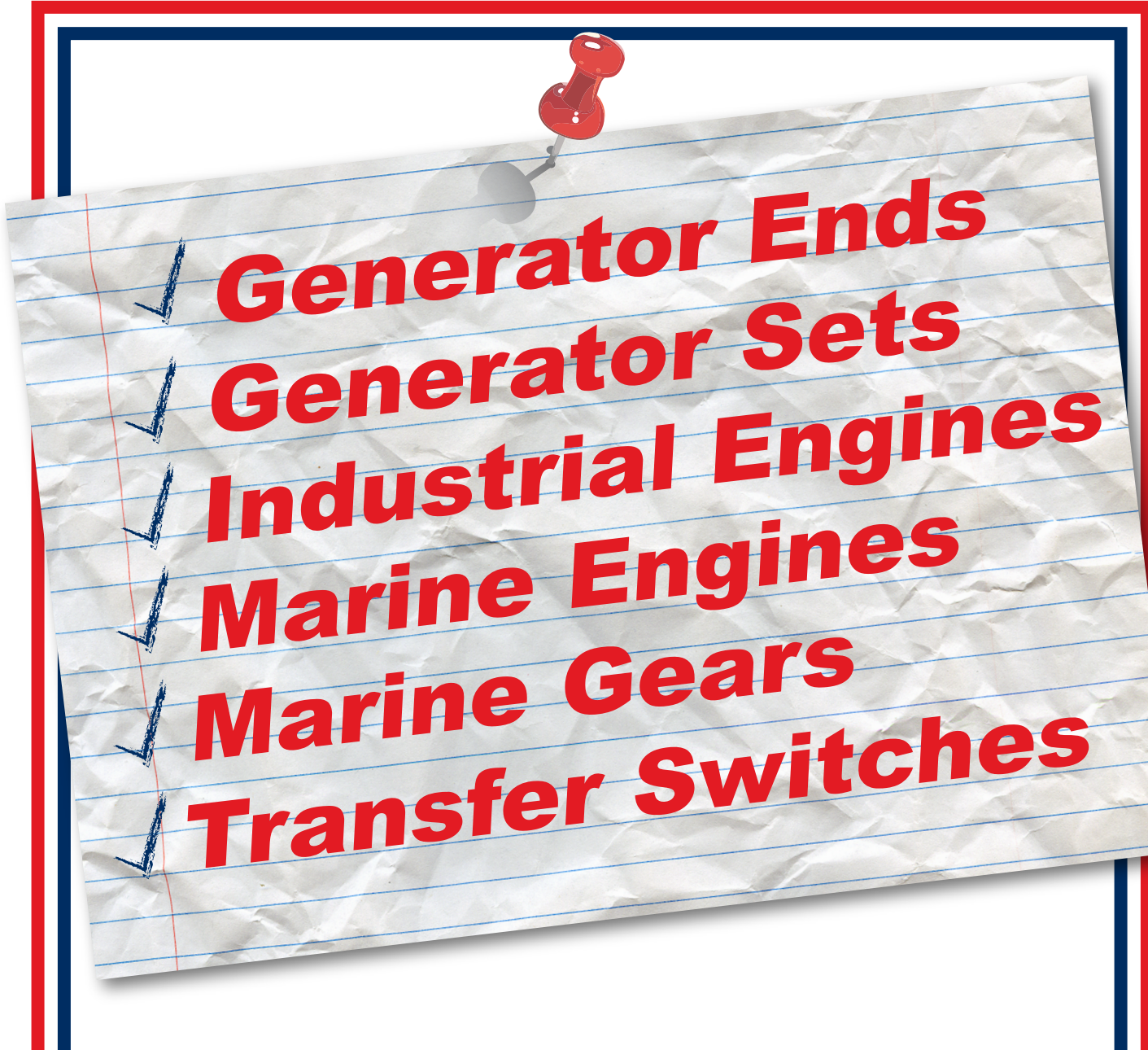


Depco

BUYER GUIDE



- ✓ **Generator Ends**
- ✓ **Generator Sets**
- ✓ **Industrial Engines**
- ✓ **Marine Engines**
- ✓ **Marine Gears**
- ✓ **Transfer Switches**

Buying power equipment can be a daunting task, particularly if it's your first time. There are many factors that need to be considered and many questions that need to be asked. And those factors and questions vary based on the equipment you need. Buying an industrial engine is different from buying a marine engine, and buying a generator end is in turn not the same as buying a generator set.

