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American Rotary :: > 3 Phase Converters

## 3 Phase Converter... Run 3-Phase Equipment from 1-Phase Power

**24/7 TECH SUPPORT**  
TOLL FREE 1-888-743-6832

GENTEC American Rotary manufactures and distributes the largest 3 phase power converter selection in the country. Our 3 phase converters are an excellent solution wherever utility three phase is not available. The GENTEC/Baldor design utilizes a proprietary soft start 3-phase generator with power factor correction that ensures extremely smooth and balanced three phase output that will safely and economically operate 3-phase machinery with balanced 3-phase power. Manufactured in the USA.


[Pricing and Specifications >](#)  
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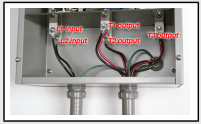
(Rubber Isolation Mounts Sold Separately)

### FEATURES:

- Custom Integrated Soft Start
- Advantages of the GENTEC/Baldor Design
- Protected by PowerGuard™
- CNC Precision balanced
- Heavy-Duty / Hard-Starting
- Flexible mounting options
- 3-wire latching motor starter
- Emergency stop
- Easy Installation
- Expandable / Energy Saver system
- Run Multiple Motors



**Rubber Isolation Mounting Feet:**  
Protect your phase converter investment for as little as \$19.95/set.  
[Learn More](#)



**Easy Installation:**  
View American Rotary's online step-by-step easy installation pictorial.  
[Learn More](#)

Basic Specifications:

Size (HP)	Size (kW)	1-Phase / 3-Phase Amps (Max)	Full Load Transformer	Idle Power	Weight (Lbs)	Buy It Now	Detailed Information
3	2.2	19 / 9.5	6 Kva	.31 kW	64	<b>\$ 345</b>	<a href="#">3HP Specifications</a>
5	3.7	30 / 15	6 Kva	.48 kW	86	<b>\$ 395</b>	<a href="#">5HP Specifications</a>
7.5	5.6	44 / 22	9 Kva	.70 kW	107	<b>\$ 495</b>	<a href="#">7.5HP Specifications</a>
10	7.4	56 / 28	15 Kva	.89 kW	146	<b>\$ 645</b>	<a href="#">10HP Specifications</a>
15	11.2	84 / 42	30 Kva	1.34 kW	210	<b>\$ 895</b>	<a href="#">15HP Specifications</a>
20	14.9	108 / 54	30 Kva	1.72 kW	258	<b>\$1045</b>	<a href="#">20HP Specifications</a>
25	18.6	136 / 68	30 Kva	2.16 kW	276	<b>\$1295</b>	<a href="#">25HP Specifications</a>
30	22.4	160 / 80	45 Kva	2.55 kW	362	<b>\$1595</b>	<a href="#">30HP Specifications</a>

40	29.8	208 / 104	45 Kva	3.31 kW	427	<b>\$1995</b>	<a href="#">40HP Specifications</a>
50	37.3	260 / 130	75 Kva	4.14 kW	479	<b>\$2375</b>	<a href="#">50HP Specifications</a>
60	44.7	300 / 150	75 Kva	5.03 kW	583	<b>\$2695</b>	<a href="#">60HP Specifications</a>

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See also: [Transformers](#)> [Load Centers](#)> [Safety Switches](#)> [Electric Motors](#)> [Parts](#)> [Accessories](#)>

### **DETAILED FEATURES LIST:**

#### **Integrated Custom Soft Start:**

GENTEC's proprietary motor-integrated solid state soft-start is built into the motor/generator housing. Inrush (starting) current is drastically reduced by softening the initially required starting torque that is used to spin the generator. The GENTEC and Baldor engineering departments worked closely to design our custom motor/generator specifically to design a phase converter generator that would minimize the inrush current upon start-up. The results were so dramatic - an 83% reduction - that the GENTEC/Baldor motor/generator has been granted a Soft-Start rating. The GENTEC/Baldor generator design is proprietary and is available only through American Rotary. [Back to top](#) >

