Solar Circulator Failure and Replacement

All systems need maintenance to function at their peak efficiency and to work successfully for their entire service life. An additional issue to consider is how often systems will be left inactive. When mechanical systems are idle for long periods, seals can fail, valves and moving parts can get sticky, and fluids can start to change their composition.

This particular circulator was used in a glycol filled solar hot water system. Because the house was used infrequently in the winter, the domestic hot water load was low so the solar system heated up the storage tank and then shut off. Because the stand-by loss of the storage tank was very low, the solar circulator was off for a fairly long period of time. Eventually, the check valves that prevented unwanted flow in the wrong direction stuck closed and the circulator failed due to overheating (all water-cooled circulators of this type require active water flow to stay cool). This was demonstrated by the melted area where the impeller of the circulator was connected to the shaft.

This failure illustrates how equipment and system selection must be based on the intended load, the intended occupancy, and the desired service life.

Our goal is to be **Martha's Vineyard's premier plumbing and HVAC shop –** we appreciate the opportunity to service and upgrade your solar hot water system.