All of the technical details and decisions can get confusing if you don't know what you're doing. So, how do you know what to look for? How can you be sure that the equipment you're getting is the equipment you need for your specific purposes? Have no fear.

This basic Buyer's Guide will help you ask the right questions to understand what you need to purchase, for six different types of power equipment: **generator ends, generator sets, industrial engines, marine engines, marine gears, and transfer switches.**

>>> Generator Ends <<<

A generator end is the same as an alternator. It's the part of the generator that produces power, turning mechanical energy into electrical energy. Your primary concern when you buy a generator end is how much power you need it to produce. Chances are you need it for a specific building or a specific area. How big is the area and how much electricity does/will it use? You want to find a generator that can meet those needs .

A generator's power may be measured in either kilowatts (kW) or kilovolt-amperes (kVA). Kilowatts measure the generator end's real power (the amount of power that does actual work), while kilovolt-amperes measure its apparent power (the combined complex power of the generator's real power and reactive power; reactive power cancels out some of the real power, making this a less

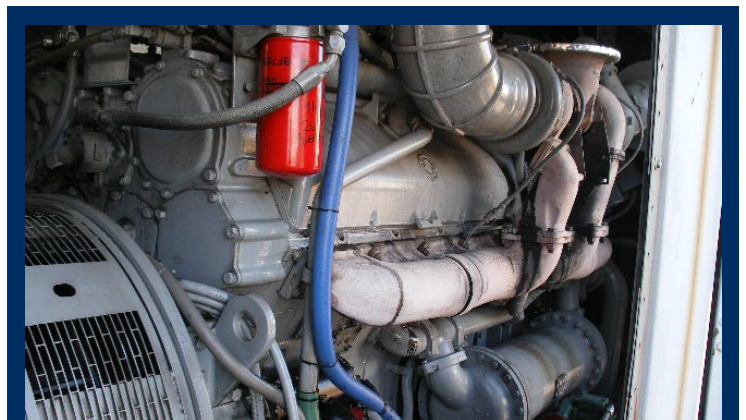
accurate measurement of the generator's actual capabilities). Some units will tell you both numbers. Find out the numbers you'll need for your building or application and keep them in mind when you look at generator ends kW or kVA measurements.

You'll also want to look at other power-related specifications of the generator end, such as the voltage (in Volts) and the frequency (in Hertz). The RPM is important as well, since it's these revolutions that produce the mechanical power that's converted into electricity.

>>> Generator Sets <<<

A generator set is a generator end and an engine in an integrated package. Because a generator end is included in a generator set, you'll need to consider all the same issues of power and RPM for what your specific application needs.

Another important factor is how much you're going to use the generator. Will it need to run continuously, as the primary source of power for your building or application or will it be a backup power source, only kicking in if the main electricity goes out?



Natural gas units are normally larger in size than a diesel unit of the same kW and also last longer.

You'll also need to consider the kind of fuel you want it to run on. Your three major options are diesel, natural gas, and bi-fuel. Diesel fuel has a higher cost than natural gas, but it's more efficient too, which means you get more power for your money. It's also more reliable in terms of maintaining a steady stream of power, which is good for hospitals and other mission-critical applications where a power outage would be detrimental. A natural gas unit is typically larger than a diesel unit of the same kW and natural gas units also last longer than diesel. However, the initial purchase price of a diesel generator is generally much higher than other types of generators, and both they and their individual components tend to be very heavy and bulky. If space is an issue, this might not be the best choice. You also may need a base fuel tank for the generator, which needs to be refueled periodically.

You'll also need to consider the kind of fuel you want it to run on. Your three major options are diesel, natural gas, and bi-fuel.

Natural gas generators run much cleaner than diesel. As previously mentioned, the fuel is also cheaper, though less efficient. The fuel is piped in directly through natural gas pipelines, and thus doesn't need to be stored and replenished. However, sometimes the flow from the pipe gets interrupted, which in turn interrupts the flow of power. In addition, natural gas generators are more expensive to run and maintain. Plus, natural gas is highly volatile and explosive, if anything goes wrong with the pipes.

