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# Company Profile



## Company Profile

Dripro Co. Ltd., established in 2007, with a registered capital of 10 million yuan, has obtained “High-tech Enterprise Identification Certificate”, ISO-9001 certificate, HSE certificate, APIQ1, API11D1 ,API 19V certificate.

The main business of the company is:

- Reservoir protection valve/Formation isolation valve series tools;
- Sand control tools sales and installation services;
- Completion tool design, development, sales and installation services;
- Fiber type implanted type of reservoir pressure and temperature monitoring system for sales and installation services;
- Oilfield drilling, completion and production equipment, tools, import and export trade and leasing services



## Company Profile

Our products are manufactured in accordance with American Petroleum Institute (API) standards and China National Offshore Oil and China Oil and Natural Gas industry standards. We are able to provide our customers with completion design, completion tool selection, completion tool supply and installation services for horizontal multizone gravel pack.

The company follows the strategy of sustainable development, relying on its own strong technical force, relying on the cooperation with domestic and foreign enterprises and experts, as well as with domestic institutions of higher learning and research institutes, has developed more than a dozen equipment and tools with independent intellectual property rights. The company adheres to the idea of "quality for life, talent as the source, benefit as the goal, innovation as the foundation, fine perfection". Dedicated to provide safe, high quality, efficient, environmental protection services for domestic and foreign customers. Achieve win-win results with shareholders, customers, employees and partners, and strive to become a world-class oilfield service company.



## Qualification Certificate

### System Certificate:

- API Q1 Quality Management System
- ISO 9001 Quality Management System
- ISO 14001 Environmental management system
- ISO 45001 Occupational health and safety management system
- Health, Safety and Environment Management System certification certificate

### API Branded product:

- API 11D1 Packer
- API 19V Formation Isolation Valve-V1 Grade



## Qualification Certificate

### System Certificate:

API Q1 Quality Management System

ISO 9001 Quality Management System

ISO 14001 Environmental management system

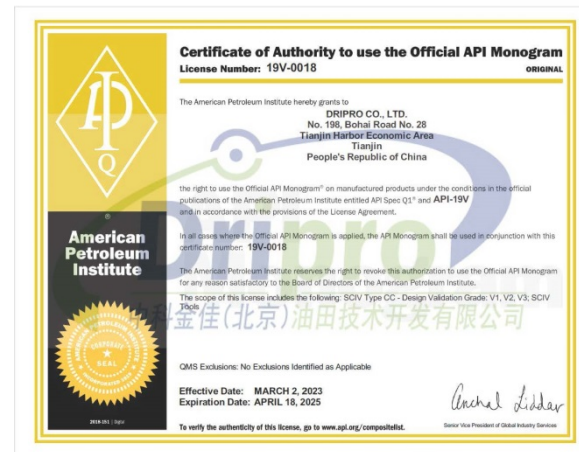
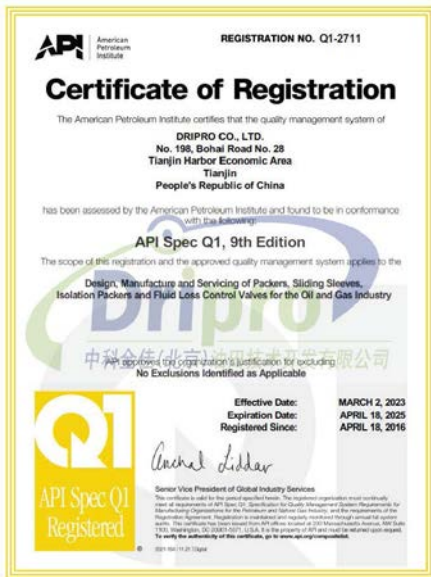
ISO 45001 Occupational health and safety management system

Health, Safety and Environment Management System certification certificate

### API Branded product:

API 11D1 Packer

API 19V Formation Isolation Valve-V1 Grade



## Intellectual Property Rights

More than 30 invention patents and utility model patents:  
Include formation isolation valves, completion tools, etc.  
High-tech enterprise



# Main testing device in base of Dripro in Tianjin city

## API 19V gas and hydraulic testing system

Temperature: 300°C,

Pressure: 70Mpa

With the mixture of mud and cermics device



## Making up machine

Max.range 9-5/8"

