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INTRODUCTION

Many times, the most difficult step in pipe pulling is getting the pulling cable landed to the host pipe. Use of the ACME Suction Machine makes this step easy. However, safety needs to be the greatest consideration before and during the ACME Suction Machine operation. There are inherent risks to the ACME Suction Machine operation that must be addressed through safe work practices. These safe work practices start with every operator reading and understanding the operating instructions manual prior to using the ACME Suction Machine. This manual should be made available at the work site for as-needed review by the operators during use.

GENERAL SAFETY PRECAUTIONS

Wear PPE's

At all times when operating the ACME Suction Machine, wear the appropriate Personal Protective Equipment: Eye Protection, Hearing Protection, and Head Protection.



Protect your EYES during use



Protect your HEAD while using



Protect EARS from loud machine noise

EQUIPMENT SAFE MAINTENANCE AND OPERATION

Maintain the Machine	Maintain the ACME Suction Machine to prevent safety issues and mechanical breakdowns. Keep guards in place, follow the lubrication schedule, and replace worn components. Refer to the Owner's Manuals for the Manufacturers Guidelines.
Inspect the Machine	Inspect the ACME Suction Machine for damage prior to each use. If the ACME Suction Machine makes unusual sounds or behaves abnormally, stop using it and check for damage. Make corrective action before putting the machine back in service.

LANDING THE PULLING CABLE TO THE HOST PIPE

Many times, the most difficult step in pipe pulling is getting the pulling cable landed to the host pipe. We recommend the following processes to accomplish the required outcome.

1. First, try simply pushing in the MAX Pulling Cable. If it gets through, mission accomplished.
2. If that doesn't work, try pushing in a Fiberglass Duct Rodder. Once through, connect the Rodder to the 1/4" Leader Cable or to the MAX Pulling Cable and pull in the attached cable.
3. If that doesn't work, use the ACME Suction Machine.

BEFORE YOU USE THE ACME SUCTION MACHINE

Site Preparation	1. Follow federal, state, and local regulations for promoting safe road, sidewalk and excavation site conditions. 2. Dig to expose the host water line on both ends and prepare the access pit for the ACME Pipe Winch. There should be a flat, vertical wall surface for the ACME Pipe Winch to pull against with approximately 8" clearance from the host water line to the left, 8" to the right and 8" below so the winch and face plate can make solid contact to the access pit front vertical wall.
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ACME SUCTION MACHINE BASICS

This commercial grade vacuum pump is a smaller, portable version of the hydrovac truck, utilizing the same principal component - a positive displacement blower. The use of the ACME Suction Machine and the addition of a biodegradable vegetable oil or liquid soap in a multi-step process aids in the insertion of the pulling cable which is integral to your pipe pulling success. Safely produce high suction used to convey air, water, and lubricants with this compact, portable machine.

Use of the ACME Suction Machine to thread a leader cord through the lateral requires two crew members. One crew member will be in the basement, feeding the leader cord while the other crew member will be outside, applying the suction at the pipe end to draw the leader cord through the lateral. Use phones or a headset radio to communicate when to stop feeding the leader cord once it emerges from the pipe end.

USING THE ACME SUCTION MACHINE

1. Safely park the ACME Suction Machine on a flat surface, maintaining a minimum distance of 3' away from the excavation pit edge.
2. Expose and cut the host pipe on each end – distal and proximal.
3. Start the ACME Suction Machine and attach the suction hose to the host pipe in the access pit. While under suction, maintain control of the suction hose end to avoid vacuuming up loose soil and water. Do not let it come in contact with loose clothing or body parts.
4. From the distal end, feed in the pulling cord which has a dart (piece of plastic bag, ear plug, etc.) tied to the end. The high suction will pull the cord through the pipe.
5. From outside, check at the connection point of the suction hose to the host pipe in the access pit frequently to observe when the cord is through the length of the host pipe.
6. When you see the cord in the access pit, turn off the ACME Suction Machine.
7. At the distal end, tie the cord to the ACME Leader Cable.
8. In unison, one person pulls the cord from outside, while the person at the distal end pushes the Leader Cable in. Continue until the Leader Cable exits the host pipe in the access pit. Go easy when pulling the cord to not break it. Pull the Leader Cable until there is approximately 2' remaining inside, being close to the host pipe. Be careful to not pull the 1/4" cable into the host pipe.
9. Inside, connect the Leader Cable to the ACME MAX Pulling cable using 3 loops of 1/16" wire cable coupled with a press-fitted copper ferrule crimped in place.
10. Again, in unison, one person pulls the Leader Cable from outside, while the person at the distal end pushes the ACME MAX Pulling cable in. Continue until the ACME MAX Pulling Cable exits the host pipe in the access pit. Pull the ACME MAX Pulling Cable through until there is approximately 2' remaining at the distal end, being close to the host pipe. This allows for a comfortable workspace to make the connection of the new pipe to the ACME Splitter or Puller head tooling swivel.

IF NECESSARY, ADD A LUBRICANT TO THE HOST PIPE

If either the ACME Leader Cable, or the ACME MAX Pulling Cable is difficult to pull in, introduce a lubricant - VEGETABLE OIL or LIQUID SOAP into the pipe. (up to approximately a pint per 50' of pipe length).

1. Having re-attached the suction hose to the host pipe in the access pit, start the suction machine. From the distal end, add the lubricant. Stop adding the lubricant when it is detected at the access pit.
2. Once the lubricant has been successfully added, remove the suction hose and now continue with the previous step - landing either the Leader Cable or the ACME MAX Pulling Cable.
3. Once the ACME MAX Pulling Cable has been landed to the length of host pipe, separate the Leader Cable from the ACME MAX Pulling Cable by cutting the 1/16" joining cable.

The addition of the lubricant will allow the cable to glide in much easier.

Having successfully landed the ACME MAX Pulling Cable to the host pipe, and connected the new pipe at the distal end, lower the ACME Pipe Winch into the access pit. Connect the ACME MAX Pulling Cable to the winch drum and make the pull.