

## RTNKW - Guidelines for Sizing Phase-A-Matic “KW” Rotary Phase Converters

The Rotary Converter is designed to supply full running current to a three-phase motor, normally providing it with full running torque. However, most motors will draw five times their running current during start-up. When sized KW for KW the Rotary Converter cannot deliver the full (5 times) starting current to the motor and therefore cannot provide full starting torque. You must always use a larger KW rated Rotary Converter than the KW rating of the motor.

**Note:** There is no minimum load requirement for the Rotary Converter. Some customers will install a Rotary Converter larger than needed to accommodate any future additions to their equipment. Below are minimum size recommendations.

### 1. Motor Load Categories:

#### Category 1:

This load type applies to machinery with American made motors and which start with **no** load such as mills with step-pulley speed change, lathes with a clutch, sewing machines, and so forth. Use a converter with KW rating of at least 50% larger than the KW of the motor.\*

\*Many restrictions apply. Most applications require sizing the converter a minimum of 100% larger (twice the rating). See all load types. Contact Phase-A-Matic, Inc. to verify load type.

**NOTE:** For instant reversing (as for rigid tapping), use a converter with twice the KW rating of the motor.

#### Category 2:

Use a converter with KW rating of at least 100% larger than KW of the motor (twice the rating). This load type includes American & European lathes without a clutch, some pumps, blowers, paper cutters, flywheel driven equipment, woodworking saws, dough mixers, meat grinders, motors rated below 1000 RPM, etc.

**NOTE:** For instant reversing (as for rigid tapping), use a converter with twice the KW rating of the motor.

#### Category 3:

This load type includes Design "E" motors, Chinese,

Taiwanese, Brazilian\*, Mexican motors, and machinery starting under load such as pumps, refrigeration compressors, etc., and for any motor which is used for instant reversing, as for rigid tapping. Use a converter with twice the KW rating of the motor.

\***NOTE:** Some Brazilian motors may require using a converter sized 3 times the KW rating of the motor.

#### Category 4:

Extreme start-up loads include laundry extractors, hoists, elevators, etc. This type of equipment can be extremely heavily loaded on start-up. Use a converter with three times the KW rating of the motor. Consult Phase-A-Matic, Inc. for the possibility of successfully using a converter sized less than three times larger on these machines.

#### Category 5:

Often hydraulic pumps, which come under a momentary load during use, will be loaded well beyond their rated KW for the brief period of maximum PSI. Examples include bailers, compactors, paper cutters, shears, pumps, etc. The KW rating of the converter must be at least as high as the actual KW developed by the motor during maximum compression. Size accordingly.

### 2. Resistive, Computer, Rectifier, & Transformer Loads

Size a minimum KW of 50% larger.

### 3. Multiple Motor Applications

The Rotary Converter can run multiple loads simultaneously, but only within certain parameters. RESTRICTIONS APPLY! Contact Phase-A-Matic, Inc. for consultation.

For further technical assistance, call Phase-A-Matic, Inc. at: 661-947-8485, Monday – Friday, Pacific Time.