MagnaLift MAGNETIC Power-Grip

Important information about your new lift magnet!

OBSIDIAN Manufacturing Industries,Inc.

READ THIS INFORMATION CAREFULLY BEFORE OPERATING MAGNET

OPERATING INSTRUCTIONS

1. Before using, the battery should be checked to insure it is sufficiently charged. See battery installation and charging instructions.
2. When using, wipe clean the bottom of the lifting magnet and the area of the workpiece where the magnet will be located. The magnet should be centered on the workpiece.
3. After positioning the magnet, turn switch to "on" and check meter to insure needle is into green zone on the magnet side. Charging cord must be disconnected.
4. Lift the piece slightly and jar the load to insure positive holding power is available.
5. Move the piece smoothly to the desired location, avoid severe jarring and swinging of the load.
6. To release the load turn switch to "RELEASE" and hold for 2-3 seconds.

Please contact us immediately with any questions or concerns you may have about your lift magnet!

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CAUTION: DO NOT RE-ENERGIZE MAGNET UNTIL IT HAS BEEN PLACED IN CONTACT WITH THE NEXT PIECE TO BE LIFTED.

MAINTENANCE INSTRUCTIONS

Battery should be kept charged as described. Poles of the magnet should be kept free from rust and periodically inspected for nicks and burrs which reduce lifting capacity.
Burrs may be removed by filing, however, deep nicks may require grinding of the magnet's pole face.
Care should be taken to avoid dropping, banging or slamming the magnet into other objects.
The coil of the magnet is encapsulated in a strong, rigid epoxy and care should be taken to prevent sharp objects from penetrating it.

INDICATING METER

The panel meter indicates the degree of charge of the battery. For a fully charged battery the meter pointer will be ¼ into the safe green area on the magnet side and represents 12 volts. The green/red boundary represents 10.8 battery volts. Further dropping of voltage (into RED zone) reduces the magnet lifting capacity to an unsafe condition.

Therefore, indications in the RED zone call for immediate recharging.

THE MAGNET SHOULD NOT BE OPERATED IF THE METER POINTER MOVES INTO THE RED ZONE. DON'T PUSH YOUR LUCK.

If the battery is low, recharge it.

BATTERY INSTALLATION

If a dry-charged battery is used, the electrolyte should be added to the battery before it is installed in the power pack. The battery manufacturer's recommended procedure for adding electrolyte to the dry-charged battery is as follows:

1. Break vacuum seal in each cell.
2. Fill all cells to split ring with 1.265 battery grade electrolyte.
3. Never add water when preparing a new dry energizer for service.

Do not install battery in the pack until after activation and a thorough washdown. The performance of dry-charged batteries after activation may be quite variable, depending upon the storage conditions. There is no degradation in battery quality associated with this. Complete capacity is recovered after from one to two discharge-charge cycles.

CAUTION

Rubber gloves, rubber apron, and goggles should be worn when handling acids.

The red battery lead should be connected to the battery post marked + and the black battery lead should be connected to the other battery post.

The power pack should not be tilted beyond 30˚ to avoid spilling acid on the power pack or magnet.

BATTERY CHARGING

Always check the electrolyte level of all cells and add distilled water as needed.

The built-in charger is turned on by connecting the Power Pack to the 115 VAC line using the line cord packed with the magnet. The control switch must be in the OFF position when the charger is connected to the AC line. Leaving the control switch in the ON position will greatly increase the time required to recharge the batteries and damage the charger. An accurate meter indication is only achieved in the "on" position when the charging cord has been disconnected.

The charger is designed to charge at the maximum safe rate. It is electronically regulated to automatically turn off when the battery is recharged. The meter pointer will be in the charge region while the battery is being charged and will return to the "zero" center position when charging is completed. However, only a hydrometer will show the true state of charge.

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Batteries should be charged in a well-ventilated area and never with the power pack lid down. Battery gases are explosive. Recharging the battery every night will increase battery life and magnet safety. Although there is an automatic cutoff in the charger to prevent over charging and boiling the batteries, it is NOT recommended to leave the charger on for periods exceeding 24 hours.

IMPORTANT FACTS FOR THE SAFE OPERATION OF LIFT MAGNETS
Load characteristics other than just weight must be considered in order to determine the safe weight that any magnet can lift.

This statement is true for any lifting magnet because they all operate using the same fundamental laws of physics. Magnetic power is often pictured as lines of magnetic force flowing from north pole to south pole. Anything that limits the flow of these magnetic lines of force obviously reduces the magnets lifting ability. There are four important factors which limit the flow of these lines of force.

1. **LOAD SURFACE CONDITIONS**
   Magnetic lines of force do not flow easily through air; they need iron in order to flow freely. Therefore anything that creates an air gap between a magnet and the load limits the flow of magnetic force and thus reduces the lifting capacity of a magnet.
   Paper, dirt, rust, paint and scale act the same as air. Also, a rough surface finish is the same as dirt because it creates an air gap between the magnet and the load.
2. **LOAD LENGTH OR WIDTH**
   When the length or width of a load increases it ceases to lie flat and the load begins to droop at the edges. This drooping or sagging of the load can create an air gap between the load and the magnet. If this occurs then the lifting capacity of the magnet is reduced.
3. **LOAD THICKNESS**
   Magnetic lines of force are more effective when they flow through iron instead of air. The thicker the load is the more lines of magnetic force are able to flow. After a certain thickness of load no more lines of force will flow because the magnet has reached its full capacity.
   Thin material (load) means less iron available and thus fewer lines of magnetic force flow from the magnet into the load. Therefore the lifting ability of the magnet is reduced.
   Every magnet should be rated to tell the user what minimum thickness of load is required to reach full lifting capacity. Below such thickness of load the user knows he must derate the lifting capacity of the magnet.
4. **LOAD ALLOY**
   Low carbon steels, such 1020 steel, are nearly as good conductors of magnetic lines of force as pure iron. However, many other alloys contain non-magnetic materials which reduce the ability of magnetic lines of force to flow into the load. An alloy such as 300 series of stainless steel is almost as poor a conductor of magnetic force as air.
   Type 416 stainless steel is considered magnetic, but it contains enough chromium so that it can only conduct one half as much magnetic force as 1020 steel. The carbon content of cast iron reduces the flow to one half of the magnetic force of 1020 steel.