

uno.

BOXER® PUMPS

BOXER 9000

Peristaltic Pump



DC or Stepper Motor
oem peristaltic pumps
for accurate dispense
of liquids.
From 0.5 to 170ml/min

- Easy tube change
- Continuous or fixed tube length
- Accurate dispense
- 3 roller system
- Planetary gearbox on DC motor
- Integrated positional encoder (optional)
- Choice of 3 different tube diameters
- Suitable for continuous operation
- Panel mounting
- No lubrication—no service
- Self priming
- CE marked

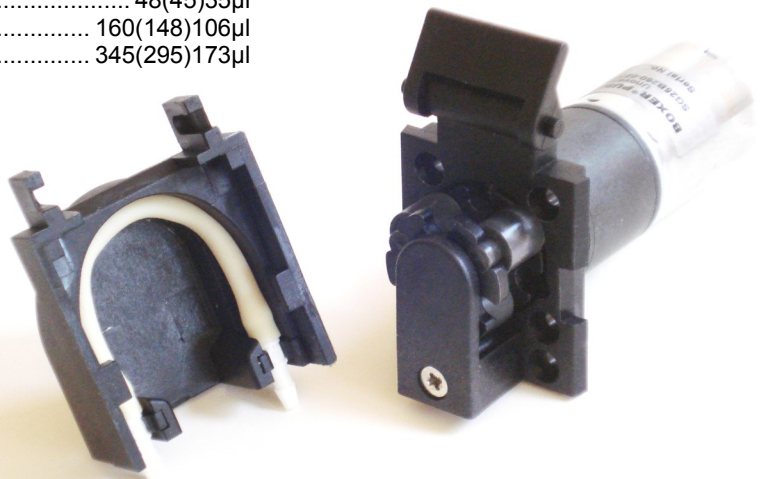
DC Motor:	6V DC-24V DC
Current at full speed	450mA
Max ambient operational temperature	50°C
Material wetted parts	Santoprene, ED-Plex or Silicone
Max pressure	2 bar
Max vacuum	900mbar
Weight	125g
Life expectancy DC motor	>2000 hours
Life expectancy stepper motor.....	>10000 hours
Optional back shaft motor encoder (DC version only)	160 pulses per rev
Optional rotor encoder with hall effect switch	1 or 3 pulses/rev

Use the following data to calculate your requested rotor speed:
Flow per 360° rotor revolution using 3 (4) 6 rollers rotor:

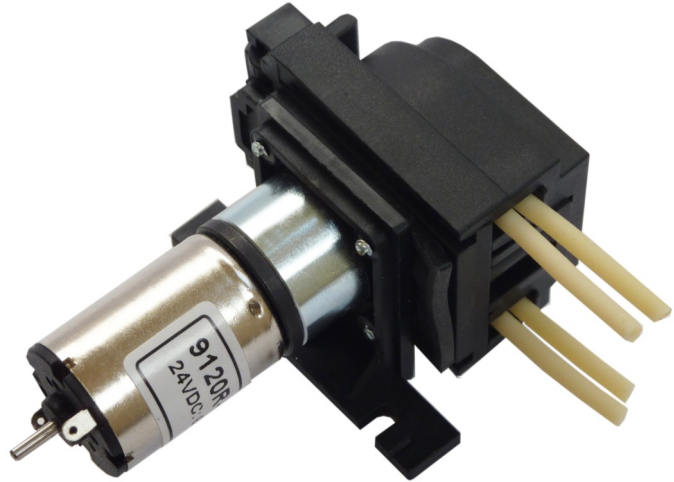
ID Ø0.5mm tube	17(15)10µl
ID Ø1.0mm tube	48(45)35µl
ID Ø2.0mm tube	160(148)106µl
ID Ø3.0mm tube	345(295)173µl

DC gearboxes are available at multiple ratios.
Speed control board available as accessory.

