



Poweram 9000 Specifications Directional Rod Pusher

POWERAM hydraulic rod pusher/puller machines are being used to replace existing gas, water, and sewer lines by splitting and/or bursting the old pipe and pulling in a new one.

The POWERAM model 9000 is designed to help you do a tough construction job – installing and/or replacing underground utility service lines where trenching is not possible or desirable.

This rugged, dependable machine installs new underground utilities by pushing steel rods under roadways, etc. and pulling the required pipe or cable back. The Model 9000 is designed to rotate the rod string as it is being pushed. This increases the accuracy of the push and allows for the use of steering techniques to guide the path. When tracked by an electronic locating device such as the Radiodetection RD385 DataBore, this machine can keep the rods on line and grade and/or make a curved push to go under or around an obstruction.

The Model 9000 can also be used to replace existing lines by pulling pipe splitting and/or bursting tools through the old pipe and pulling a new pipe into the same space. The new pipe can be the same size or larger than the old pipe.

One person can operate the Model 9000. It has two hydraulic cylinders controlled by one valve, which puts the operator in control of the machine and his/her own safety. A pressure gauge gives the operator constant feedback on the amount of force being used. The twin cylinders actuate the patented jaw system that grips the push rods. They apply their force at the centerline of the push rod, so they do not introduce any bending forces. The push centerline is 9 inches above the bottom of the machine. The Model 9000 can pull up to 8" pipe (or two 4" pipes) in most soil conditions. Larger pipe can be installed in suitable soils. The longest practical distance for accuracy depends on soil conditions and operator experience.

The Model 9000 has two additional hydraulic cylinders that extend the back plate to hold the machine securely in the work pit. The machine length can be varied from 5'3" to 8'3". When the 5' long push rods are used, the machine must be extended to at least 6'10" long to have room to add and remove the rods within the length of the machine. If 3' or 4' long rods are used, the overall length could be as short as 5'3' and still allow room to add and remove the rods within the length of the machine.

The **Model 9100** is the same machine except that it does not have the back brace cylinders. The back plate can be adjusted manually to suit the rods being used and/or to the length of the shoring box. We recommend using the model 9100 with the Model 9150 Safety Shoring Box when using the 3' or 4' long rods, and the Model 9160 Safety Shoring Box when using the 5' long rods. The Safety Shoring Box not only protects the operator; it also provides a faster and more stable set-up.

MODEL 9000 SPECIFICATIONS:

- 98,162 pounds of pushing force at 2,500 p.s.i.
- 82,460 pounds of pulling force at 2,500 p.s.i.
- 28" wide x 20" high x 63 to 99" long
- Machine weight approximately 1,500 pounds
- 14" stroke hydraulic push/pull cylinders (2)
- 36" stroke hydraulic back brace cylinders (2)
- Control valve station with pressure gauge
- Hydraulic flow required: 10 to 30 gallons per minute
- Hydraulic pressure required for maximum power: 2500 pounds per square inch

MODEL 9100 SPECIFICATIONS:

- The Model 9100 is the same machine as the Model 9000 except that it does not have the back brace cylinders.
- The back plate can be adjusted manually to suit the length of the rods being used or to fit the shoring box.

For Sales and Service, contact your local Poweram dealer:
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ACCESSORIES: See Poweram catalogue for more detailed information about accessories

- Safety Shoring Boxes
- Accessory Tote Boxes
- Portable Hydraulic Power Units
- Solid alloy steel push rods
- Push heads
- Expanders & Couplings for pulling up to 12" pipe
- Expanders & Couplings for pulling double 2", 3", 4", & 5" pipes
- Systems for pulling 3 or more pipes at once can be made to order.
- Electronic Locating equipment
- Pipe Splitting systems for up to 6" pipe
- Pipe Bursting systems for up to 12" pipe

Poweram Accessory Tote Boxes are designed to store and carry the push rods, push heads, expander cones, couplings, and other tools needed at the job site. They are heavy-duty steel boxes built to be lifted by overhead hoisting or by fork lift. The latches will accept a padlock.

To realize the productivity possible with the Model 9000, a good electronic locating system such as the Radiodetection Data Bore system is required. Poweram has sonde capsules and push heads available.

The alloy steel push/pull rods have threaded joints, and can be added and removed within the length of the machine. If space permits, the longer rods make a more efficient string (less expensive, stronger, and faster to add or remove rods from the string).

