

## Spotlight on the Canadian Oil Patch – Methanol Injection

### Methanol Injection Packages Prevent Hydrate Formation in Pipelines and Wellheads

Gas hydrates are formed in the presence of moisture, low temperatures and high pressures. These crystalline compounds when created freeze into an “ice hydrate” which can damage equipment and plug pipelines.

Methanol is injected into the wellheads and pipelines of natural gas systems to prevent hydrate formation and prevent corrosion. The addition of methanol lowers the freezing point at which the hydrates are produced. Hydrate inhibition is typically required:

- On long flowlines in cold or arctic climates, where hydrates may form under normal operating conditions and require continuous methanol injection.
- At the wellhead surface, intermittently, during start-up and shutdown.
- At the wellhead subsurface during start-up and shutdown, using an initial charge of methanol per well.



Hayward Gordon supplies API 674 & API 675 pumps on our methanol injection packages in a variety of configurations that provide up to 17,500 psi with flow rates up to 100 GPM for inhibiting hydrate formation in the pipelines and wellheads of gas and natural gas liquids. These packages can be built to fit customer requirements such as the well-pad footprint.

Available configurations include LEWA brand methanol injection packages (see inset pictures) with manual or automated stroke length control, speed control, and fixed volume delivery, with continuous or intermittent injection for gas. Features include hermetically-tight, sealless diaphragm pumps to isolate the process fluid from the hydraulic system, leak-tight pumps with two PTFE diaphragms that are sandwiched and operate in balance to provide double containment with zero-leakage, run-dry tolerance, and overload protection.

Hayward Gordon’s pumping solutions fulfill the tough demands of the oil and gas industry, and have done so for decades. For more detailed information please give us a call.



*Skid construction can be designed to CSA, ASME B31.1/B31.3, API & ABSA codes and requirements.*

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# ENGINEERED SYSTEMS AND CONTROLS

ENGINEERED SYSTEMS	DESCRIPTION	FEATURES
<b>Custom Pump &amp; Process Packages</b> 	<p>Your single-source for the design and manufacture of custom engineered pumping systems. Based on process and application specifications, we will produce P&amp;ID's and design the system with necessary pumps, piping, controls and instrumentation. You will receive a skidded, tested and fully functional system complete with documentation that is tailored to your specific requirements.</p>	<ul style="list-style-type: none"> <li>• Optimal pump type selected for each application</li> <li>• Certified TSSA piping systems welded to ASME B31.1 and B31.3</li> <li>• CSA approved control panels</li> <li>• Optional PLC's and operator interfaces</li> <li>• Optional CRN registration of components</li> </ul>
<b>Tank &amp; Mixer Packages</b> 	<p>Hayward Gordon saves you time and money by integrating our in-house mixing expertise into complete turn-key packages that include Hayward Gordon mixers, tanks and various accessories designed to your specifications.</p>	<ul style="list-style-type: none"> <li>• Range of tank materials includes stainless steel, fiberglass, HDPE, steel, and rubber lined steel</li> <li>• Bridge supports</li> <li>• Level controls</li> </ul>
<b>Metering / Chemical Injection Systems</b> 	<p>Our custom engineered metering and chemical injection systems include pumps, components, controls, and instrumentation selected to suit the application and customer specifications.</p> <p>Typical applications include Alum, Chlorine, Hydrogen Peroxide, Ferric Chloride, Boiler and Cooling Water Additives, Polymers, Acids, Chelants, Phosphates, Dyes, Pigments, Starches, Coatings, and many other additives.</p>	<ul style="list-style-type: none"> <li>• Wide range of metering pumps including API 674 and 675</li> <li>• Piping and frames available in 316SS, steel, or PVC</li> <li>• Certified TSSA piping systems welded to ASME B31.1 and B31.3</li> <li>• CSA approved control panels</li> <li>• Optional PLC's and operator interfaces</li> </ul>
<b>Slurry Makedown &amp; Mineral Dispersion Systems</b> 	<p>Complete packaged systems for effective slurry makedown of bulk solids and difficult to wet materials.</p> <p>Typical applications include lime, gypsum, starch, talc, bentonite clay, calcined clay, and soda ash.</p>	<ul style="list-style-type: none"> <li>• Systems typically include; semi- bulk bag unloading station, overhead hoist, feed hopper with access hatch, dust seal, level monitoring, pneumatic vibrator, volumetric feeder with variable speed control, and mixing tank</li> <li>• Allen Bradley PLC and operator interface for automatic control and monitoring</li> </ul>
<b>Dry Polymer Systems</b> 	<p>The innovative <b>ChemVac™</b> dry polymer makedown system, features a unique "high performance / high pressure" nozzle, providing one of the most efficient wetting systems available. Allen Bradley PLC and operator interface used to provide automatic control and monitoring.</p>	<ul style="list-style-type: none"> <li>• Feed rates to 1,000 kg/day &gt; 1% concentrations Eliminate "fish-eyes"</li> <li>• Dust-free wetting</li> <li>• Stainless steel construction</li> <li>• CSA control panels</li> </ul>
<b>Liquid Polymer Systems</b> 	<p>The <b>Activator™</b> series of liquid polymer systems provide fast and complete inversion of polymer. Allen Bradley PLC and operator interface used to provide automatic control and monitoring.</p>	<ul style="list-style-type: none"> <li>• Dilution flows from 5 gpm to over 100 gpm</li> <li>• Unique "Smart-Mixer" and post dilution mixing</li> <li>• Stainless steel construction</li> <li>• CSA control panels</li> </ul>

Start-up service available on all systems



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