

Tiny Bubbles Keep Small Ponds Alive

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SMALL PONDS in the middle of a golf course can be great assets in both playing strategy and cosmetic appeal. They can also be stagnant, smelly eyesores unless wave action, stream flow, or some other process provides for oxygenation of the water. The normal biological cycle includes the decomposition of water plants, which creates a biochemical oxygen demand and can, if not met, cause a sort of aquatic black layer, in which the water has an inadequate supply of dissolved oxygen. This is usually accompanied by a fish kill.

Several electrically powered aeration devices accomplish oxygenation quite well. Some aerate the water by spraying it into the air, while others achieve the same goal by injecting air from the surface into the water. These operations

require that electricity be brought to the pond.

At the Saginaw Country Club, in Michigan, that was more easily said than done. In the first place, the pond was some 500 yards from the nearest power line, thus creating a high cost: benefit ratio. In the second place, the necessity for permits and the other red tape required to pull underground electric cable through the golf course became overbearing. These roadblocks do not apply to an empty plastic tube, however, so superintendent Jerry Faubel and his staff simply pulled in a pipe and pumped air from the power source at the edge of the property to the pond. The heart of the system is a Gast centrifugal air compressor, which provides a low-pressure, high-volume air supply.

The unit is located below the ground level, and is serviced through a conventional, covered manhole setup — an essentially noiseless operation. The compressor supplies air at 70 to 140 cfm, operating at 9-12 psi. The 30-pound unit is powered by a ¼ hp 110 v electric motor that requires 15 amps to start and 5.4 amps to run. The air supply is piped through one-inch diameter flexible plastic pipe to three porous ceramic diffusers resting at the bottom of the pond.

The results have been excellent, even during the prolonged period of hot, dry weather last summer. Given the impetus of necessity, golf course superintendents are retaining their inventive qualities where even the most modern equipment falls victim to bureaucratic hindrance.





(Opposite page) It's not spectacular, but the air, bubbled into the water through three diffuser units, maintains an adequate supply of dissolved oxygen in this small pond. The nearest power source is 500 yards beyond the willows.

(Top) Three ceramic diffusers like this provide the tiny air bubbles to meet the biochemical oxygen demand of the water.

(Left) Superintendent Jerry Faubel and the air intake, manhole, and power supply for aerating the pond 500 yards away.

(Above) This small centrifugal compressor supplies the air for oxygenation.