A bi-fuel system uses both types of fuel, running on natural gas most of the time, but with a diesel reserve in case the flow gets interrupted.

If you're using a diesel generator, you'll need to consider what size fuel tank you'll need, and whether it needs to comply with any specific UL regulations. Depending on what you use your generator for, there may also be EPA regulations and emission standards to consider.

Another important factor is whether or not the generator needs to be enclosed. This all depends on where it's going to be kept/stored. If you need an enclosed unit, will it also need to be weatherproofed and/or soundproofed?

>>> Industrial Engines <<<

Industrial engines can be used to power generators of all types, as well as other heavy equipment such as irrigation pumps, corn grinders, coffee de-pulpers, and certain types of farm equipment. They're also used for large transport such as buses, 18-wheelers, and even some airplanes. When deciding on an industrial engine, first you'll need to consider what you plan to use it for, and what it needs to accomplish.

Just like with generators, you'll also need to consider the power that the unit produces. In engines, the important unit is horsepower (hp), which measures how much work is being done by the engine. What horsepower do you need to serve your particular purposes?

Other questions you should ask include whether or not you'll need a radiator for the engine, and what size of bell housing you'll need for the flywheel.

>>> Marine Engines <<<

A marine engine is similar to a regular engine in a lot

of ways, and so it will have a lot of the same considerations before purchase -- things like horsepower and bell housing. But marine engines, obviously, are used on the water, which presents a whole new set of considerations as well.

The first question to ask is do you need a marine propulsion engine, or a marine auxiliary engine? The answer depends on what you plan to do with it. Marine propulsion uses a propeller to drive an aquatic vehicle across the water. It's used in boats and ships and such. One important consideration of these engines is the type of craft you need it for, and whether that craft will be used for work or pleasure. Marine auxiliary engines are also designed to run on and near the water, but they're used to power generators, water pumps, winches, and other non-mobile applications.

With marine engines, you also have several options for keeping the unit cool. Most common is a raw water system, which draws from the body of water that your boat is floating in, circulates that water through the engine block as a coolant, and then expels it through the exhaust pipe. This is fine for freshwater, but can cause problems in saltwater, as salt is corrosive and can damage your engine.

To avoid corrosion, there are alternative cooling options. A heat exchanger, for instance, still takes in raw water, but uses it to cool pipes full of freshwater coolant, which then circulates through the engine in a closed loop system, so the salt never gets near the engine itself.

If your vessel is meant for shallower coastal waters, however, you also have to worry about seaweed, silt, and other debris getting mixed in with your raw water and clogging up the pipes. So to avoid circulating raw water altogether, you can use a keel cooled system, which eliminates the need for a heat exchanger

by pumping coolant through pipes around the outside of the hull, where it's cooled by the body of water itself before circulating through the engine.

Do you need a marine propulsion engine, or a marine auxiliary engine? The answer depends on what you plan to do with it.

>>> Marine Gears <<<

Marine gears are the boat's transmission. They're responsible for the transfer of power from the engine to the drive mechanism. Because of that, one of the major factors in what kind of gears you get is the kind of engine that will be driving them. What are the engine's specifications in terms of horsepower, bell housing size, and so on?

You'll also need to know what gear ratio you need: i.e., the number of revolutions of the motor for every revolution of the propeller. Since one of the functions of the gears is to reduce the revolutions of the propeller in relation to the motor to increase efficiency, this is also known as the reduction ratio. It's important to get the exact ratio you need, because once the equipment is installed, the ratio can't be changed without either replacing the propeller or replacing the transmission.

>>> Transfer Switches <<<

Automatic transfer switches switch an electrical load from a primary power source to a backup generator during times of power loss or outage. They're very useful to stores, office buildings, and other places

where the disruption of power would be detrimental to business.

The first thing you need to consider is the power in the switch. How many amps do you need, and what voltage? And how many power sources and backups do you need to accommodate in total? Do you need a 3 or 4 pole switch? And what about the current? Do you need a single phase switch, or a three phase? Does your switch need a solid neutral?

With a transfer switch, you also need to consider certain regulations and standards that may need to be met, depending on where the switch is going to be installed, for instance, the National Electrical Manufacturers' Association standards for electrical enclosures. If it's an indoor switch, then you'll need to have a NEMA 1 enclosure for it, which protects against dust and debris and prevents accidental contact with live parts. If it's going to be outside, though, such as on a shipping dock, construction site, or even somewhere underground like a subway tunnel, you'll need a NEMA 3 enclosure, which is weatherproof and can withstand the elements. If the switch is going to be installed as service entrance equipment, then it will also need to be service entrance rated by the National Electrical Code.

