### Suction Pump Guideline

Configuring Water Systems for Year Round Water Supply with Heat-Line® Freeze Protection

**Available from Heat-Line**
- Freeze protection system for the water supply line: Heat-Line®, Retro-Line®, or CARAPACE®
- Water pipe: 1" or 1 ¼"/4" or 1 ½"
- Insulation
- Thermostat
- Submersible Pump Stand (PUMP-STAND)
- Armored cable for submersible pump, with quad break-out boot for underwater cables (TECK 90 12-3C WIRE)
- MilliAMP 10mA GFCI certified wall mount safety protection for pump (MA-10)
- Foot Valve Stand (FV-STAND)
- High quality Philmac Compression Pipe Fittings and Accessories

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**Color Codes:**
- **Non heated water pipe (1" or 1 ¼"):**
- **Heat-Line freeze protected water pipe:**
- **Heat-Line built-in safety:** GFCI device
- **Insulation:** ¾" thick wall, 3" dia. 6 ft. long:
- **Mechanical protection:** Big “O” Cover all pipe on land with insulation
- **Thermostat:** Wall mount
- **Thermostat probe (sensor):** Wire 19 ft., mount on the water pipe. Locate at the “coldest spot on the pipe”, as illustrated. Use when superior energy efficiency is desired – This will also improve life span of the product.

**Lift Distance from the winter water level (lowest) to location of pressure tank manifold.**
- Lift _____ ft.
- Non heated water pipe (1" or 1 ¼"): Length _____ ft.
- Insulation: ¾" thick wall, 3" dia. 6 ft. long: Length _____ ft. as required
- Mechanical protection: Big “O” Length _____ ft.
- Thermostat: Wall mount
- Thermostat probe (sensor): Wire 19 ft., mount on the water pipe.

**Tip. Coldest location.** Insulate pipe and cover with Big “O” for mechanical protection especially when pipe is exposed to air and laid over rocks. Locate the thermostat probe on the water pipe, under the insulation.

**Tip. Insulate and mechanically protect the transition zone between land and water.** Do not insulate into deep water (just to the low water mark).

**Tip. Locate end of Heat-Line system in minimum 5 feet of water or at least 2 feet below the known ice level at low water mark or minimum lake level.**

**Note:** Some lake levels severely drop in fall or winter.

**Tip. Foot valve recommended minimum distance, at least 30 feet from shore and in a minimum of 10 feet of water or near fresh water spring. These distances may vary with each situation.**

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**SAFETY / ELECTRICAL INSPECTION**

All submersible pumps should be wired by licensed electricians. Check your local building, plumbing and electrical codes before installing. You must comply with their rules.

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