Low Shear Polymer Injection Control Module (TRGV-EPII)

Modular Array of Multiple Tandem Regulators for Polymer Injection Control in Selective Strings with Mandrels Featuring Dual Regulation Sections to Minimize Damage and Extend Range

The TRGV-EPII regulating valve for polymer injection control retains the tandem regulation system of previous models but incorporates several enhancements that result in reduced polymer damage and a broader operational range.

The device operates through multiple controlled pressure drops across geometric elements, providing stabilization, optimization, and higher efficiency in polymer injection.

It is recommended to pair the valve with special-design pocket mandrels.

The device integrates two control stages:

A first stage for gradual conditioning.

A second stage for precise control.

It also features improvements in the main polymer intake body and the outlet stage, further minimizing polymer degradation.

The standard control module contains 19 geometric elements and allows regulation of up to 1800 psi differential pressure.

Each geometric element is symmetrical and includes a tapered nozzle and expansion chamber to minimize polymer shear.

The assembly is inserted into a stem or container located in the intermediate section of the valve, which is deployed into each mandrel using wireline.

This configuration enables efficient and cost-effective adjustment of each zone.

The system includes design and planning curves that allow estimation of expected polymer damage based on flow rate and pressure differential.

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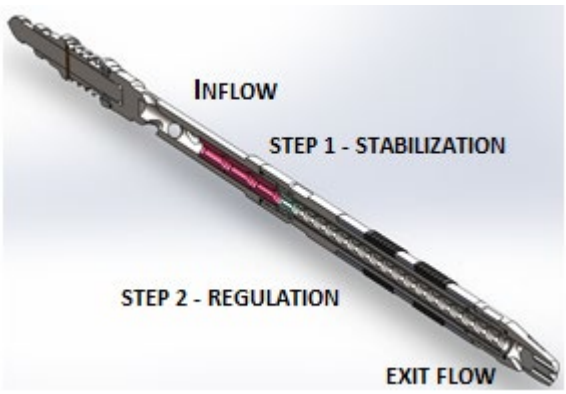

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Applications

- Control and regulation of polymer injection in mature fields with multiple sands or reservoirs using selective completion (mandrels).
- Stabilization of injection in each well zone while minimizing polymer damage.
- Prediction and control of mechanical polymer degradation through the mandrel-valve system.
- Reducer selection for the required injection rate according to pressure differential and maximum allowable polymer damage per zone, using tables derived from laboratory tests and modeling that cover most field conditions.

Advantages and Benefits

- Enhanced efficiency and injection stability, achieving maximum stable volume per zone, resulting in long-term production improvement.
- Stable injection process and controlled polymer damage for each well.
- Stainless-steel construction ensures durability in harsh conditions, optimizing service-related costs.
- Modular design enables upgrading, optimization, and replacement of modules according to field requirements.
- Simple system, easy regulator selection, and straightforward field installation.

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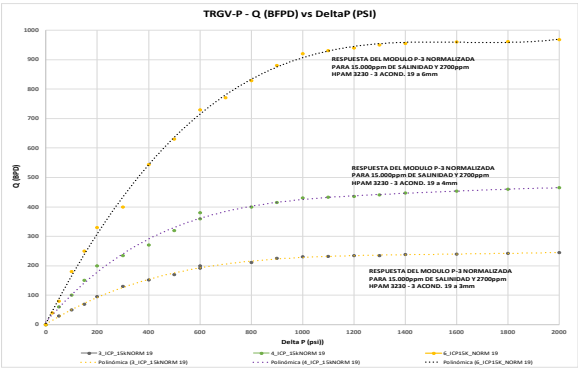
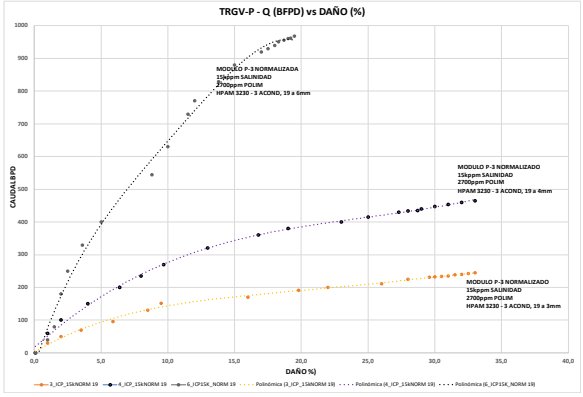
Technical Specifications and Selection





Especificaciones Técnicas Generales	
Parámetro	**Especificaciones y comentarios**
Diámetro Valvula	1.5in valvula OD para mandriles 1.5in
Material	SST ANSI 316 / 304
Máxima Temperatura de Operación Recomendada	350dF - VITON / 250dF NITRILO-KEVLAR
Maxima Presion Diferencial de Operación Recomendada	2000psi para modulo polimeros por zona
Maximo Caudal de Operación Recomendado	1000 BWPD para modulo de polimeros por zona
Maximo Rango de Presión Hidrostatica Recomendada	0 psi hasta 15.000 psi
Desgaste Maximo	1% por 10.000 horas a 1000 BWPD
Sellos	Sellos V-Pack en material Nitrilo o Viton con Kevlar Inyectado, arreglo de 6/6 pcs. permite controlar 2000psi Presion Diferencial
Maxima Tension para pesca Recomendada	30.000 lbf
Seguridad	Intrinsicamente Segura