



Clearing Regulatory Hurdles in an Evolving Market

ExtractionTek Stainless Innovates and Expands
in the Cannabis Industry with LJ Star's Expertise

CASE STUDY



Any emerging industry will experience its share of growing pains, and the cannabis market is no exception. Cannabidiol (CBD) production and sales are exploding, with various research groups projecting a **CAGR of 20-30%** for this product category during the next several years.

However, governmental approvals and regulatory issues are still being hammered out. They vary from one country to another and even from state to state. It takes a seasoned manufacturer to navigate the resulting “Wild West” patchwork of regulatory confusion for a successful market entry, which is how ExtractionTek Stainless found LJ Star. ExtractionTek, the acknowledged market leader for closed loop hydrocarbon extractors, saw an opportunity to enter the Canadian CBD processing market. However, it needed a supplier that would ensure its parts met stringent compliance guidelines.



Extraction Stage Critical to CBD Processing

Extraction removes and concentrates the most valuable and beneficial organic compounds from the hemp plant, such as cannabinoids, terpenes, and flavonoids. This process allows for higher purity, more accurate dosing, and stronger and longer-lasting concentrates for use as ingredients in products ranging from therapeutic to recreational.

ExtractionTek Stainless was founded in Colorado in 2011 to meet the demand for safe, efficient, and quality-manufactured extraction machines suitable for butane and propane solvents. Each unit is manufactured with U.S. steel, is ASME compliant and meets 3-A SSI Sanitary Standards, recognized by USDA and FDA.

The Search For A Secure Sanitary Clamp

LJ Star has secured its reputation as a provider of reliable sight glass, offering the highest rated safety glass in the market. However, ExtractionTek initially reached out to LJ Star during its search for an ASME approved sanitary clamp with a high-pressure rating.

LJ Star manufactures sanitary clamps that could handle the biggest risk factors related to the extraction process, such as high pressure and thermal cycling. Properly engineered sanitary clamps provide a vital safety feature in a process that combines high pressure with flammable liquids and gases. In addition, as part of the design features, ExtractionTek also wanted these clamps to enable the vessels and associated connectors to be cleaned easily.

Once ExtractionTek evaluated the LJ Star product line, the company decided to add a sight glass window to its extraction vessels, allowing for process observation without interruption. Operators could evaluate the fill level within the vessel and assess the color and clarity of the liquid.

Overall, the sight glass allows for quality control in real time. This real-time observation via a secure sight glass enables:

- 1. High quality products with full certification and traceability***
- 2. Flexible delivery options and a high rate of on-time delivery***
- 3. Excellent and reliable customer service/account management***
- 4. Reliable engineering and technical support for all products***



The Journey to Obtain Proper Certification in Canada

ExtractionTek was approached by a Canadian firm that wanted to use its equipment for CBD extraction. However, the country strictly regulates pressure retaining products and systems. Any high-pressure system operating at greater than 15 PSI must obtain a Canadian Registration Number (CRN) for legal installation and operation. This includes equipment used for cannabis extraction and processing.

The review process is rigorous and detailed. First, CRN requirements demand a 10X safety factor. For example, on a machine that generates 350 PSI, the equipment and fittings need to be able to withstand 3500 PSI to meet these standards.

Secondly, while on occasion the entire system is reviewed as a whole, at other times, these regulations often apply to individual parts and components. In this case, the clamps for the observation window had to withstand an independent review. Unlike its competitors, LJ Star had the CRN clearance, saving time and effort to help streamline the process for ExtractionTek to enter the competitive Canadian CBD processing market.

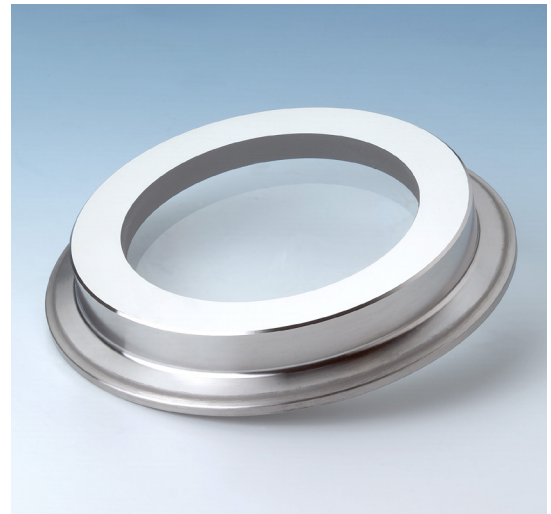
Despite this head start, the process still required between six to nine months of extensive and detailed paperwork and processing to obtain the final certification.

LJ Star Safety Glass and Sanitary Clamp Features

“We didn’t just find a valued supplier willing to endure this rigorous process of approvals, but also happened to find the company with the highest safety ranking,” said Jennifer Abbie, ExtractionTek Stainless Chief Operations and Financial Officer. “In an industry with such volatile components under high temperature and pressure, this adds an extra layer of security.”

LJ Star offers METAGLAS windows available in a sanitary clamp design, or MetaClamp® Sanitary Sight Glass Windows for use as sight ports and light ports or as inline sight flow indicators. LJ Star recommends Type 61 threaded METAGLAS® mechanically prestressed sight glass windows for observation in extraction equipment for the CBD industry or similar applications.

METAGLAS is made by melting borosilicate glass inside a metal frame, which results in the fusion of glass and metal. Upon cooling, the glass solidifies and the difference in the linear coefficient of thermal expansion between glass and metal produces forces that create a uniform compressive stress throughout the glass. This high degree of mechanically induced compressive stress makes METAGLAS the strongest and most secure sight glass for sight window or visual flow indicator applications.



LJ Star’s ASME Section VIII rated Sanitary Clamp adheres to the highest engineering standards, to ensure uniform clamping compression for an observation window installed in a high-pressure system. The clamp is cast from 316 stainless steel. It features a heavy-duty three-bolt and hinge design for safe operating systems, while allowing quick access to joints for cleaning and/or inspection.

A Project Forged Under Pressure, Yielding Success

ExtractionTek was approved for its extraction processing system in each Canadian province, thanks to obtaining the CRN. This helps the company stay one step ahead of the competition when entering new markets. As states legalize CBD processing, ExtractionTek can demonstrate that its systems adhere to regulatory standards that are far more rigorous than any state has so far mandated for quality engineering and safety.

ExtractionTek just celebrated its tenth year of operations and has experienced “tremendous” year-over-year growth. As new challenges emerge, such as the supply chain issues plaguing every industry, LJ Star continues to prove its worth as a quality and reliable supplier.

“LJ Star works with us in strategic and proactive ways, as opposed to being strictly transactional. Currently, they are focused on increasing stock levels to shorten long lead times for components. We appreciate their honest and open communication and elevated level of customer service as they work with us to overcome supply challenges. And we look forward to continuing with LJ Star as we grow,” said Abbie.

About LJ Star

OLJ Star Incorporated provides an extensive line of process observation equipment—sight glasses, lights, sanitary fittings, and level gauge instrumentation. Product lines include METAGLAS® Safety Windows, Lumiglas® Explosion Proof Lights and Cameras, the MetaClamp® Sanitary Sight Window, Visual Flow Indicators, Sight Ports, Sanitary Clamps, Magnetic Level Gages and Gage Glass. METAGLAS® is the #1 selling fused sight glass, proved in thousands of installations around the world. Unlike some other gauge glasses, it meets stringent DIN 7079 and DIN 7080 quality standards, and it is approved for USP Type 1 use. For additional information, visit www.ljstar.com.

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