

eICV – Electric Inflow Control Valve

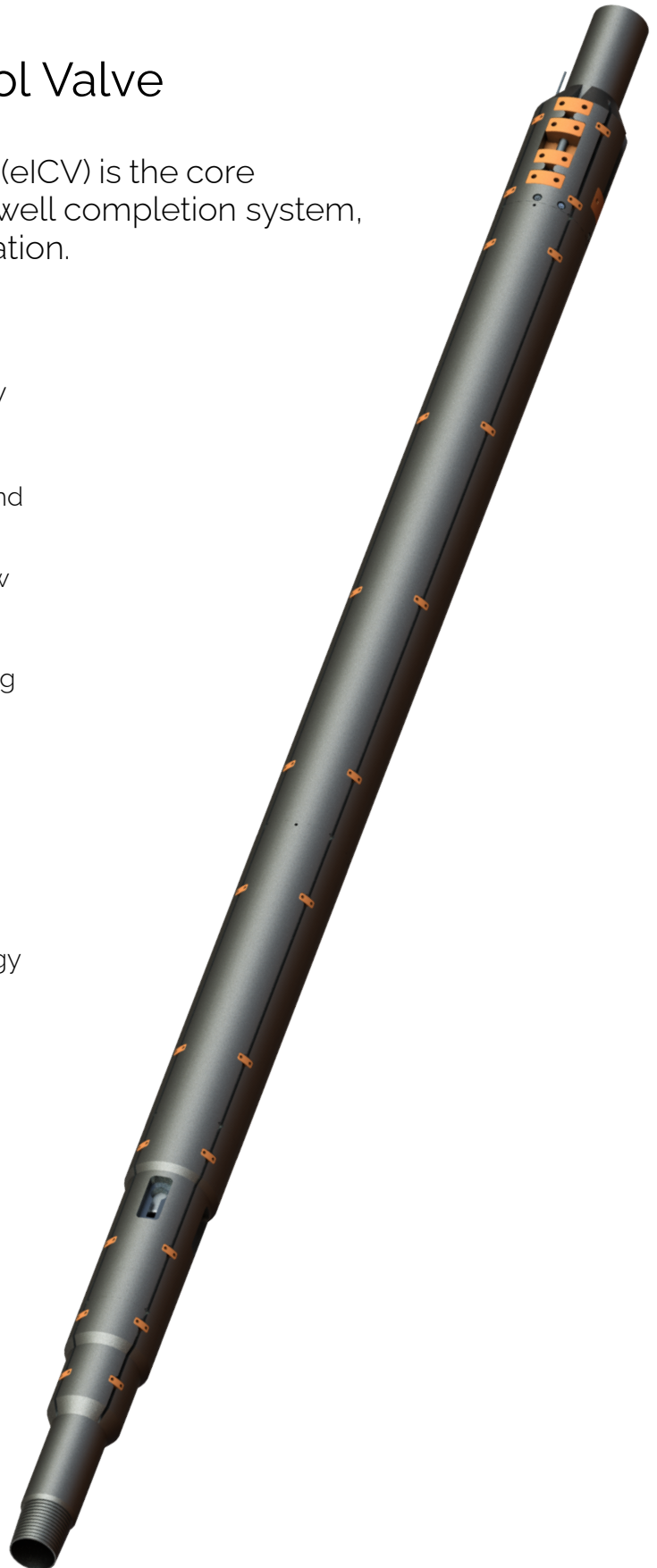
ouronova's Electric Inflow Control Valve (eICV) is the core component of the all electric intelligent well completion system, that enables greater production optimization.

With an innovative actuation mechanism that integrates the flow control and well monitoring systems in one single equipment, **ouronova's** eICV provides a highly reliable solution for harsh operating conditions: in deepwater wells up to 3,000 meters, under pressures up to 16.500 psi and temperatures up to 150° C.

The infinitely variable choke and sophisticated flow production profile allows optimal production and injection control in multiple zones in the reservoir, thus increasing the oil recovery factor and reducing operational costs.

Using a simple and reliable actuation system, the eICV has a high tech motor coupled to a transmission mechanism, where the entire torque generated by the electromagnetic field is transmitted in axial force to the sliding sleeve. Benefitting from optimum electromechanical efficiency, the entire valve operation has low energy consumption.

With full integration of pressure and temperature monitoring and flow control production, the all-electric completion system becomes more compact and robust, increasing system reliability and facilitating installation operations.



Intelligent well completions

eICV – Electric Inflow Control Valve

SPECIFICATIONS

| | |
|--------------------------------|---|
| Temperature range | 10° C – 150° C |
| Maximum differential pressure | 7,500 psi |
| Maximum absolute pressure | 16,500 psi |
| Hidrostatic pressure | 10,000 psi |
| Maximum unloading pressure | 1,500 psi |
| Valve size | 4 ½" |
| Maximum OD | 8 ¾" |
| Minimum ID | 3 ¾" |
| Total valve length | 16 ft |
| Connections | 4 ½" – 13.5# VAM Top Box X Pin |
| Number of choke positions | Infinitely variable |
| Traction load resistance | 250 kip |
| Compression load resistance | 150 kip |
| Vibration resistance | 10 g RMS (10 – 2000 hz) |
| Shock resistance | 300 g / 11 ms |
| Maximum flow rate | 62,000 bpd |
| Opening time | 110 seconds |
| Closing time | 70 seconds |
| Integrated sensors | Well temperature, well pressure and sleeve position |
| Maximum communication distance | 5 km |
| Maximum power consumption | 200 W (at downhole) |
| Materials | Nace MRO175 compliant |

* Valve size could be customized upon technical feasibility analysis

FEATURES AND BENEFITS

- Electrically operated;
- Multiple valves sharing a single electrical cable in the same well;
- Infinitely variable choke;
- Fast, bidirectional, changes in the choke position;
- Redundant sensing systems for choke position, feedback, and diagnostics;
- Erosion resistant trim with tungsten carbide inserts;
- High axial driving force to remove scale build-up on the choke trims;
- Open/close mechanical override system using standard wireline methods;
- Tubing sizes from 4 ½" to 8 ½";
- Long life cycle;
- Compact design;
- Maximum production efficiency;
- All-electric system for high temperature and pressure;
- Highly accurate flow control.