The Model 9000 will rotate the push rod string about 1/3 of a revolution for each foot of advancement. This improves accuracy when using a flat or stepped push head, and allows for the use of steering heads to correct and/or direct the push. The rotation device is easily disengaged to allow course corrections and for pull back.

The Model 9000 is limited to 2,500 p.s.i. working pressure. The control valve has a built in relief that is factory set to limit the pressure to 2,500 p.s.i.

An operator's manual is sent with each machine to help you use the equipment safely and productively, and to help you keep it in top working condition. It will help you get better acquainted with the Model 9000 and with the various techniques used to make efficient installations and/or replacements of underground utility lines.

POWER SOURCE:

The Model 2613 Portable Hydraulic Power Unit is designed to provide the right oil pressure and flow for the Model 9000. 25-foot long hydraulic hoses and couplers are included with the Power Unit.

If you wish, you may use your backhoe, trencher, or other hydraulic power source to run the Model 9000. 10 to 26 gal./min. and 2,500 p.s.i. are required for maximum performance. The Model 9000 is shipped with the control valve set up for an open center (or tandem center) system. A conversion plug is available to operate the machine with a closed center system. The control valve has a built-in relief valve to protect the Model 9000 from excessive pressures. A 10-micron filter is required in the power source circuit to protect the hydraulic components.

The hydraulic couplers on the machine are paired to prevent incorrect attachment of the hoses, so the couplers you install on your power source also must be paired so that the high pressure oil will be delivered to the inlet port of the control valve. The low-pressure oil should go through the filter as it returns to the tank. Two 3/4" hoses are required.

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OPERATION:

Your backhoe, boom truck or other lifting device will be needed to unload the machine and place it into the pit. The machine weighs 1,500 lbs.; the machine and shoring box together weigh 2,700 lbs.

The work trench required for the Model 9000 in the Model 9160 Shoring Box is 3'10" wide x 7'6" long (3' wide if the shoring box is not used).

Three types of push heads are available from our stock. The flat push head is most commonly used. It works well in most soils and is not easily deflected by small rocks or by sudden changes in soil conditions. The stepped push head is often used as an all-purpose head. It is easier to push than the flat head, and it works well in uniform soils, but it may be deflected more easily. The pointed push head works best in tightly compacted uniform soils and to pierce through a section that has stopped a flat push head. It is possible to penetrate shale, sandstone, and similar materials with the pointed or stepped heads.

The 5-foot long push rods are 5'2" long overall, so each rod adds 5 ft. to the length of the string.

The 4-foot long push rods are 4'0" long overall, so each rod adds 3.833 ft. to the rod string.

The 3-foot long push rods are 3'0" long overall, so each rod adds 2.833 ft. to the rod string.

The Jaw Stop Pins must be in the forward holes for pushing. They allow the jaws to grip the push rod on the forward stroke, but prevent them from gripping on the return stroke. Simply move the pins to the rear holes for pulling.

When the push head reaches the receiving trench, it is removed and the swivel connector or proper expander cone is attached to the required service line can be pulled in. To pull a large expander in very tough soil conditions, you may want to pull a small expander through first. A rod pulling adapter (p/n 382) can be attached to the smaller expander and rods added as it is pulled back to the machine. This technique saves time and keeps a rod string in the hole.

The swivel connector (p/n 316) is used to pull small diameter pipe and cable that do not require an expanded hole. A "Chinese finger" cable grip (see our p/n 357) is often used to attach these smaller pipes and cables to the swivel connector.

POWERAM expanders are about ½" larger than the standard pipe coupling they are designed to pull (e.g. the outside diameter of the 2" pipe expander is 3"). We stock expanders for 2", 3", 4", 5", 6", 8", 10", and 12" pipe, as well as for double 2", 3", 4", and 5" pipes. Couplings for pulling threaded and unthreaded pipe are stocked in most sizes. Other sizes, or expanders for pulling multiple pipes of different sizes, or couplers for welded steel pipe can be furnished to order.

The p/n 303 M-F Adapter coupling is required to attach the expanders to the solid push rods.

In normal soil, the Model 9000 will pull up to 8" pipe. 12" and larger pipes have been installed in suitable soils.

We can supply systems for keeping glued and/or rubber joints from coming apart during pullback.

Our catalog has photos and descriptions of all the tools referred to above, as well as other accessory items designed to help make your work more productive. We strive to keep every item in stock so that we can fill your order as quickly as possible.

POWERAM can furnish Radiodetection electronic locating equipment to trace the progress of a push and/or to help guide the push for greater accuracy. Several models are available, including systems for locating existing utilities and for directional pushing.