

HEATEC TEC-NOTE

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Thermal fluid—prolonging its life

Do you use a hot oil (thermal fluid) heater to heat asphalt at your HMA plant or asphalt terminal? If so, 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 heating asphalt. Oxidation also produces sludge. Sludge can build up in your system, reducing heating performance and leading to costly cleanouts.

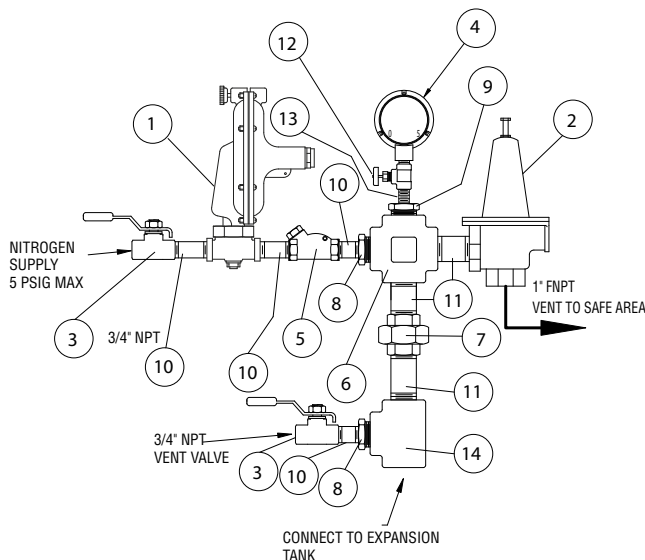
You can greatly minimize oxidation by replacing the air in the expansion tank with a “blanket” of

nitrogen. To do so, you need to connect a regulated supply of nitrogen to a vented line in the expansion tank. The nitrogen supply must never exceed 5 psi. Pressures higher than 5 psi can cause your expansion tank to rupture or explode.

To keep pressure in the expansion tank within safe levels, do the following:

- Regulate nitrogen supply at 1 psi.
- Set back-pressure relief valve at 2 psi.

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.



Preassembled nitrogen system installed on a Heatec TriTec heater. Note that the nitrogen bottle has its 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 5 psi.

1	Secondary nitrogen pressure regulator	8	Bushing
2	Back pressure relief valve	9	Bushing
3	Ball valve	10	Pipe nipple
4	Pressure gauge, 0-5 PSIG	11	Pipe nipple
5	Check valve	12	Gauge valve
6	1" cross	13	Pipe nipple
7	1" union	14	1" Tee