## Pulling and Pushing system

0-30 ton





## Production Device of Machine

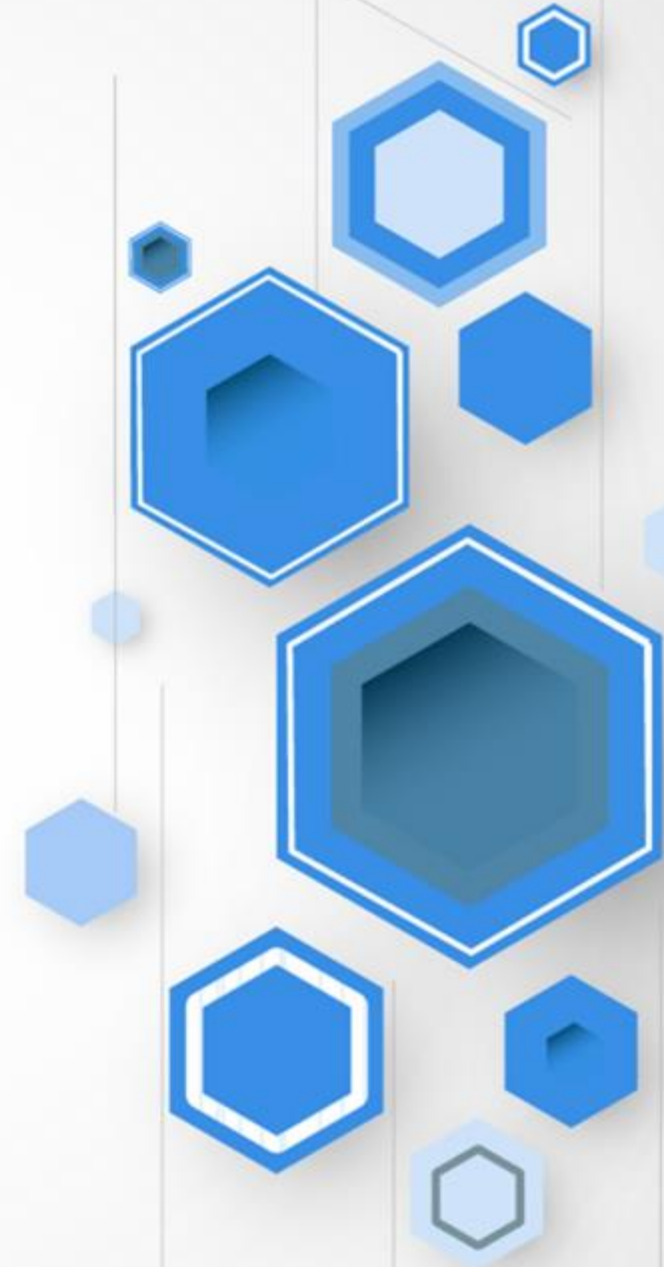
- ◆ Computerised Numerical Control Machine
- ◆ Deephole drilling and Boring Machine
- ◆ Wire Cutting Machine

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## Sand Control Screen

- ◆ Wire wrapped Screen
- ◆ Slotted Screen
- ◆ Bridge slot Screen
- ◆ Multilayers Premium Screen
- ◆ Perforated Pipe
- ◆ ICD Screen



## Wire wrapped Screen

The wire-wrapped screen consists of perforated pipe, outer jacket, end ring and centralizer. Key-stone or house shape wires are simultaneously wrapped and welded to form uniform slots.

The jacket is then placed over perforated pipe and welded to each end. The retal wire-wrapped screen`s strength, high quality and precise slot control make it an excellent choice for deep ,vertical wells as well as horizontal wells.

