

HEATEC TEC-NOTE

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Thermal fluid—prolonging its life

If you are using a thermal fluid heating system you can prolong the life of its thermal fluid by using nitrogen to minimize oxidation.

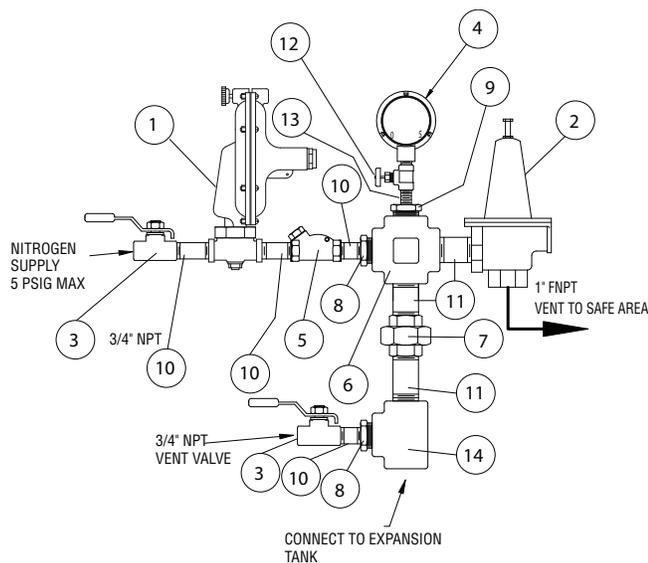
Oxidation occurs when heated thermal fluid contacts air in the expansion tank of your heater. Oxidation causes rapid deterioration of thermal fluid heated to over 300 degrees F as required in many applications. Oxidation also produces sludge. Sludge can build up in your system, reducing heating performance and leading to costly cleanouts.

You can greatly minimize oxidation by replacing the air in the expansion tank with a “blanket” of nitrogen. To do so, you need to connect a regulated

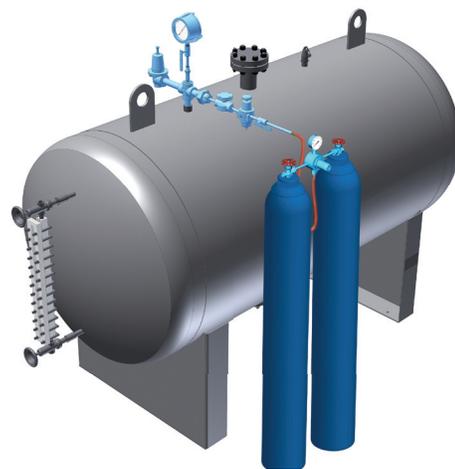
supply of nitrogen to a vented line in the expansion tank. The nitrogen supply should not exceed pressures higher than specified for the tank:

- On HC and HCS heaters, set the regulated nitrogen supply at 1 psi and set back-pressure relief valve at 2 psi. Also use these settings on HCI heaters that have low pressure (non-code) expansion tanks.
- On HCI heaters with ASME code tanks stamped for 50 psi @ -20 to +650 degrees F, set the regulated supply to 20 psi and the relief valve to 30 psi. For code tanks with other ratings, set the pressures as indicated on the applicable P&ID drawing.

Heatec offers a preassembled nitrogen system for maintaining a nitrogen blanket at appropriate pressure. The system includes the components illustrated at left. It is designed to accept a regulated nitrogen bottle supplied by the customer.



1	Secondary nitrogen pressure regulator	8	Bushing
2	Back pressure relief valve	9	Bushing
3	Ball valve	10	Pipe nipple
4	Pressure gauge	11	Pipe nipple
5	Check valve	12	Gauge valve
6	1" cross	13	Pipe nipple
7	1" union	14	1" Tee



Pre-assembled nitrogen system installed on expansion tank. Note that the nitrogen bottles have their own pressure regulator, in addition to the secondary pressure regulator on the nitrogen blanket system. These regulators are among several safeguards to ensure that pressure in the expansion tank never exceeds recommended settings.