

FEATURES

- > Easy to use BLDC technology/operation
- > Compact & lightweight design for portable applications
- > On-board, integrated brushless DC motor controller
- > Seven convenient fixed speed output selections
- > Variable speed PWM input signal for full range flexibility
- > Closed loop speed operation for consistent performance
- > Pressure or vacuum capability
- > Proven WOB-L piston technology
- > User configurable pneumatic ports
- > Durable die-cast aluminium components
- > Wetted parts treated for corrosion resistance
- > Field serviceable

TYPICAL APPLICATIONS

- > In-Vitro Diagnostics
- > Ventilator
- > Oxygen Concentrator
- > Dental Equipment
- > Spray Atomization
- > Pond Aeration

CUSTOMER REQUIREMENTS

- > Externally supplied cooling air flow must be provided in most applications to ensure pump operates within product specifications
- > Refer to the Product Dimensions diagram for the supplemental cooling location and direction



BASE MODEL

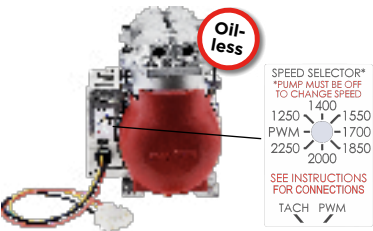
2320Z1C3624W (Pressure/Vacuum, 24Vdc)
2320Z1C3648W (Pressure/Vacuum, 48Vdc)
2320Z1B3624W (Vacuum, 24Vdc)
2320Z1B3648W (Vacuum, 48Vdc)



WOB-L

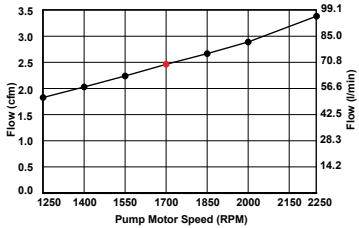
2320Z1 Series

Flow	3.38 cfm (95.8 l/min)
Max. pressure	60 psi (4.2 bar)
Max. vacuum	90% local barometer



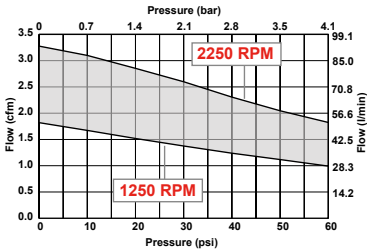
On board - Integrated fixed or variable PWM speed control

Pump Open Flow at Each Pump Speed Selection



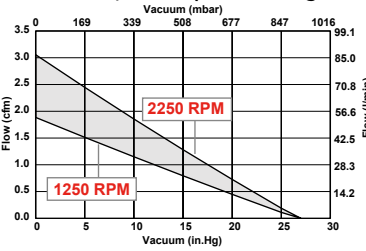
Factory set at the 1700 RPM setting

Pump Flow and Pressure at Min. / Max. Speed Setting



Performance of pressure configuration

Pump Flow and Vacuum at Min. / Max. Speed Setting



Performance of vacuum configuration

NOTE: All test values are nominal and for reference only. They are not guaranteed maximum or minimum limits, nor do they imply mean or median.

PERFORMANCE DATA				Shaded column indicates factory pre-set "speed selector"			
Pump Configuration	Parallel Flow Pressure (Vacuum capable)			Note: pump is capable of continuous pressure and/or light duty vacuum. For vacuum only applications see table below			
Model Number - 24VDC Nominal Voltage	2320Z1C3624W						
Model Number - 48VDC Nominal Voltage	2320Z1C3648W						
Speed Setting	1250 RPM	1400 RPM	1550 RPM	1700 RPM	1850 RPM	2000 RPM	2250 RPM
Open Air Flow - cfm (l/min)	1.83 (51.7)	2.03 (57.5)	2.24 (63.4)	2.46 (69.7)	2.67 (75.5)	2.89 (81.8)	3.38 (95.8)
Max. rated pressure - psi (bar)	60 (4.1)	60 (4.1)	60 (4.1)	60 (4.1)	60 (4.1)	60 (4.1)	60 (4.1)
Flow at max. rated pressure [60psi] - Amps at 24Vdc	0.99 (28.0)	1.13 (32.0)	1.26 (35.8)	1.42 (40.2)	1.56 (44.1)	1.69 (47.8)	1.80 (50.9)
Current at max. rated pressure [60psi] - Amps at 24Vdc	10.2	10.8	11.9	13.3	14.2	15.4	16.6
Current at max. rated pressure [60psi] - Amps at 48Vdc	4.7	5.1	5.5	5.8	6.4	6.8	7.4
Power max. rated pressure [60psi] - Watts at 24Vdc	244	257	286	320	341	370	399
Power max. rated pressure [60psi] - Watts at 48Vdc	225	247	264	279	308	326	357
Pump Configuration	Parallel Flow, Vacuum Only			Note: pump is not capable of positive pressure operation			
Model Number - 24VDC Nominal Voltage	2320Z1B3624W						
Model Number - 48VDC Nominal Voltage	2320Z1B3648W						
Speed Setting	1250 RPM	1400 RPM	1550 RPM	1700 RPM	1850 RPM	2000 RPM	2250 RPM
Open Air Flow - cfm (l/min)	1.88 (53.4)	2.05 (58.0)	2.25 (63.8)	2.43 (68.9)	2.60 (73.7)	2.78 (78.8)	3.06 (86.6)
Current at peak load [15 inhg] - Amps at 24Vdc	3.7	4.1	4.6	5.0	5.5	6.2	7.6
Current at peak load [15 inhg] - Amps at 48Vdc	1.7	1.9	2.1	2.3	2.5	2.8	3.4
Power at peak load [15 inhg] - Amps at 24Vdc	89	99	110	120	133	148	182
Power at peak load [15 inhg] - Amps at 48Vdc	80	90	101	111	122	135	164