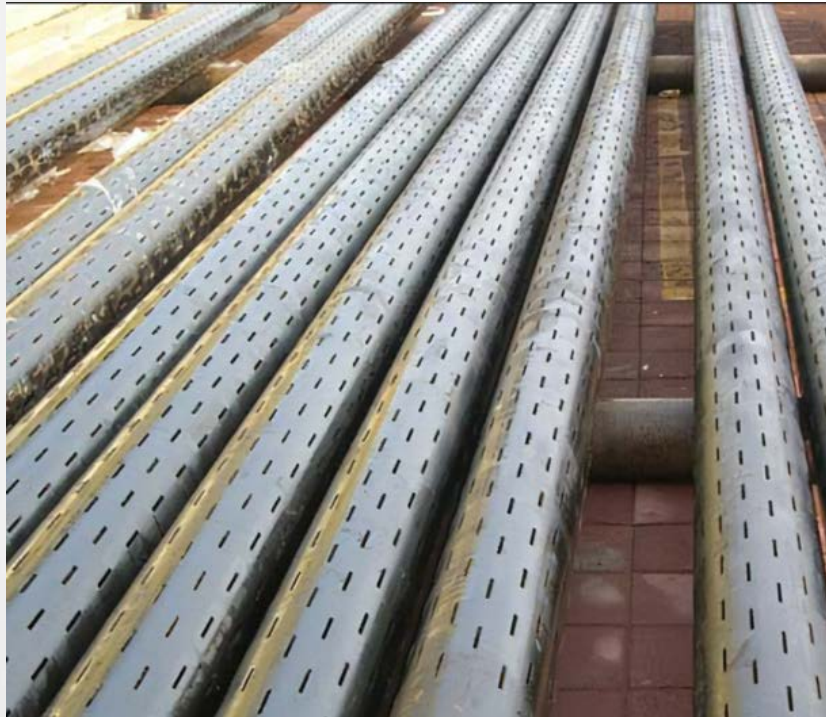


Minimum slot opening: 0.1mm, which can satisfy the most of well-completion requirements and High flow area.



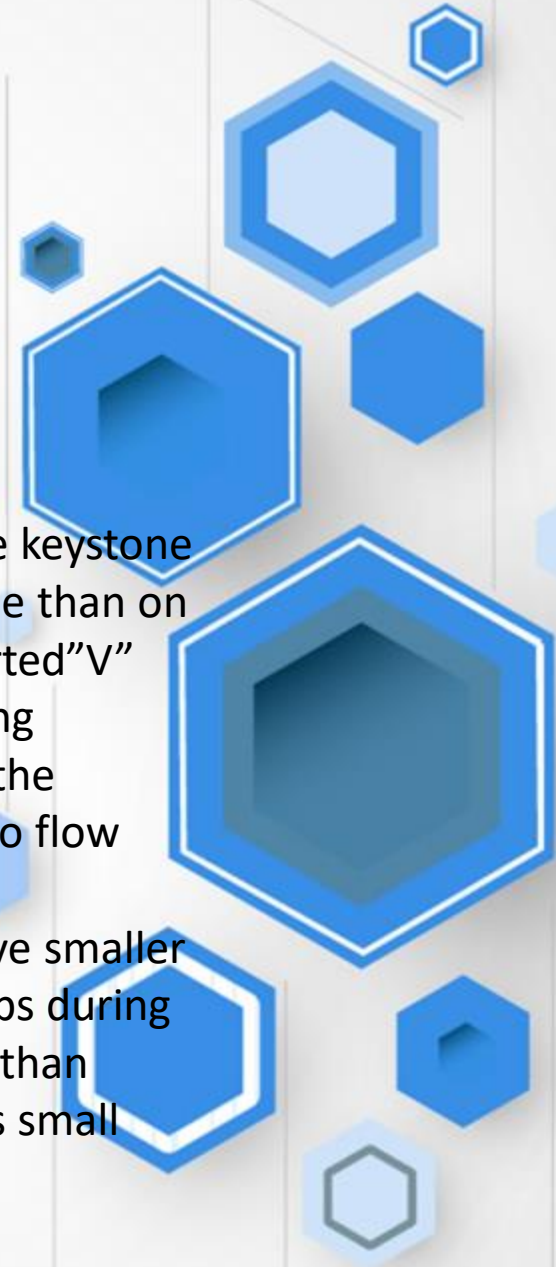
## Slotted Liner

Slotted liners are made from tubulars by saw-cutting slot configurations. Slot widths are often referred to in terms of gauge. Slot or screen gauge is simply the width of the opening in inches multiplied by 1,000. For instance, a 12-gauge screen has openings of 0.012 in.



The slots can be straight or keystone shaped. The keystone slot is narrower on the outside surface of the pipe than on the inside. Slots formed in this way have an inverted "V" cross-sectional area and are less prone to plugging because any particle passing through the slot at the outside diameter (OD) of the pipe will continue to flow through, rather than lodging within the slot.