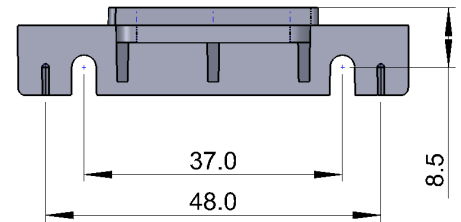
Stepper motor can be driven at up to 780rpm



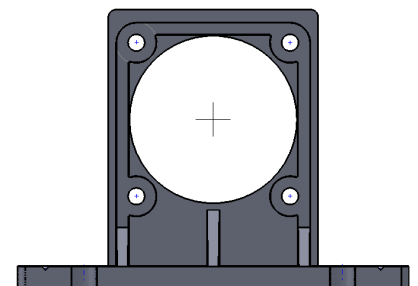
Boxer 9000 DC motor 6-24V operation
With optional back shaft encoder



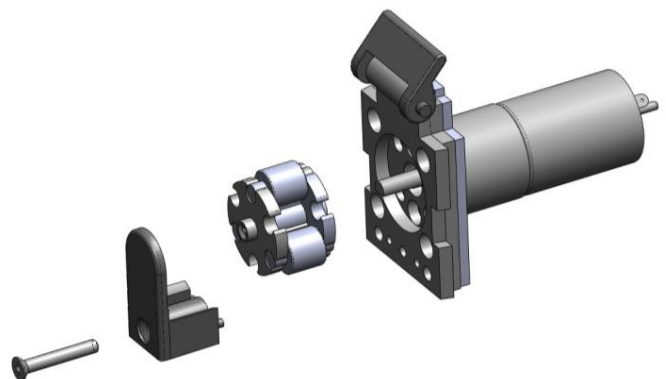
Bracket mounted 9K DC version with 2 continuous Ø1mm tubes.



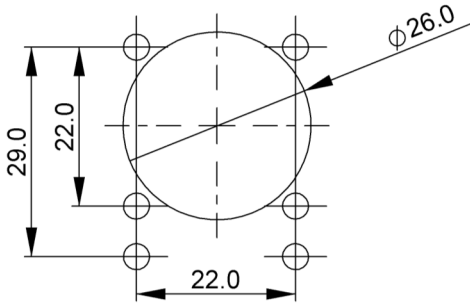
Dimensions of optional support bracket



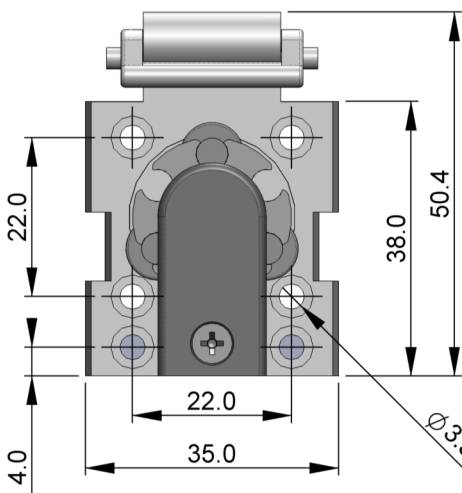
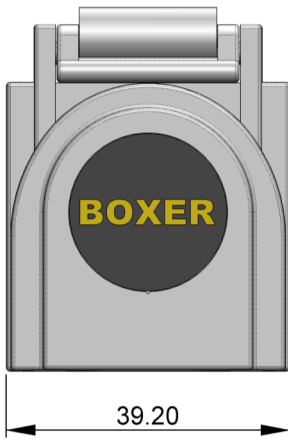
Standard 9K pumps are delivered with 3 roller per rotor.
4 and 6 rollers are available as option.



