

# Customized regulator for extraction of plant oils improves process control, yields, and uptime

## RESULTS

- Emerson worked closely with an OEM to deliver a high-performance solution using a TESCOM™ 26-1700 regulator to meet customer requirements where other regulators had fallen short
- Emerson customized the standard TESCOM regulator design to enable in-panel maintenance and provide an OEM-branded look
- The TESCOM customized 26-1700 regulator design delivers superior pressure control, helping the OEM's extractors attain higher product yields and throughputs with lower operating costs



## APPLICATION

Extraction of medical-grade cannabinoids using a supercritical CO2 process. Valued for its low toxicity and environmental impact, Supercritical CO2 is a 'tunable' organic solvent that requires superior pressure control for optimized extract purity & yields.

## CUSTOMER

OEM manufacturer of supercritical CO2 extraction process equipment.

## CHALLENGE

Amid intense competition in the growing medical and recreational cannabis market, OEM producers of supercritical CO2 extraction machines must ensure end-customers achieve maximized yields of cannabinoid extracts. Superior pressure control is essential to performance, since extractors pump high-flow, high-pressure CO2 through finely ground cannabis, using the CO2 as an organic solvent to dissolve the desired cannabinoid oils.

A cannabinoid extraction OEM sought an Emerson solution after previous regulators failed to maintain adequate pressure control, resulting in reduced extract quality and lower yields. Additionally, the OEM requested a customized, panel-mount design with a color-matched handle. The new design with a lower bonnet torque would simplify field maintenance by enabling regulator repair without the need for removal from the machine panel. This helps end users maximize uptime and production as they expand their operations to fill demand.

*“A new extraction OEM was seeking improved pressure control to boost yields & efficiencies. The OEM required a back-pressure regulator with superior control, simplified field maintenance options, and color-matching aesthetics.”*

### SOLUTION

The Emerson team developed a modified version of its standard TESCO M 26-1700 back-pressure regulator specifically for this OEM application. Custom features included a new hand knob to match the equipment as well as a reduced bonnet assembly torque, making it possible to service a regulator while it remains mounted in the machine panel. The final result was a customized OEM regulator, whose superior control capability delivered optimized cannabinoid extract yields and quality, improved equipment uptime, and reduced operating costs.

### SUMMARY

By rapidly mobilizing the expertise of its global engineering staff and using the breadth of its TESCO M product line, Emerson worked with the OEM to identify an ideal high-performance TESCO M Regulator and customized it to produce a unique solution with improved reliability, increased yield, and higher extract quality. Emerson engineered solutions help sustain the output and reliability of countless OEM machines and products across the world.



*The TESCO M 26-1700 back-pressure regulator.*