The slotted liners are usually less costly. They have smaller inflow areas and experience higher pressure drops during production. Slotted liners also plug more readily than screens. They are used where well productivity is small and economics cannot support the use of screen



## Bridge slot screen

- Screen features bridge- like slot, which creates a gap between the well casing and the packed gravel.
- Bridge slots are spaced in rows or in staggered state.
- Bridge slotted screens are first punched in a flat sheet, which is completely CNC operated. The slot widths are precise and can change as practical requirements. Then the flat sheet is subsequently rolled and welded into a tube. It can be used extensively in water and oil wells, development of geothermal development and mineral water.
- Bridge slot has outstanding anti plugging performance for its unique bridge construction
- Bridge construction also enhances the mechanical strength against twisting, compressive and tensile forces.
- Diverse external coatings are available to extend the operational lives or watering wells.
- Bridge slot screen is lightweight and quite affordable compared with other conventional well screens.



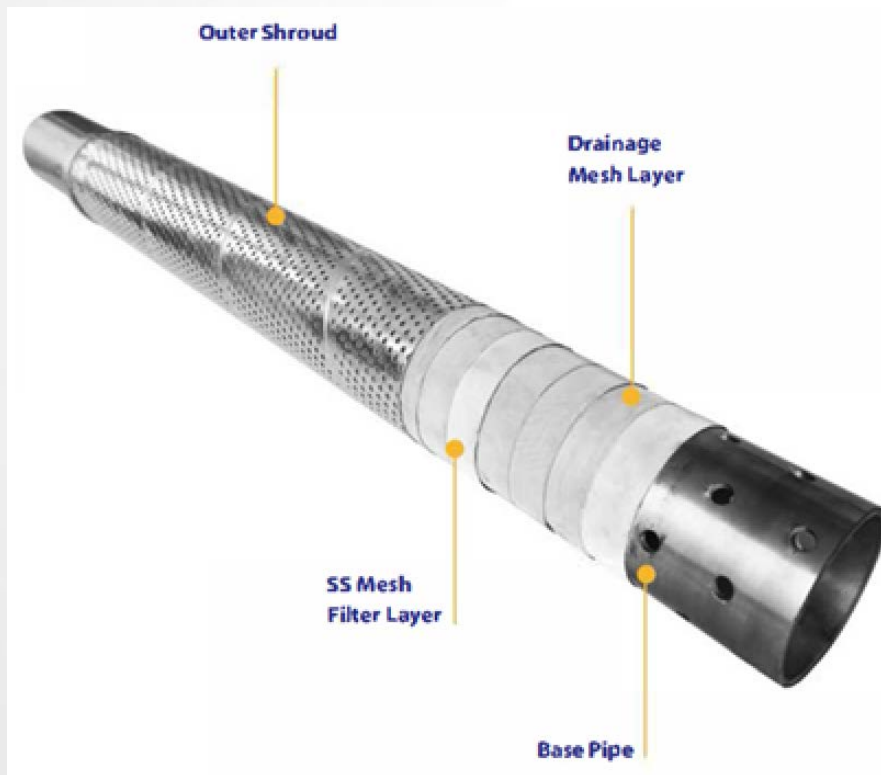
## Multilayer Premium Screen

Multilayer Premium Screen performance is derived from two characteristics, the filter media and secondly the overall construction of the screen. Consists of base pipe, layered filtration jacket and outer shroud.

