ith the installation of the world's largest commercial hydrogen vehicle fueling station came a unique set of speci cations required to provide the high pressure ow of liquid hydrogen from its large storage tanks to its vaporizers. ACD's SGV Series complies with all speci cations and allows additional growth options for the customer.

Commissioned in Whistler, BC, Canada, the station was designed and built by Air Liquide Canada to fuel a eet of twenty local transit buses. Engineering a station in which operators could ll a hydrogen fuel-cell bus in the same amount of time as a diesel bus was crucial to the promotion of low emission transportation initiatives. The station's design allowed one transit bus (46 kgs) to be fueled in less than ten minutes and the entire eet within three hours. Hydrogen needed to be transferred safely at 350 bars (5,076 psi) and be available for fueling 99.9% of the time.

To meet the customer's speci cations, ACD manufactured a system of three SGV reciprocating pumps to transfer hydrogen from the station's storage tanks to its vaporizers prior to fueling. Designed as a continuous duty system, each of the three single-cylinder SGV pumps were equipped with a belt-driven, 55.9 kW (75 hp), 3-phase TEFC electric motor to achieve a pump speed of 538 rpm and a ow of 20 lpm (5.28 gpm) at a maximum working pressure of 414 bar (6,000 psi) (Figure 1).

(Figure 2). Special considerars anfage.

Included in the ACD scope of supply were vacuum jacketed suction adapters with internal strainers and super-insulated cold ends to ensure minimal cool-down losses for the pumps. A pressurized, oil-lubricated drive with an integral oil pump and reservoir allows high bearing loads and prevents oil leakage.