#### **Protection by PowerGuard :**

GENTEC American Rotary PowerGuard™ technology is designed to protect your equipment in power failure and brownouts. When power is restored, the default "OFF" position on the converter will remain until the operator re-starts the unit. This mechanism protects any equipment down the line from the converter that may be lacking built-in power protection. [Back to top](#) >

#### **Precision Balanced for CNC:**

Each 3 phase converter is balanced under load and no-load conditions to better than +/-5% which is essential for CNC applications. The ISR (Inverter Spike Resistant) magnet wire utilized in our custom phase converter generator virtually eliminates spikes common to CNC equipment. ISR wire makes motors 100 times more resistant to transient voltage spikes, high frequencies, and short rise time pulses that are often found in CNC equipment and inverters (VFD's). The use of ISR magnet wire dramatically extends the life of the motor/generator. [Back to top](#) >

#### **Heavy-Duty / Hard-Starting:**

GENTEC American Rotary 3 phase converters are rated "Heavy-Duty" making them ideal for instant motor reversing, tapping, and other hard starting and heavily loaded applications. [Back to top](#) >

#### **Flexible Mounting Options:**

Since GENTEC American Rotary phase converter panels are not mounted directly to the motor/generator, there are several mounting options for your convenience. If desired, the motor generator can be housed in a separate room or structure away from the control panel. The control panel can simply be mounted right alongside existing service. [Back to top](#) >

#### **Built-In 3-Wire Latching Motor Starter:**

#### **Do you know....**

GENTEC American Rotary takes pride in supporting domestic resources. While many motor manufactures have taken their production overseas, our custom phase converter generator is manufactured entirely in the United States.

#### **Better Business Bureau:**

Serving the industry since 1991, GENTEC American Rotary's dedicated team is committed to product excellence and complete customer satisfaction.

#### **Sizing Assistance:**

Our sizing technicians are available 24/7 to answer your questions and assist you in sizing a rotary 3 phase converter specific to your specific equipment and application. [Learn More](#) >

#### **Have a Question?**

**TOLL FREE**  
**24/7 TECH**  
**SUPPORT**  
**1-888-743-6832**

#### **The Ultimate in Phase Converter Technology!**

American Rotary's digital solid state phase converter delivers 1% voltage balance under any load condition! This truly is the ultimate phase converter! [Learn More](#) >

#### **UL Listed Phase Converter**

GENTEC American Rotary utilizes a 3-wire latching motor starter to automatically start the converter at the touch of the "START" button. Each converter is pre-wired for remote start and time delay. [Back to top >](#)

**Emergency Stop:**

When the converter is powered on and the LED is illuminated, the "STOP" button is raised for quick shut-off to enhance operational safety. [Back to top >](#)

**Easy Installation:**

Easily accessible busbars are safely located in a large compartment just below the firewall. This simple design eliminates messy wiring and cluttered conduit boxes. Technical support is available toll free 24/7 to answer any questions you may have. Our easy to wire 3 phase converter systems are shipped with a complete instruction manual and 3 phase converter schematic for your reference. Please [click here](#) to view the installation pictorial online. [Back to top >](#)

**Expandable / Energy Saver System:**

GENTEC American Rotary 3 phase converters can be run in series with one another as is sometimes necessary. Shops purchase additional equipment and need to increase the capability of the phase converter. Prior to GENTEC's development of a soft-start phase converter generator, this option was often used to reduce energy consumption. Although less beneficial with the integration of our soft-start motor/generator, two or more converters can be run in series with each other for these purposes. Please contact our toll free technical support line for assistance with these options at 1-888-7GENTEC. [Back to top >](#)

**Run Multiple Motors:**

GENTEC phase converters are capable of running up to three times the rated horsepower of the converter. Please call our technical support line toll free at 1-888-7GENTEC for assistance with this option. Because every GENTEC American Rotary phase converter is balanced from a no-load condition, much smaller motors (with no minimum) can safely be run with any of our rotary converters. For example, a 2HP mill can run safely on our 40HP phase converter without damaging the smaller motor, and while still maintaining a properly balanced voltage. [Back to top >](#)