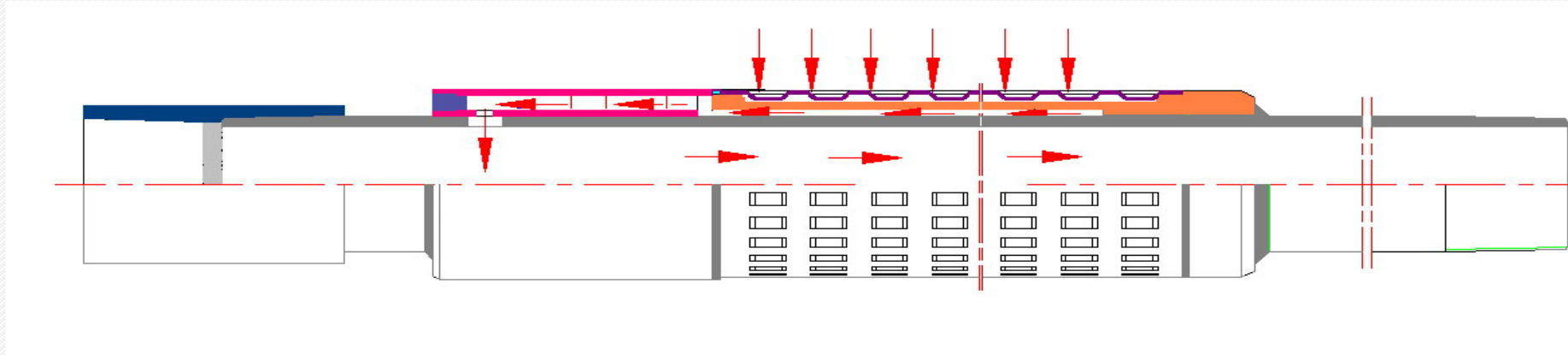


## Perforated Pipe

The perforated liner or pre-perforated casing is manufactured with a 44ft 88spindle drill press Joints with sizes up to  $\text{Ø}20''$  . Our standard spiral and staggered perforation patterns use  $\text{Ø}3/8''$  and  $\text{Ø}1/2''$  diameter holes, to create the required open area. Upon request, custom sizes hold can be drilled in any number and any pattern. Pipe is deburred internal and external as well as drift tested according to API standards. Every hole is visually inspected and cleaned of burr material.



## ICD Screen structure



- **Conforms to API standard tubing and casing ;**
- **Filtration structure of conventional screen ( PMC / PPS )**
- **Special design:**
  - A. Screen / screened pipe: base pipe independent of porthole design;**
  - B. Independent design of screen filter layer and base pipe interlayer, which ensure large flow capacity ;**
  - C. Fluid control device is added to the screen filtration cover, thus proper control of incoming fluid is achieved.**



# 7" Big Bore Single trip Multi-Zone Frac Pack Technology 7 "STMZ





## Technological introduction

### Technical introduction:

Dripro developed 7" Big Bore Single trip Multi-Zone Frac Packing Technology. 170 wells (700 zones) have been used in BoHai Bay.

The Dripro developed 7" STMZ has obvious advanced advantage compared with these products from the same other domestic and foreign companies. Inner diameter of these 7" STMZ from Dripro is 3.88", larger than the other oil service companies', which can be applied to perform frack packing, also will be benefited the oil production measures in future and improve the production efficiency for oil companies.

### Main Feature:

The design of 7" STMZ has implemented for the first time a high pumping rate, high pressure, high density proppant in the 7" STMZ frack packing process, provide convenience for stimulation measures. The design of big bore allows the 2-7/8" pipeline to pass through, enabling zone separation production, water injection, and fine reservoir management, providing more choice for the implementation of follow-up production measures;



## Characteristic

1. Efficiency: Multi-zone sand control by one trip.

2. Big Bore:  
The wellbore equipment ID after sand control is 3.88", enable the 2 7/8" production tubing and normal completion tools pass through; provide convenience for production logging\water injection\simulation operations.

3. FRAC-PACK or HRWP:  
Max frac rate:22 BPM  
Max sand pumped per zone: 150000lbs,10PPG

4. Positioning & Weight Down:  
Accurate location and weight down the service tool when gravel pack

5. Service tool release: Hydraulic and rotation

6. Rotation: Rotation can be performed during GP assembly RIH.

## Ability

1. Casing size: 7" 23~29lb/ft

2. ID after sand control: ID:3.88"

3. Pressure rating: MAX:7500psi

4. Work capability: Team leader : 12 Simultaneously: 7 rigs  
Engineer: 30 Service tool: 17 sets

5. Work zone: MAX zones per well: 5 Zones

6. Well measured depth: MAX depth: 4522m MD

7. Wash pipe(2 3/8") length: MAX length: 190m

8. Well incl angle: MAX deviation: 89.5°

# 7 " Big Bore Single trip Multi-Zone Frac Pack Technology-7 " STMZ

## Operation Sequence

Running Gravel Packing System Tools

DGP Packer Pressure Test

01

02

03

04

05

DSP Sump Packer Install and Setting

DGP Packer Setting

Release The Service Tool

Circulation Test

Mini frac Test

Reverse Circulation

Move to Next Zone

06

07

08

09

10

11

12

13

DIP Packer 1# Setting and Test

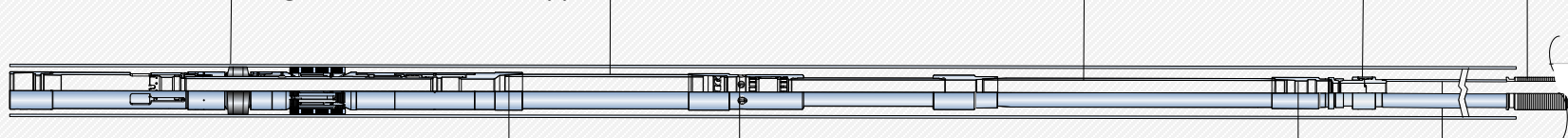
Reverse Circulation Test

Frac Pack

Frac Pack Test/Closing Sleeve Test(Optional)

