Selecting a Power Supply:

There is no formula for calculating the requirements of a power supply, so we need another approach. We start with some theory and then calculate (estimate) the requirements.

The way most stepper motor drivers work:

Most stepper motors drivers try to run the stepper motor at a (adjustable) maximum current. They do this by connecting (electronic switch) the supply voltage to the coils of the stepper motor. The current that is flowing through the coils, is measured. As soon as this current reaches the maximum level set, the supply voltage is disconnected from the coils and de current through the coils drops. If the current is less than the maximum current, the supply voltage is again connected to the coils and the whole process (regulation) starts again. This way of driving the stepper is called a chopper or switched regulator. Switched regulators are cheap to make and generate very little heat.

Estimate the power (Watt) needed:

We need the stepper motor specifications Voltage (V) and Maximum current (A) to estimate the power supply needed.
I have 2 stepper motors (42BYGHW811) on the X and Z axis. According to the datasheet, it is a 3.1 Volt and 2.5Amp stepper. This means it needs (3.1 * 2.5) 7.75 Watt per coil. There are 2 coils so it needs 15.5 Watt. Together, these 2 steppers need 31 Watt.
I also have a stepper motor on the spindle (24HS39-3008D). This is a 5.94 V and 2.12 A stepper (I have connected the 4 coils in series). It needs 25.2 Watt.
Together these 3 steppers needs 86 Watts. The TB6600 drivers I use are about 80% efficient. Correcting for this, I need (86 / 80 * 100) 108 Watt.
To avoid under powering, double the estimated 108 Watt, so a 216 Watt power supply is needed.

Estimating the power supply voltage:

To run a stepper at a very low speed, you only need a supply voltage as high as the stepper voltage specification. When the stepper speed increases, the stepper inductance will prevent the current to flow through the stepper coils. To overcome this inductance, a higher supply voltage is needed. The higher the stepper inductance, the higher the voltage needed to run at high speeds.
The higher the supply voltage, the faster the current through the coil will buildup. This fast current buildup can cause very loud noise.
The high power supply voltage needed to run at high speeds, will cause over current when running at low speeds. When the current exceeds the max limit set, the driver will temporary turn off the supply voltage to the stepper coils. The higher the supply voltage, the more frequent the driver has to turn off the voltage. This results in high frequent noise and resonance. This resonance will occur at particular step rates. At such resonance point, the noise becomes very loud and it significantly reduces the steppers torque. **Running a stepper faster than the first step frequency where this resonance occurs, will result in losing steps** and inaccurate positions. To avoid this, keep well below this resonance point.
The lower the supply voltage and the better the driver, the less resonance.

The first resonance point will depend on the combination of stepper, driver, power supply and step rate. Selecting the power supply voltage is more based on experience than anything else. In my experience, the TB6600 drivers shouldn't be run at a voltage higher than 24 Volt.

Estimating the power supply current:

The combination of 2 42BYGHW811 steppers and 1 24HS39-3008D stepper require a supply current of (2 *2*2.5 + 2 * 2.25) 14.5 A. A combination of a Stepper and a switching (chopper) driver act as a step down converter. This means that if the stepper needs 2 A running at 3 Volt, it needs 1 A running a 6 Volt and 0.5A running at 12 Volts. As the step rate increases, this step down converter acting reduces, resulting in more amps needed. If not all the steppers run simultaneously at their maximum rate, less amps are needed.
In my experience it is safe to select a power supply capable of delivering 70% of the maximum amps needed. In this case it would be 10.15 Amps.

Selecting the power supply:

In the previous sections we estimated a 24 Volt and 10.15 Amps power supply. This supply can deliver (24 * 10.15) 244 Watt. This is more than the 216 Watt estimated before so we are at the safe side.
In practice we can select a 24 Volt 250 Watt power supply. Because there is not so much difference in price between a 250 and 350 Watt power supply, I selected a 24 Volt 350 Watt power supply capable of delivering 14.5 Amps. This gives some room for future upgrades.