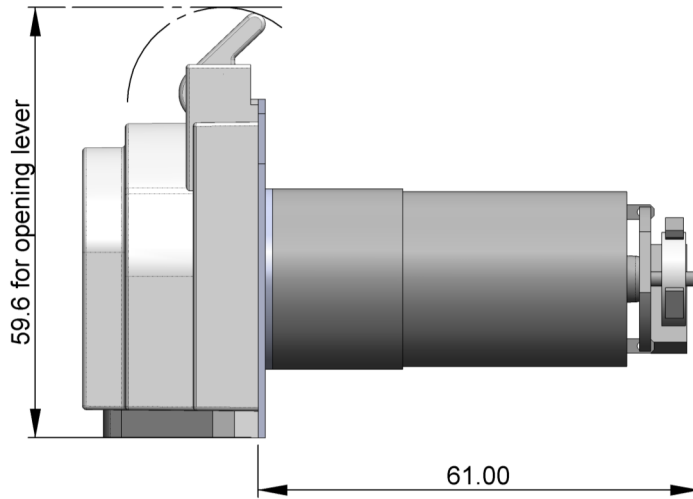
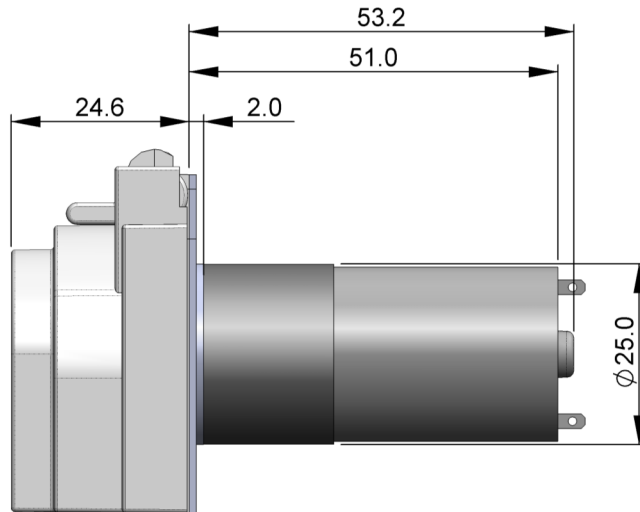
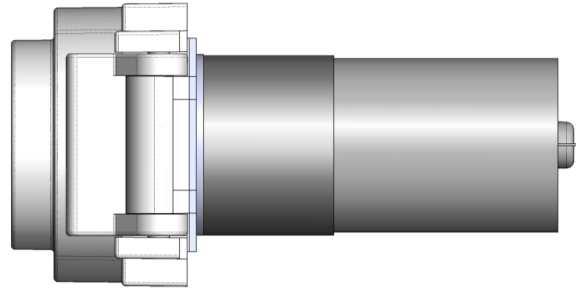
Boxer 9600 Stepper motor operation



Panel cut out
 fixing with M3 screws
 or No 3 self tappers



shown without lid

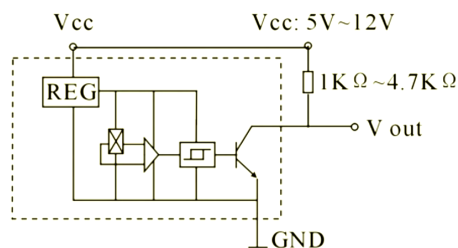


shown with optional back shaft encoder

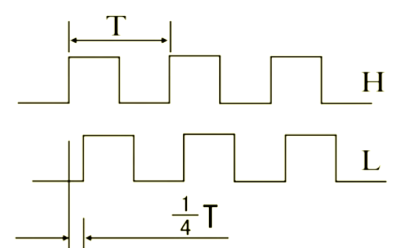
Pumps with back shaft encoder
 have the following pin assignment:
 MOTOR-
 MOTOR+
 HALL SENSOR Vcc
 HALL SENSOR GND
 HALL SENSOR A V OUT
 HALL SENSOR B V OUT

Magnet wheel has 10PPR
 Cable connector socket required:
 JST (Japan Solderless Terminals) PHR-6 P=2.0-6P

Output Circuit



Output Wave



**Boxer 9000 DC motor 6-24V operation
 With optional back shaft encoder**

Panel mounted Bipolar Stepper Motor
 oem peristaltic pumps
 for accurate dispense
 of liquids.
 From 0.2ml/min to 270ml/min

We provide 3 different stepper drivers which can
 be used with these motors:

1. Self standing driver with on board trimmer for speed control
- 2.
- 3.
4. Self standing driver with terminals for speed control using an external multi turn potentiometer
- 5.
6. Stepper driver which is controlled from a computer via the computer USB port using our own software running on Windows 7
- 7.