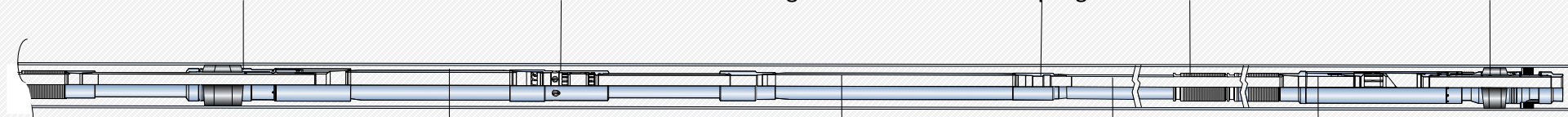
● ➔ Repeat step 06-12, Complete Zone2,Zone3,Zone4,Zone5

1.DGP Gravel Packing Packer 3.Upper Extension 5.Lower Extension 7.Makeup Tool 9.Sand Screen



2.Lower Connector 4.Closing Sleeve 6.Weight Down Indication Coupling 8.Blank Pipe

10.DIP Isolation Packer 12.Closing Sleeve 14.Weight Down Indication Coupling 16.Sand Screen 18.DSP Sump Packer



11.Upper Extension 13.Lower Extension 15.Blank Pipe 17.Sump Packer Snaplatch Seal Assembly

## Well Schematic



# 9 5/8" Single Strip Multi-Zone Frac Pack Technology 9 5/8" STMZ



## Technological introduction

### Technical introduction:

Dripro developed 9 5/8" Single Strip Multi-Zone Frac Packing Technology 75 wells have been used in BoHai Bay.

The Dripro's 9 5/8" Single Strip Multi-Zone Frac Packing system design based on the customer requirement for 9 5/8" cased hole with single trip multi-zone frac pack, and zone isolation\stimulation\water injection\production logging etc..

### Main Feature:

The Dripro's 9 5/8" Single Strip Multi-Zone Frac Packing system application meet our customer requirement of single tip multi-zone frac pack, rig time saving, and also production increase.

Enable Zone isolation for production and water injection

Normal completion tools pass through the ID 4.75 ; provide convenience for production logging\water injection\simulation operations.



## Characteristic

1. Efficiency: Muti-zone sand control by one trip.

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2. FRAC-PACK or HRWP:  
Max frac rate:30 BPM  
Max sand weight: 200000lbs

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3. Positioning & Weight Down:  
Accurate location and weight down the service tool when gravel pack

---

4. Service tool release: Hydraulic and rotation

---

5. Rotation: Rotation can be performed during GP assembly RIH.

## Ability

1. Casing size: 9 5/8" 40~47lb/ft

---

2. ID after sand control: ID:4.75"

---

3. Pressure rating: MAX:7500psi

---

4. Work capability: Team leader : 12    Simultaneously: 4 rigs  
Engineer: 30    Service tool: 8 sets

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5. Work zone: MAX zones per well: 4 Zones

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6. Well measured depth: MAX depth: 4522m MD

