Steps To Proper Transformer Selection

1. What power is available (you need to know both voltage & frequency)?
2. Check the operating voltage of your equipment (is it single voltage or multiple?).
3. What line frequency will your equipment run on? Either 50, 60 or dual 50/60 Hz. (remember, a transformer can NOT change line frequency).
4. Use the chart below to determine your requirements:

Power Available		Your Equipment		Transformer Type Required (You may also need plug adaptors)
Voltage	Frequency	Voltage	Frequency	
115	60	100	50/60	Step Down
115	50	115	50	None Required - or - Straight Isolation
115	50	115	60	Will Not Work
115	50	115/230	50/60	None Required - or - Straight Isolation
115	60	115	60	None Required - or - Straight Isolation
115	60	230	50	Will Not Work
115	60	230	60	Step Up
115	60	115/230	50/60	None Required - or - Straight Isolation
230	50	115	50	Step Down
230	50	115	60	Will Not Work
230	50	115/230	50/60	None Required - or - Straight Isolation
230	60	115	60	Step Down
230	60	230	50	Will Not Work
230	60	230	60	None Required - or - Straight Isolation
230	60	115/230	50/60	None Required - or - Straight Isolation

1. Determine if your equipment is Electronic or Electrical:
   - Electronic = containing IC chips, transistors or a circuit such as a radio, shavers, electric toothbrush, computer printers, camcorder battery rechargers etc...(if in doubt, check with the manufacturer or refer to your manual).
   - Electrical = Simple heating device, such as irons, hair dryers, electric blankets, curling irons, etc...
2. Use the chart below to locate correct series & voltage conversion in the catalog series that follow:

Transformer Type (determined from chart above)	Your Equipment Type	
	Electronic	Electrical
Step Up	Use Isolation (series 298)	Could use “Auto” (series 170 or 170E)
Step Down	Use Isolation (series 172, 179 or 289)	Could use “Auto” (series 175)
Straight Isolation	Use Isolation (series 169 or 171)	-

IMPORTANT NOTES

Isolation Transformers: Used for maximum safety, versatility (can be used on both electrical & electronic equipment) and isolation from the power source, used to step-up, step-down or for straight isolation. The disadvantage to using them is weight (about double the "Auto"), more expensive and larger size. This type of transformer is sometimes referred to as "double-wound"

"Auto" Transformers: are non-isolating units and should be used where only a voltage change is required. The advantages to using them are light weight (generally half that of an isolation unit), less expensive and smaller size. The disadvantage is no isolation from the power source. This type of transformer is sometimes referred to as a "converter".

Adaptors: We strongly recommend that 3-prong "grounded" plugs be used with all of our products. They should be used only with our "grounded" adaptors. Adaptors do not affect voltages, they are a mechanical device only to match foreign "pin-outs" of receptacles and/or plugs.