SECTION 1
Gravel Pack and Frac-Pack Systems
GRAVEL PACK AND FRAC-PACK SYSTEMS

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ComPlete™ FP System

Superior Completion Services’ ComPlete™ Frac-Pack (FP) System is a single-trip, single-zone, frac/gravel pack completion system. The system allows set-down weight to be applied in both squeeze and circulating positions to eliminate problems associated with tubing movement during the well treatment. It can be repeatedly cycled between the squeeze and circulating positions with minimal up and down movement of the work string. The system is simple in design and offers mechanical indications of all positions and tool movements. The service tool position is the same in the squeeze and circulating positions, minimizing the potential for erosion.

APPLICATIONS
• Conventional single-trip gravel and frac-packing
• Acid stimulation treatments
• Horizontal or vertical well displacements
• Conventional multizone stack-pack completions

Features and Benefits

• Hydraulic pressure release (tubing or annular) with contingency mechanical release
• True live annulus pressure monitoring in the weight-down circulating position
• Reverse circulation through wash pipe is possible in the circulating position for removal of pills, debris, etc.
• Ports are aligned in all treating positions
• Treating sleeve incorporates bonded production seals for maximum pressure integrity and reliability
• Isolation valve provides zonal isolation in reverse position
• Short overall length
**ComPlete™ FPDZ System**

Superior Completion Services’ **ComPlete™ Frac-Pack Deep-Zone (FPDZ) System** is a frac-pack rated sand control placement technology. It is specially configured for deep completions where work string stretch and drag make downhole tool manipulation more challenging. The system offers extended tool length, increasing the acceptable range for reverse position. Dual collets on the service tool ensure positive manipulation of the circulating valve while picking up to reverse and provide a positive weight indication when the reverse position is achieved.

**APPLICATIONS**

- Ultra-deep completions
- Sand control
- Deepwater
- Highly deviated well trajectories

**Features and Benefits**

- Extended reverse position
- Dedicated circulating valve collet for controlling return flow
- Mechanical indication of reverse position
- Successful tool manipulation in ultra deep and highly deviated wellbores
- Resists unintentional closing of the circulating valve due to work string slingshot effect
- Hydraulic pressure release (tubing or annular) with redundant mechanical release
- True live annulus pressure monitoring in the circulating position
- Reverse circulation through wash pipe is possible in the circulating position for removal of pills, debris, etc.
- Ports are aligned in all treating positions
- Treating sleeve incorporates bonded production seals for maximum pressure integrity and reliability
- Isolation valve provides zonal isolation in reverse position

**REFERENCES**

CompSet™ Packers data sheet
CompSet™ Ultra packer data sheet
ComPlete™ FP Anti-Swab System

Superior Completion Services’ ComPlete™ Frac-Pack Anti-Swab (ASW) System is a frac-pack stimulation tool technology designed for highly unconsolidated formations requiring sand-control treatment. The simple yet extremely effective tool design ensures that the wellbore hydrostatic is maintained on formation at all times while running in hole, during and after packer setting, spotting treatment, etc. It is specially configured for deepwater completions to overcome the drag and stretch related challenges endured by long work string in complicated wellbore trajectory. The service tool locates at the same spot on the packer for a weight-down frac or a true-squeeze position, overcoming confusion related to tool position. The extended nature of the tool provides enough room in reverse position during spotting or slurry reversal. This system consists of both proprietary and premium metal-to-metal for an absolute system integrity.

APPLICATIONS

- Ultra-deep completions
- Highly unconsolidated
- Deepwater
- Maintains hydrostatic on formation

Features and Benefits

- Proprietary and premium metal to metal connection
- Dedicated valve for anti-swab function using a controlled weep subsystem
- Positive surface indication of engagement during packer testing
- Effortless tool manipulation in challenging downhole environment and deviated wellbores
- Proprietary design to prevent sling shot during manipulating service tool downhole
- Hydraulic pressure release with secondary rotational release
- Positive isolation valve provides zonal isolation in reverse position
- Also consists of other features and benefits of the FPDZ System

REFERENCES

CompSet™ Packers data sheet
CompSet™ Extreme packer data sheet
**ComPlete™ FP System**

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Minimum Overall Length</th>
<th>16 ft (4.9 m)</th>
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<tbody>
<tr>
<td>Temperature Rating</td>
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### ComPlete™ FP System

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<thead>
<tr>
<th>Casing Size</th>
<th>Minimum OD</th>
<th>Pump Rate</th>
<th>Proppant Volume</th>
<th>Differential Pressure Rating</th>
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<td>inch/mm</td>
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<td>lb/kg psi MPa</td>
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<td>5 - 5 ½</td>
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<td>9 ¾ - 13 ¾</td>
<td>244.5 - 339.7</td>
<td>6.00/152.4</td>
<td>50/7.95</td>
<td>1,000,000/453,598/10,000/68.9</td>
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<tr>
<td>9 ¾ - 13 ¾</td>
<td>244.5 - 339.7</td>
<td>6.00/152.4</td>
<td>50/7.95</td>
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### ComPlete™ FP Extreme/ Anti-Swab System

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<td>lb/kg psi MPa</td>
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<tr>
<td>7 ¾*</td>
<td>196.9</td>
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### ComPlete™ FP Ultra System

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<td>5.50/139.7</td>
<td>60/9.54</td>
<td>1,000,000/453,597/15,000/103.4</td>
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</table>

* Tested with intermediate- and high strength proppant.

**REFERENCES**

CompSet™ Packers data sheet
CompSet™ Ultra packer data sheet
Molded-Seal Closing Sleeve

Superior Completion Services’ Molded-Seal (MS) Closing Sleeve is used in high-rate water packs, fracturing and stimulation in vertical or horizontal well completions. The unique port body and closing sleeve provides maximum proppant deployment and positive sealing after zonal treatment. The MS closing sleeve is assembled as a ComPlete™ Frac-Pack (FP) System with Superior Completion’s CompSet™ Packers.

APPLICATIONS

• Vertical or horizontal well completions
• High-rate water packs, fracturing and stimulation

Features and Benefits

• Large treatment ports
• Inverted molded seals for positive isolation
• Compatible with all ComPlete™ system packers
• Debris-tolerant design ensures complete sleeve closure after stimulation

TECHNICAL DATA

Pressure Rating 10,000 to 15,000 psi (68.9 to 103.4 MPa)
Temperature Rating Up to 350°F (177°C)

REFERENCES

ComPlete™ FP data sheet
CompSet™ Packers data sheet
CompSet™ Ultra packer data sheet