---

7. Well incl angle: MAX deviation: 89.5°

## Operation Sequence

Running Gravel Packing System Tools

DGP Packer Pressure Test



DSP Sump Packer Install and Setting

DGP Packer Setting

Release The Service Tool

Circulation Test

Mini frac Test

Reverse Circulation

Move to Next Zone



DIP Packer 1# Setting and Test

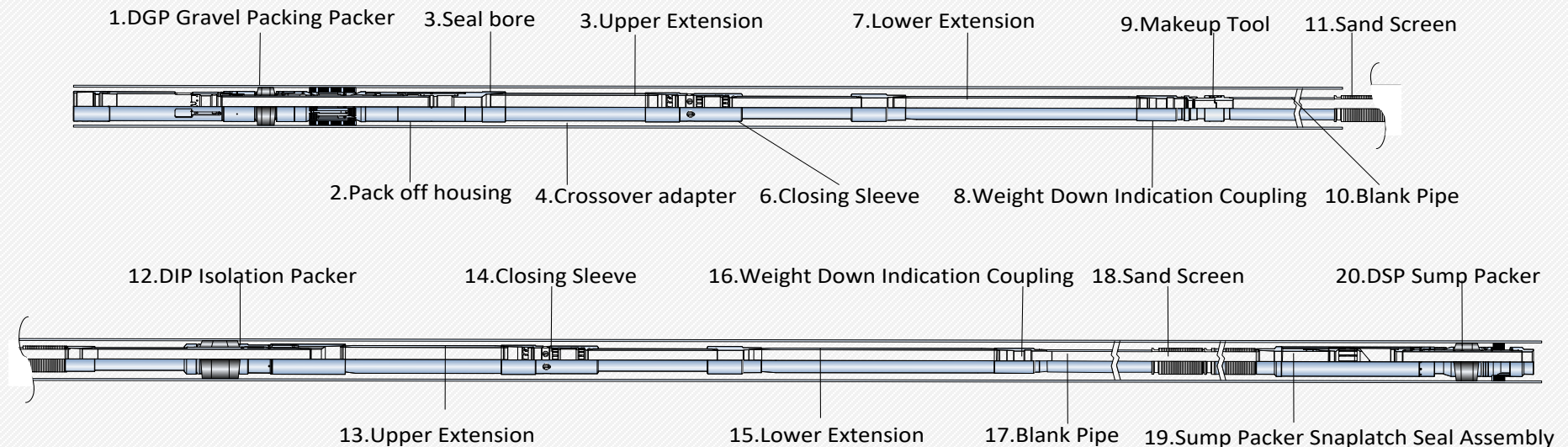
Reverse Circulation Test

Frac Pack

Frac Pack Test/Closing Sleeve Test(Optional)

Repeat step 06-12, Complete Zone2,Zone3,Zone4,Zone5

## Well Schematic





## 6" Open Hole Horizontal Gravel Pack Technology 6"OHGP





## Technological introduction

### Technical introduction:

Dripro developed 6" Open Hole Horizontal Gravel Pack Technology 45 wells have been used in BoHai Bay.

The Dripro's 6" Open Hole Horizontal Gravel Pack system design based on the customer requirement for 6" Open Hole Horizontal with gravel pack.

### Main Feature:

The Dripro's 6" Open Hole Horizontal Gravel Pack system application meet our customer requirement of Open Hole Horizontal Gravel Pack , rig time saving, and also production increase. If adjust the tools , it can used for premium standalone screen gravel pack.

- Positive circulation can be carried out when RIH.
- The 6" Open Hole Horizontal Gravel Pack system can prevent suction in the operating process.



## Characteristic

### 1. Anti swabbing:

No swabbing effect on formation during gravel packing operation period.

### 2. Circulation:

Positive circulation can be carried out when RIH.

### 3. Positioning & Weight Down:

Accurate location and weight down the service tool when gravel pack.

### 4. Rotation:

Rotation can be performed during GP assembly RIH.

