

## Astro Model 3220 Brushless Motor

The Astro 3220 Brushless Motor is designed to deliver high power with minimum size and weight. The motor is only 3.2 inches in diameter and 3.4 inches long and weights 4 pounds. It can deliver 750 inch ounces of continuous torque and over 1,000 inch ounces for 1 minute. Best motor efficiency is 93% at 375 inch ounces of torque and remains above 90% up to 750 inch ounces. The motor can handle speeds up to 12,000 Rpm. Windings are available for operation from 24 volts DC to 144 Volts DC. Standard shaft diameter is 0.375 inch. Other diameters such as 8 MM, 10 MM, 12 MM and 0.500 inch are available on special order.

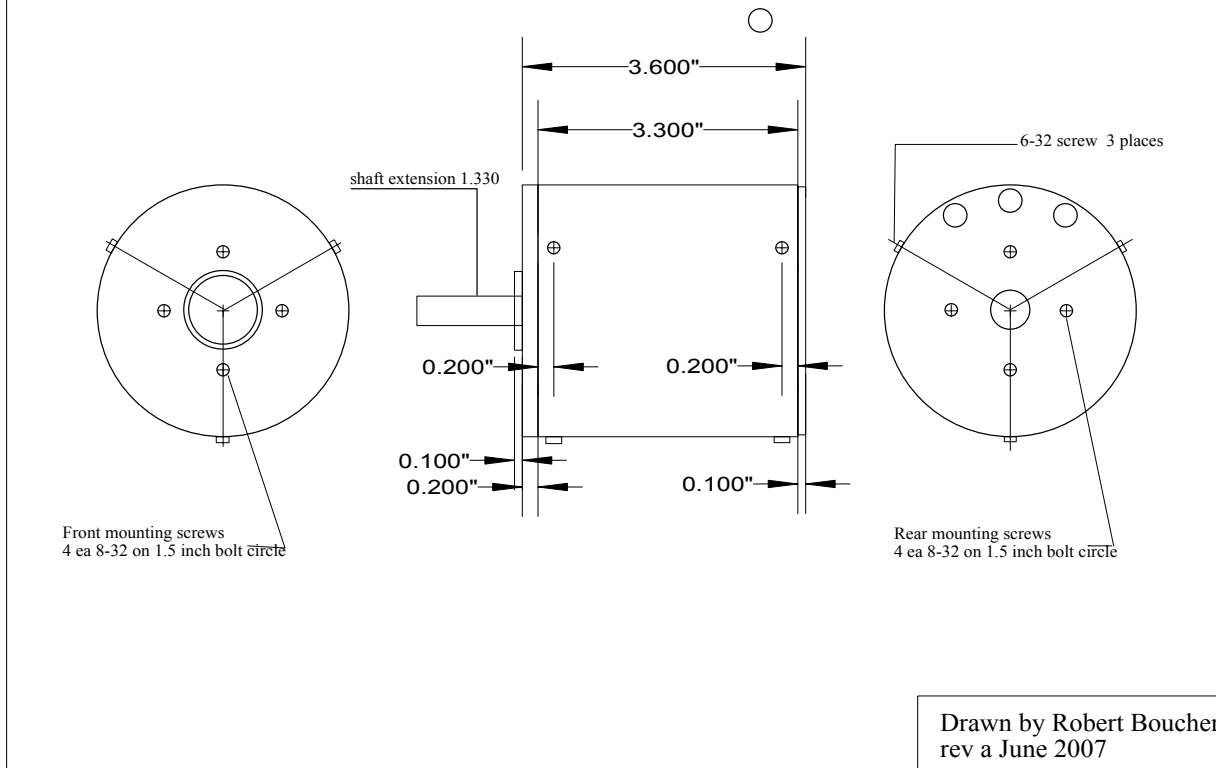
### Motor Constants for Various Winding Options

Motor Winding	Kv rpm/volt	Kt in oz /amp	No Load Amps	Winding Resistance	Best Amps	Motor Efficiency
1 turn	677	2.0	6.0 amps	0.003 ohms	170 amps	93%
2 turns	339	4.0	3.0 amps	0.010 ohms	85 amps	93%
3 turns	225	6.0	2.0 amps	0.019 ohms	57 amps	93%
4 turns	169	8.0	1.5 amps	0.039 ohms	42 amps	93%
5 turns	135	10	1.2 amps	0.050 ohms	34 amps	93%
6 turns	113	12	1.0 amps	0.076 ohms	28 amps	93%
7 turns	97	14	0.9 amps	0.111 ohms	24 amps	93%
8 turns	84	16	0.7 amps	0.159 ohms	21 amps	93%
10 turns	67	20	0.6 amps	0.200 ohms	17 amps	93%
12 turns	34	24	0.5 amps	0.304 ohms	14 amps	93%
24 turns	28	48	0.25 amps	1.220 ohms	7 amps	93%

### Operation at maximum continuous torque for various winding options

Motor Winding	Operating Voltage	Continuous Amps	Shaft Torque	Motor Rpm	Shaft Power	Motor Efficiency
1 turn	12 volts	375 amps	750 in oz	7,500 rpm	5.6 Hp	90%
2 turns	24 volts	187 amps	750 in oz	7,500 rpm	5.6 Hp	90%
3 turns	36 volts	106 amps	750 in oz	7,500 rpm	5.6 hp	90%
4 turns	48 volts	94 amps	750 in oz	7,500 rpm	5.6 Hp	90%
5 turns	60 volts	75 amps	750 in oz	7,500 rpm	5.6 Hp	90%
6 turns	72 volts	63 amps	750 in oz	7,500 rpm	5.6 hp	90%
7 turns	84 volts	54 amps	750 in oz	7,500 rpm	5.6 hp	90%
8 turns	96 volts	47 amps	750 in oz	7,500 rpm	5.6 Hp	90%
10 turns	120 volts	38 amps	750 in oz	7,500 rpm	5.6 Hp	90%
12 turns	144 volts	31 amps	750 in oz	7,500 rpm	5.6 Hp	90%
24 turns	288 volts	16 amps	750 in oz	7,500 rpm	5.6 Hp	90%

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**Let us build a custom motor for your. Please answer the questions below and fax us for a quote.**

<b>Maximum operating voltage</b>	
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<b>Maximum continuous amps</b>	
<b>Maximum continuous power</b>	
<b>Maximum continuous torque</b>	
<b>No Load speed in rpm</b>	
<b>Maximum motor diameter</b>	
<b>Maximum motor length</b>	
<b>Maximum motor weight</b>	
<b>Operating temperature range</b>	
<b>Operating duty cycle</b>	
<b>Is this motor for production</b>	
<b>What is expected annual usage</b>	