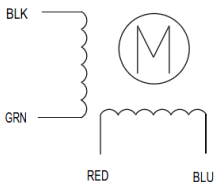


HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

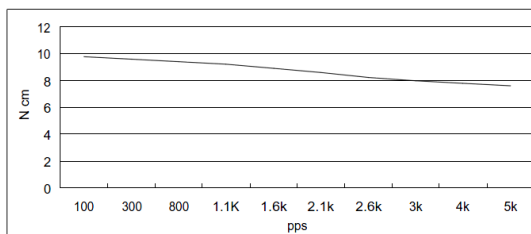
General specifications		Electrical specifications	
Step Angle (°)	1.8	Rated Voltage (V)	2.7
Temperature Rise (°C)	80 Max (rated current, 2 phase on)	Rated Current (A)	1.0
Ambient temperature (°C)	-20~+50	Resistance Per Phase (±10%)	2.7 (25°C)
Number of Phase	2	Inductance Per Phase (±20% mH)	4.3
Insulation Resistance	100MΩ, Min (500VDC)	Holding Torque (Kg.cm)	1.4
Insulation Class	Class B	Detent Torque (g.cm)	100
Max. radial force (N)	28 (20mm from the flange)	Rotor Inertia (g.cm ²)	14
Max. axial force (N)	10	Weight (Kg)	0.18



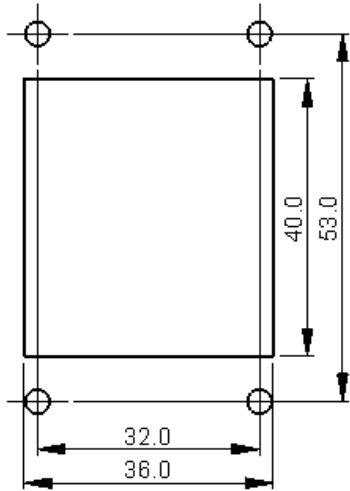
● **Wiring Diagram:**



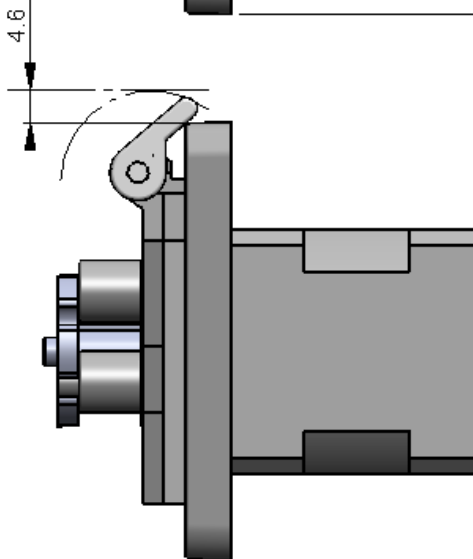
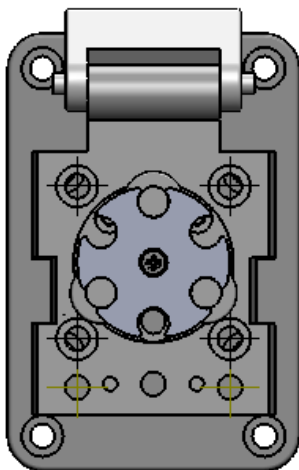
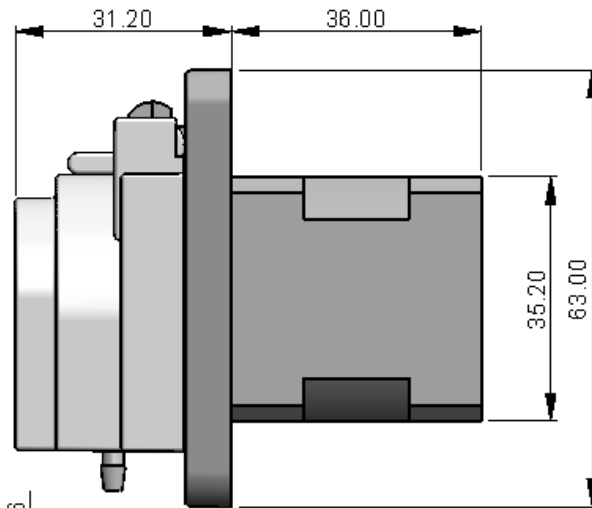
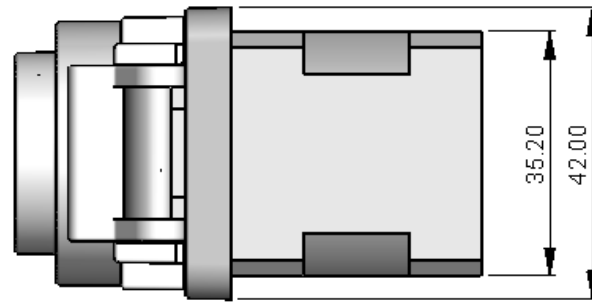
● **VOLTAGE: 24VDC, CONSTANT CURRENT: 1.0A, HALF STEP**



