

# TOUGH JOBS

A **GROSCHOPP**® CASE STUDY

## + Water Treatment Pump

Motors used in peristaltic pumps—to treat drinking water with chlorine in water treatment plants—must be able to operate under varying water pressures and in an environment with chemical exposures. For this application, Groschopp designed a compact BLDC motor with a chrome-plated shaft to prevent corrosion. The shaft was also hardened through a heat-treatment process so it could withstand the stress.

BLDC motors are programmable and able to adjust speed rapidly to regulate flow. The motor underwent two years of extensive testing and proved reliable under these conditions.

### CHALLENGES:

- ⊕ Small size requirement
- ⊗ High torque
- ⊕ Must be programmable to adjust speed rapidly
- ⊗ Chemical exposure makes shaft wear problematic
- ⊕ Extremely tight shaft tolerances (must mate with cam mechanism in the pump)

### SOLUTION:

- ⊕ BLDC motor provides high torque in a small package size
- ⊗ Custom shaft with chrome plating to prevent corrosion
- ⊕ Heat-treated shaft to withstand stress
- ⊗ Two years of extensive testing