Test Reference: T21-0285, T22-0145, T22-0133

ELECTRICAL DATA	
Motor type	24Vdc or 48 Vdc BLDC
Motor insulation class	F
Motor protection	Thermal fuse - One shot
Power lead wire color, gauge	Black, 16 AWG Green w/yellow, 18 AWG Red, 16 AWG
Power lead wire color function/pin ID	Black: 0 VDC/Pin 1 Green w/yellow: Ground/Pin 2 Red: +Vdc/Pin 3
I/O lead wire color function/pin ID	White: PWM/Pin 1 Blue: Tach out/Pin 2 (See Speed Selection Instructions included with pump), I/O harness not included with pump.

GENERAL DATA	
Operating ambient temperature	50° to 104°F (10°C TO 40°C)*
Pump functionality	Pump pre-set to 1700 RPM. 7 fixed speeds or PWM (1250-2250 RPM) may be selected
Net weight	7.83 lbs (3.55 kg)

*Broader ambient operating ranges may be possible depending on your specific application. Please consult your Thomas representative regarding your system needs.

PRODUCT DIMENSIONS

4X PIPE PLUG (1/4-18 NPT)

[173.7]
6.84

[86.8]
3.42

PUMP SPEED I/O, PWM & TACH CONNECTOR: MOLEX P/N: 436400200
2X TERMINAL: MOLEX P/N: 430310001

POWER CONNECTOR: TE P/N: 350766-1
3X TERMINAL: TE P/N: 350218-3

LEAD LENGTH (FROM GROMMET TO BACK OF CONNECTOR):
[304.8±25.4]
12.0±1.0

[97.5±0.8]
2X 3.84±0.03

[122]
4.80

INTAKE 1/4-18 NPT

[25.4]
1.00

EXHAUST 1/4-18 NPT

[143]
5.63

[153.2]
6.03

THOMAS

[81.3±0.3]
2X 3.20±0.01

[94.2]
3.71

[6.3]
.25

4X 1/4-20 UNC - 2B

[134.3]
5.29

SUPPLEMENTAL COOLING AIR FLOW DIRECTION AND LOCATION

UNIT REQUIRES SUPPLEMENTAL COOLING AIR FLOW.

LEAD IDENTIFICATION TABLE				
LEAD TYPE	WIRE COLOR	FUNCTION	AWG	CONNECTOR PIN ID
POWER	BLACK	0 (ZERO) VDC	16	1
	GREEN W/YELLOW	GROUND	18	2
	RED	+VDC NOMINAL	16	3
PUMP SPEED I/O	PWM		22	1
	TACH OUT		22	2

GENERAL CONTACT

EMEA

Gardner Denver Thomas GmbH

Livry-Gargan-Str. 10
82256 Fuerstenfeldbruck
Germany

Tel: +49 8141 2280 0
Fax: +49 8141 8892136
td.usa@irco.com

AMERICAS

Gardner Denver Thomas, Inc.

1419 Illinois Avenue
Sheboygan, WI 53081
USA

Tel: +1 920 457 4891
Fax: +1 920 451 4276
td.usa@irco.com

ASIA PACIFIC

**Gardner Denver Thomas
Pneumatic Systems (Wuxi) Co., Ltd.**

No. 1 New Dong An Road
Shuofang Town
Wuxi, Xinwu District
Jiangsu 214142
China

Tel: 400-012-1268
QQ 800 180 724
thomas.cn@irco.com

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