ASB Heating Elements Ltd.
20 Bethridge Rd. Toronto ON M9W 1N1
Ph: (416) 743-9977 1-800-265-9699 Fax: (416) 743-9424
Web site: www.asbheat.com

**IN001-SP**

# Screw Plug Immersion Heaters for Liquids and Gases

You have selected an immersion heater made with high quality materials and expert workmanship. Properly installed and maintained this heater will give you many years of trouble free service.

**Installation:**

1. This heater must be installed by qualified personnel, to all local and national codes and standards.
2. Only connect this heater to the voltages stamped in the nameplate.
3. Built in thermostat may be directly connected to the heater load, or wired as a pilot duty device. Refer to opposite side of this page.
4. Heater mounting must include adequate space for thermal expansion.
5. Elements are not field bendable.
6. Heaters in Liquids must be fully immersed when energized.
7. Mount heater above any anticipated sludge level. Sludge build up on the elements sheath will damage the heater.
8. Heaters in a Gas must have adequate gas flow over the heater when energized.
9. All sealing surfaces must be clean and free of burrs and/or surface irregularities that may prevent a proper seal.
10. Outdoor or wet location heaters should be a moisture resistant design and have the suffix “MR” added to the catalogue number. (Class 4, NEMA 4)

**Operation:**

i. Care must be taken to ensure complete immersion of the heated surface area for liquid heaters and proper gas flow across the heater is present before heater is energized.
ii. Do not operate the heater under conditions that cause the heater sheath from exceeding the maximum recommended sheath temperature shown on Table 1.
iii. Check recommended sheath material shown in Table 1 and make sure your heater has been properly selected.
iv. The standard terminal box is General Purpose (NEMA 1). Do not operate the heater in environments that can cause electrical insulation breakdown. Special terminal enclosure consideration required for these environments:
    a. Oil, oil vapors or grease
    b. Reactive or noxious gases
    c. Water or water vapors
    d. Corrosive vapors or gases
v. These contaminants can create electrical leakages causing an electrical shock hazard, heater damage, and/or premature heater failure. For protection in these environments, your heater should be equipped with a moisture resistant terminal enclosure (Class 4 Enclosure, NEMA 4). Heaters with this terminal box type has the suffix “MR” in the catalogue number

**Maintenance**:

1. Periodically check and tighten all electrical connections
2. Inspect inside terminal enclosure for contamination that may have entered the terminal box.
3. Some solutions create scale and/or sludge build-up on the heater sheath. If your system has this potential you will have to frequently inspect the heater for scale and/or sludge build-up and clean as required. After a few inspections you can determine the best maintenance cycle for your application.

Table 1

| Sheath Material | Normally Used to Heat | Maximum Allowable Sheath Temperature |
|---|---|---|
| Copper | potable water | 180°C (360°F) |
| Steel | oil | 400°C (900°F) |
| Stainless Steel | food processing, de-ionized water, some mild acids | 650°C (1200°F) |
| Incoloy | water, oil, alkaline air | 760°C (1400°F) |
| Inconel | strong alkaline, very high temperature (1401°F to1500°F) | 815°C (1500°F) |

Table 2

| System Operating Temperature | Recommended Wire Temperature |
|---|---|
| 160°C | 90°C |
| 215°C | 105°C |
| 280°C | 125°C |
| Over 280°C | 200°C |