**The GENTEC/Baldor Design Advantage**

Two industry leaders: GENTEC - the leading OEM phase converter manufacturer, and Baldor Electric - one of the most well-known and respected motor manufacturers in the world, have come together to design this exceptional 3 phase power converter. Our custom Baldor phase converter generator with integrated soft start and power factor correction took more than a year to develop and was designed specifically for phase converter applications and use. [Back to top >](#)

**GENERAL SIZING INFORMATION:**

Please call toll free 1-888-743-6832 for assistance.

American Rotary offers a UL/CSA listed single to 3 phase converter line to meet your job requirements.. [Learn More >](#)

**Static Phase Converter**

Our complete line of static phase converters are in stock and ready to ship! [Learn More >](#)

**Why Are They So Quiet?**

This informative article describes the different kinds of noise associated with rotary phase converters, and why American Rotary phase converters are so quiet! [Learn More >](#)

**Better Business Bureau**



GENTEC American Rotary is an active member of the Better Business Bureau and strictly adheres to Truth in Advertising, ethics, and privacy standards. [View Report >](#)

**Have a Question?**

TOLL FREE  
**24/7 TECH  
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1-888-743-6832

**Do-It-Yourselfers!**

Do you know how to build a 3 phase converter, and need a resource for components? American Rotary has what you need to build a single phase to 3 phase converter! [See Selection >](#)

Determining the load type of your application is the first step in properly sizing an American Rotary phase converter. The following are some guidelines to help you determine the type of load:  
Easy Load - no flywheel, clutch, little resistance/inertia, 1-2 times full load current on start-up  
Medium Load - machine inertia, medium resistance, 3-4 times full load current on start-up  
Hard Load - flywheel, no clutch, Start against load, 5-6 times or locked rotor current on start-up  
Very Hard Load - elevators, hydraulic pumps under continuous load etc.  
Frequent Start - reversing, heavy running loads  
 CNC - turning centers, PLC's, EDM, CNC machining  
Resistive Load - heater, transformer, welder, power supply etc.

#### Single Motor Loads (Non-CNC, Non-Resistive)

Examples: milling machines, blowers, band saws, lathes, pumps, etc.

- Size according to the load type - Easy, Medium, Hard, or Very Hard
  - For Easy Loads: Choose the converter HP that is one size larger than the load.
  - For Medium Loads: Choose the converter size by multiplying HP by 1.5 and round up.
  - For Hard Loads: Choose the converter size by multiplying HP by 2.0 and round up.
  - For Very Hard/ Frequent Starting Loads: Choose the converter size by multiplying HP by 2.5 and round up.
- Determine that the total running current is no more than 75% of full load 3-phase current.
- Increase converter size by one if there are any motors that are foreign, high efficiency, or have locked rotor currents that are larger than 6 times full load current.
- Increase the converter size by the ratio of load RPM to 1800 (common for 2-speed motors).

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#### Single Motor Loads (CNC, Non-Resistive)

Examples: CNC machining, turning centers, PLC's, EDM, etc.

- Determine the converter size by either of the following:
  - multiplying HP (of the spindle) by 2.0 for all standard axis equipment, or
  - multiply the machine kW by 2.7, then round up to the nearest HP converter.
- Increase one size for any non-standard equipment (such as a forth axis, bar feeder, etc.)
- Determine that the total running current is no more than 60% of full load 3-phase current.
- Increase converter size by one if there are any motors that are foreign, high efficiency, or have locked rotor currents that are larger than 6 times full load current.
- Increase converter size by the ratio of load RPM to 1800 (common for 2-speed motors).

Note: Be sure not to combine other loads with CNC applications unless they are small compared to the loads rating. Call technical support toll free 1-888-7GENTEC for assistance.

