembly, lifetime reliability, better performance and interchangeability with the previous range, as well as smaller blower units.

### Range


Blowers	Free air delivery* maxi
VTB 805.XL	1 007 m <sup>3</sup> /h
VTB 807.XL	1 570 m <sup>3</sup> /h
VTB 810.XL	1 901 m <sup>3</sup> /h
VTB 820.XL	2 822 m <sup>3</sup> /h
VTB 822.XL	4 635 m <sup>3</sup> /h
VTB 840.XL	6 492 m <sup>3</sup> /h
VTB 8602.XL	7 800 m <sup>3</sup> /h
VTB 8702.XL	9 690 m <sup>3</sup> /h
VTB 8902.XL	11 400 m <sup>3</sup> /h

\* At maximum speed.

Vacuum up to 95%

Pressure up to 1 bar g. ; To 1.2 bar g. from VTB 840.XL

### Features

**Rotors:** Three-Lobe Rotors with a one-piece, integral lobe and shaft design for improved quality and reliability. Available in **ATEX** on request.  II 2/2 G/D c, II BT3, 160° C X

**Gears:** Helical gears located on the opposite drive side.

**Bearings:** Four sized bearings for lifetime reliability.

**Oil reservoir:** Large oil reservoir for improved bearing lubrication.

**Oil thrower:** Oil thrower and oil passages for good bearing lubrication and long life.

**Seals: For air :** An innovative and unique design that includes 4 piston rings and a shield. **For an oil free operation :** Dynamic shaft seals arrangement with deflector.

**Shaft seals:** Innovative dynamic shaft seals arrangement.



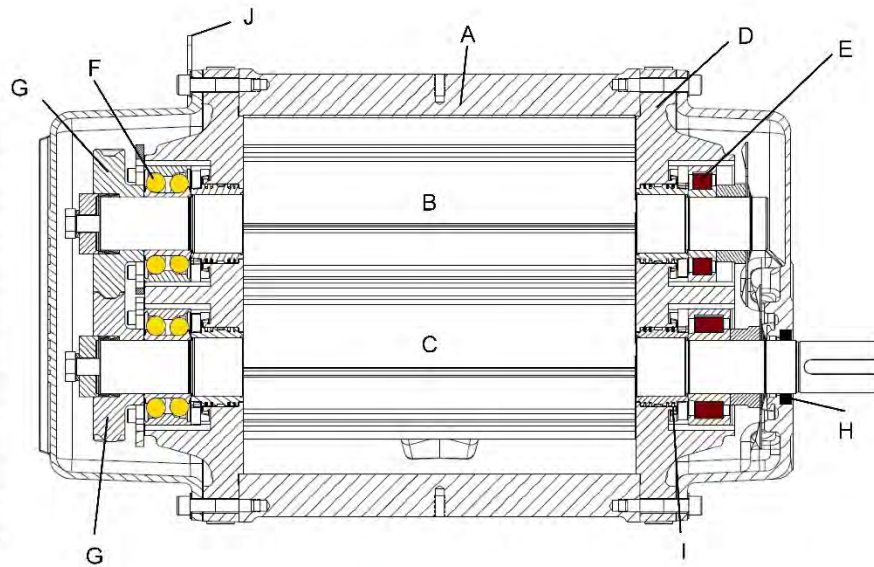
**Cleaner**  
**Lower running costs**  
**Maintenance free**





## Part Description

A	Housing
B	Driven Rotor
C	Drive Rotor
D	Head Plate
E	Roller bearings
F	Boll bearings
G	Gears
H	SCP ring
I	Piston ring seals
J	Lifting lugs



## Benefits

- No oil or water cooling system
- High mechanical and volumetric efficiency
- Lifetime reliability
- 100% oil free air
- Blowers without maintenance for 40,000 hours (except oil each year).
- Interchangeability with the previous range (except VTB822.XL)
- Lifting lugs
- Option: Mounting feet

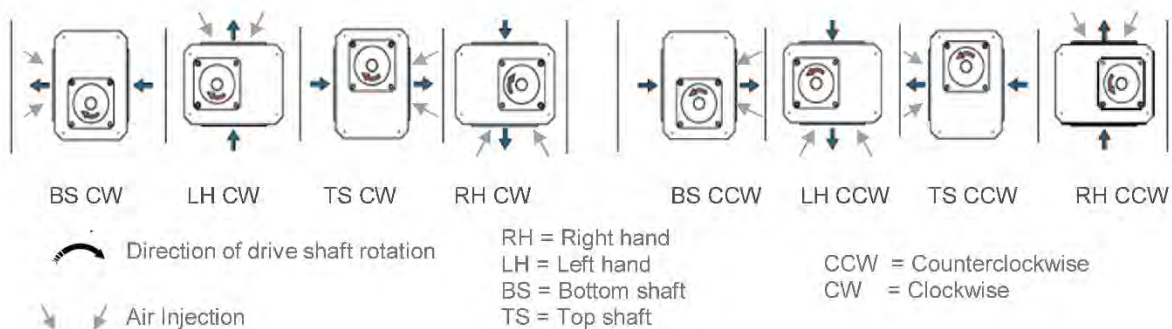
## Applications

Hibon® VTB.XL series are the only dry positive displacement blowers able to reach 95% vacuum. The special design of this «Environmentally green pump» eliminates water cooling, heat exchangers, oil consumption and effluent.

Typical applications are :

- Mobile waste handling units, industrial, municipal wet and dry.
- Pneumatic conveying (fly ash, chemicals pharmaceuticals product...).
- Central vacuum systems (packaging, envelope manufacturing...)

## Configurations



# Performances

\*\* For intermittent use only. (15 min / hour)

## VTB 820.XL

RPM	Volume displacement	50% Vacuum		60% Vacuum		70% Vacuum		80% Vacuum		90% Vacuum		Max. Vacuum (%)
	m <sup>3</sup> /h	m <sup>3</sup> /h	kW	m <sup>3</sup> /h	kW	m <sup>3</sup> /h	kW	m <sup>3</sup> /h	kW	m <sup>3</sup> /h	kW	
2200	1634	1237	26	1143	30	1032	34	858	36	258	40	92
2600	1931	1520	31	1433	36	1322	40	1160	43	493	47	93.5
2800	2080	1661	33	1577	39	1467	43	1311	47	611	51	94
3000	2228	1802	36	1722	41	1613	46	1463	50	729	55	94.5
3200	2377	1943	38	1867	44	1758	50	1614	54	846	59	94.8
3400	2526	2085	41	2012	47	1903	53	1765	58	964	63	95.2
3600	2674	2226	44	2156	50	2048	56	1916	62	1082**	67	
3800	2822	2367	46	2301	52	2193	60	2067**	65**	-	-	



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