>>> Summary <<<

These are many things to take into consideration when shopping for power equipment. When researching any major equipment purchase, though, there are a few basic issues to think about:

1. What's your budget for the purchase?
2. Are you looking for the cheapest model available, or are you willing to spend a little more to get something higher quality?
3. How much can you expect to spend on maintenance and repairs, and will that cost outweigh any savings you may have gotten

on the purchase price?

4. And finally, what's your estimated Return On Investment?
5. How long until you're able to recoup the cost of the equipment with monetary savings, labor savings, or both?

Obviously, your own personal preference for make and model of specific equipment factors into the decision as well. If something has served you well in the past, then there's no harm in sticking with what works. Still, it never hurts to shop around a bit, to see if there's an updated model, another option that might be better suited to your needs, or just a better deal available.

The most important questions, though, are **what do you need to do, and how do you want to do it?** Nobody knows your business better than you. Your needs are unique, and whatever equipment you buy should be able to meet those needs perfectly. Because beneath all of the technical specs, necessary features, and pricing options, the equipment isn't what really matters. What matters is keeping your business running smoothly and efficiently, by whatever means necessary.

If we can answer any questions for you, please don't hesitate to get in touch with us.

Depco is here and we look forward to hearing from you!

QUICK GUIDE TO BUYING GENERATOR ENDS



What KW or KVA is Needed?

What is the RPM?

What is the voltage?

What is the bell housing size?

What is the power factor?

What is the frequency?

Do you have a preference on the make or model of the generator end required?

View our [full generator end inventory](#) and get a quote. Or call **800.723.3726 to speak with a power system consultant.**



With quality products, unlimited resources and unmatched industry expertise, we're **generating more** every day. That's the Depco way.

QUICK GUIDE TO BUYING GENERATOR SETS



What KW or KVA is needed?

Is your requirement single or three phase?

Is the unit going to be set up 50 or 60 hertz?

What is the voltage?

Is the application prime or standby?

Does the unit need to be enclosed? (If so, does it need to be weatherproof and/or sound attenuated?)

Is your requirement for natural gas or diesel?

If diesel, do you need a base fuel tank? (If so, what size and are there any UL regulations to be met?)

Does your application need to meet current EPA/Tier regulations?

View our [full generator set inventory](#) and get a quote. Or call **800.723.3726 to speak with a power system consultant.**



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QUICK GUIDE TO BUYING INDUSTRIAL ENGINES



What HP do you require?

Do you have a preference on the make or model of the engine required?

What size bell housing do you need?

What RPM do you require?

What is the application?

Do you need a radiator?

View our [inventory of industrial engines](#) and get a quote. Or call **800.723.3726 to speak with a power system consultant.**



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QUICK GUIDE TO BUYING MARINE ENGINES



What HP do you require?

What is your application? (Work boat or pleasure craft?)

Do you need marine propulsion or marine auxiliary power?

How do you need the engine cooled? (Heat exchanged or keel cooled?)

What size bell housing do you need?

Do you have a preference on the make or model of the engine required?

View our [inventory of marine engines](#) and get a quote. Or call **800.723.3726 to speak with a power system consultant.**



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QUICK GUIDE TO BUYING MARINE GEARS



What engine will be driving this marine gear?

What is the ratio for the marine gear required?

What is the HP of the engine?

What is the size of the bell housing?

Do you have a preference on the make or model of the marine gear required?

View our [inventory of marine gears](#) and get a quote. Or call **800.723.3726 to speak with a power system consultant.**



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QUICK GUIDE TO BUYING TRANSFER SWITCHES



How many AMPS?

What is the voltage?

Does the ATS need a NEMA 1 (indoor enclosure) or NEMA 3 (outdoor enclosure)?

Does it need to be 3 pole or 4 pole?

Will this be a single or three phase switch?

Does it need to have a solid neutral?

Does it need to be service entrance rated?

View our [inventory of manual and automatic transfer switches](#) and get a quote. Or call **800.723.3726 to speak with a power system consultant.**



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