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#### Single Motor Loads (Resistive)

Examples: heaters, transformers, welders, power supply, etc.

- Divide the equipment current rating (use the 230 Volt amperage of the equipment) by 0.6
- Round that number up to the nearest full load current of the converter to maintain a 5% voltage balance.

Note: If only KW are known, estimate the current by multiplying the kW by 3.75.

kW x 3.75 = current (amps)

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#### Multiple Motor Loads

Examples: 2 milling machines, a dust collector and table saw, etc.

Note: Our phase converters are rated to run multiple machines up to 3X's the rated horsepower of the converter. Please call 1-888-743-6832 for a sizing recommendation if you are considering running multiple machines. Our engineers and computer simulation models will determine a correctly sized converter for your application. Running multiple machines on a single converter is common, but specific conditions must be satisfied:

- The motor loads must all be simple (no resistive, CNC, or hard starting loads).
  - The motors must all be light to medium loads. These lightly loaded 3-phase motors become a part of the phase converter system and assist in generation of the 3rd line.
- Use the Single Motor Loads formulas above to determine the largest converter needed for each piece of equipment. Your converter cannot be smaller than this. For multiple motor starting, size each piece and add the converter sizes together.
  - The other equipment (totaling no more than 2 times the rated HP of the converter) may be started, assuming the loads are not heavy.

Note: Combined motor loads and resistive loads must be sized by subtracting the resistive current from the full load current rating of the converter. Combinations exceeding the hp rating of the converter should be wired using the multiple motor load wiring diagram.

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**GENERAL PHASE CONVERTER INFORMATION:**

Phase converters are used to run 3-phase equipment on single phase power. There are several types of 3 phase converters - rotary, static and digital solid state, and drive type inverters, or frequency drives- to name a few. They can all be used to convert single phase electricity to 3-phase power. They are very commonly used to power 3-phase commercial and industrial grade equipment and electric motors. Focusing on the most familiar 3 phase power converters, static and rotary, there are several key differences in the way they work and also in their reliability.

Rotary 3 phase converters are often found in home shops, small commercial or industrial settings. Rotary phase converters convert single-phase power into three-phase power at 100% the rated horsepower. It is very cost-effective to power three-phase electric motors this way, and they are fairly easy to install. Phase converters are rated by the maximum horsepower that they can handle. It is important to verify that the phase converter is rated for the specific kilowatts (kW) that your equipment or machine requires. Our technical support team is available 24/7 to answer any questions you might have, and to assist you in properly sizing a phase converter to fit your specific application.

A static phase converter, on the other hand, is very simple to install, but serves only to start an electric motor. After the motor has started, it continues to run on only single phase power. The equipment will only be able to run at about 2/3 of the machinery's available horsepower, and the power is unbalanced. The unbalanced output and "single-phasing" of a 3-phase motor is hard on 3-phase equipment and may shorten the life of the motor itself. GENTEC American Rotary developed a static phase converter to overcome many of the shortcomings of the typical static phase converter. If you are considering a static phase converter for your application, please visit the [Static Phase Converter](#) section of our website for more information.

In contrast, a true rotary phase converter produces an electrical current in all three phases of operation of an electric motor. Because of the consistent energy flow, the electric motor will operate at or near its full horse power capacity. A rotary phase converter is usually recommended over a static type for this reason alone. Sometimes the power loss isn't as significant for an application, and a static converter may be a good choice. But, if an application requires constant current and full horse power, a rotary phase converter is definitely indicated.

When working with electricity and 3 phase power converters, safety is extremely important. Before installing a phase converter, be sure to follow the local electrical safety codes for your location. Electrical codes will help you to safely wire 3 phase converter systems and ensure the proper operation of your phase converter or electric motor. Any electric motor should be grounded. Grounding prevents electrical current from passing through your body when an electrified wire could come into contact with metal on a phase converter enclosure, electric motor, or any other equipment.

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