Energy Efficiency in High Pressure Coolant Delivery

Although positive displacement pumps are unquestionably more energy efficient than multistage centrifugal pumps, not all positive displacement pumps are equal in that respect.

Hydra-Cell hydraulically balanced, multi-diaphragm pumps have exceptionally high energy efficiency that is unaffected by pressure or the viscosity of the liquid being pumped.

Screw pumps and gear pumps have internal leak paths that reduce their energy efficiency substantially as the pressure increases and as internal wear occurs. They are far less efficient when pumping water mix fluids than they are when pumping neat oils as they rely on the higher viscosity of neat oil for internal sealing purposes.
High pressure cooling is usually carried out with watermix coolants, making Hydra-Cell pumps the obvious choice.

Independent tests have shown Hydra-Cell to be up to 25% more energy efficient when compared to screw pumps pumping oil emulsions across a wide range of pressures and flow rates and up to 78% more energy efficient than multistage centrifugal pumps pumping emulsion coolant 10 lpm at 40 bar pressure.

Further information from:

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Note:
Wanner is the world's leading manufacturer of seal-less, high-pressure, diaphragm pumps. These Hydra-Cell pumps are highly efficient, heavy duty pumps used for liquid transfer, metering, injection, spraying and dosing