Boxer 9600 Stepper motor operation



Panel cut out
fixing with
M3 screws



Continuous tube means a tube which runs as one piece of tubing from your reservoir through the pump to your application.
 Continuous tubes are sold by the metre.

You will need the correct tube clips if ordering continuous tubing.

There are three sizes of clips, marked with a small number on the clip itself:

- 1 for IDØ1mm tube
- 2 for IDØ2mm tube
- 3 for IDØ3mm tube

Fitted tubes are tube cut to the correct size and delivered with tube to tube connectors and delivered with tube clips which fit into the pump tube clamp.

Ordering information:

Boxer 9000 260rpm @ 12V DC	9017.000
Boxer 9000 520 rpm @ 12V DC	9007.000
Boxer 9000 33rpm @ 24V DC	9016.000
Boxer 9000 107rpm @ 24V DC	9012.000
Boxer 9000 107rpm @ 24V DC	9012.000
Boxer 9000 315rpm @ 24V DC	9008.000
Boxer 9000 520rpm @ 24V DC	9015.000
Boxer 9000 375 rpm @ 12V DC with back shaft encoder	9501.000
Boxer 9600 Stepper driven pump	9600.000

Many more Gearmotor combinations available upon request.
 All versions are available with back shaft multi pole encoder.

Santoprene tube IDØ1.0 with fitted connectors 75mm long	9000.512
Santoprene tube IDØ2.0 with fitted connectors 75mm long	9000.513
Santoprene tube IDØ3.0 with fitted connectors 75mm long	9000.518

Silicone tube IDØ0.5 with fitted connectors 75mm long	9000.527
Silicone tube IDØ1.0 with fitted connectors 75mm long	9000.504
Silicone tube IDØ2.0 with fitted connectors 75mm long	9000.505
Silicone tube IDØ3.0 with fitted connectors 75mm long	9000.510

Santoprene tube IDØ1.0 X1 metre length	9000.511
Santoprene tube IDØ2.0 X1 metre length	9000.506
Santoprene tube IDØ3.0 X1 metre length	9000.515

Silicone tube IDØ0.5 X1 metre length	9000.528
Silicone tube IDØ1.0 X1 metre length	9000.507
Silicone tube IDØ2.0 X1 metre length	9000.509
Silicone tube IDØ3.0 X1 metre length	9000.508

Tube clip for 1mm continuous tube—set of 2	9000.601
Tube clip for 2mm continuous tube—set of 2	9000.602
Tube clip for 3mm continuous tube—set of 2	9000.603
Tube clip for 2X1mm continuous tube—set of 2	9000.610

Stepper controller for operation via USB port with software	6900.001
Stepper driver with on board speed control trimmer	6900.002
Stepper driver with terminals for remote multi speed control turn potentiometer	6900.003
Multi turn potentiometer 10Ω 10 turns	6900.112

Angled fixing bracket	9000.613
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All Silicone tubes are Platinum cured.