## Ability

1. Casing size: Casing: 7" 23~29 lb/ft & 7 5/8" 29.7~33.7 lb/ft  
Open Hole: 6" & 6 1/2"

2. ID after sand control: ID: 3.88"

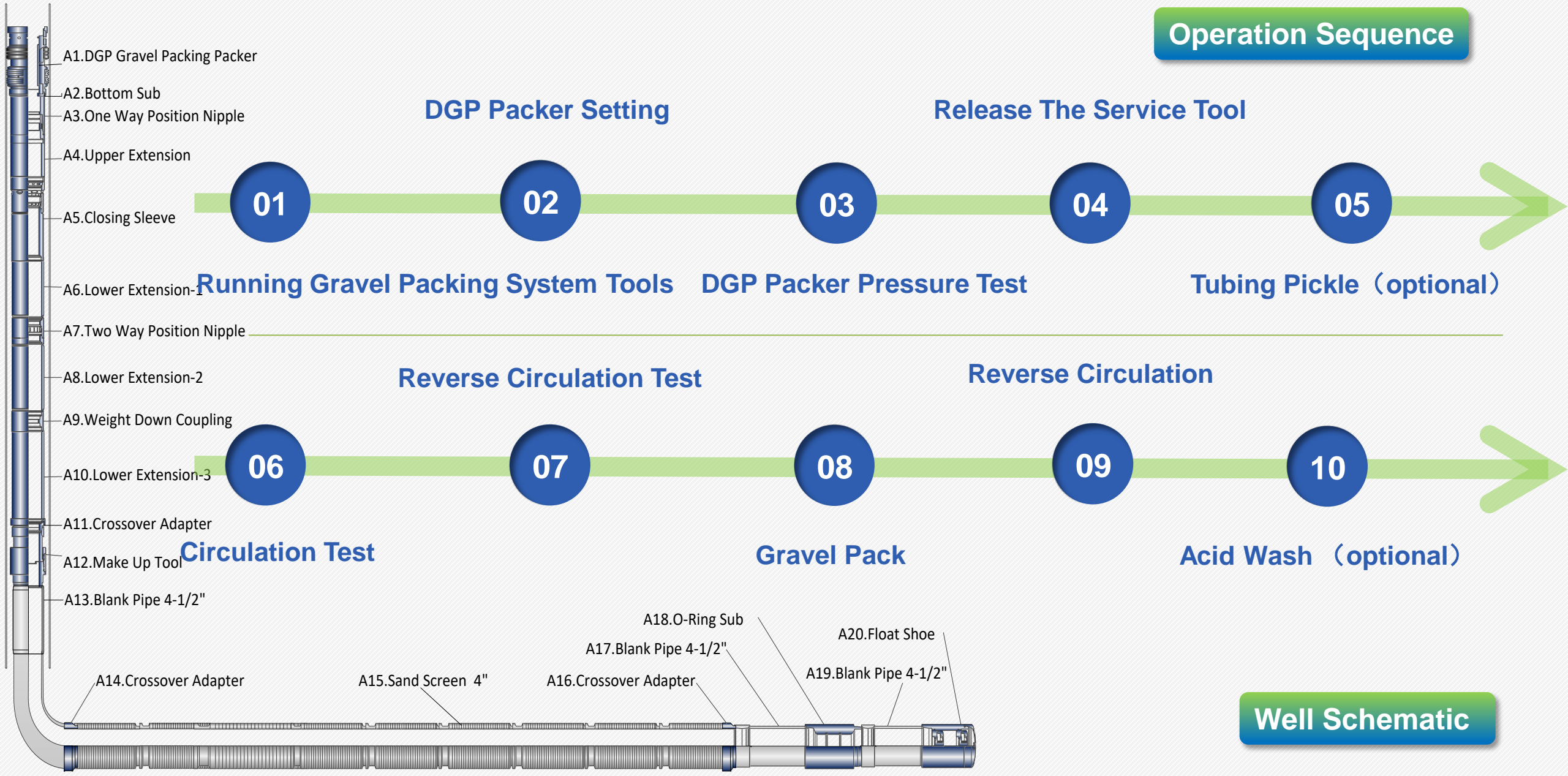
3. Pressure rating: MAX: 7500psi

4. Work capability: Team leader : 12      Simultaneously: 3 rigs  
Engineer: 30      Service tool: 5 sets

5. Gravel packing interval : 300m

6. Well measured depth : MAX depth 4522mMD

**Operation Sequence**



**Well Schematic**



**8 1/2" Open Hole Horizontal  
Gravel Pack Technology  
8 1/2" OHGP**



## Technological introduction

### Technical introduction:

Dripro developed 8 1/2" Open Hole Horizontal Gravel Pack Technology 57 wells have been used in BoHai Bay.

The Dripro's 8 1/2" Open Hole Horizontal Gravel Pack system design based on the customer requirement for 8 1/2" Open Hole Horizontal with gravel pack.

### Main Feature:

The Dripro's 8 1/2" Open Hole Horizontal Gravel Pack system application meet our customer requirement of Open Hole Horizontal Gravel Pack , rig time saving, and also production increase. If adjust the tools , it can used for premium standalone screen gravel pack.

- Positive circulation can be carried out when RIH.
- The 8 1/2" Open Hole Horizontal Gravel Pack system can prevent suction in the operating process.



## Characteristic

1.

### Anti swabbing:

No swabbing effect on formation during gravel packing operation period.

2.

### Circulation:

Positive circulation can be carried out when RIH.

3.

### Positioning & Weight Down:

Accurate location and weight down the service tool when gravel pack.

4.

### Rotation:

Rotation can be performed during GP assembly RIH.

## Ability

1.

### Casing size:

Casing: 9 5/8" 40~47lb/ft  
Open Hole: 8 1/2 "

2.

### ID after sand control: ID: 6.00"

3.

### Pressure rating: MAX:7500psi

4.

### Work capability:

Team leader : 12      Simultaneously: 3 rigs  
Engineer: 30              Service tool: 6 sets

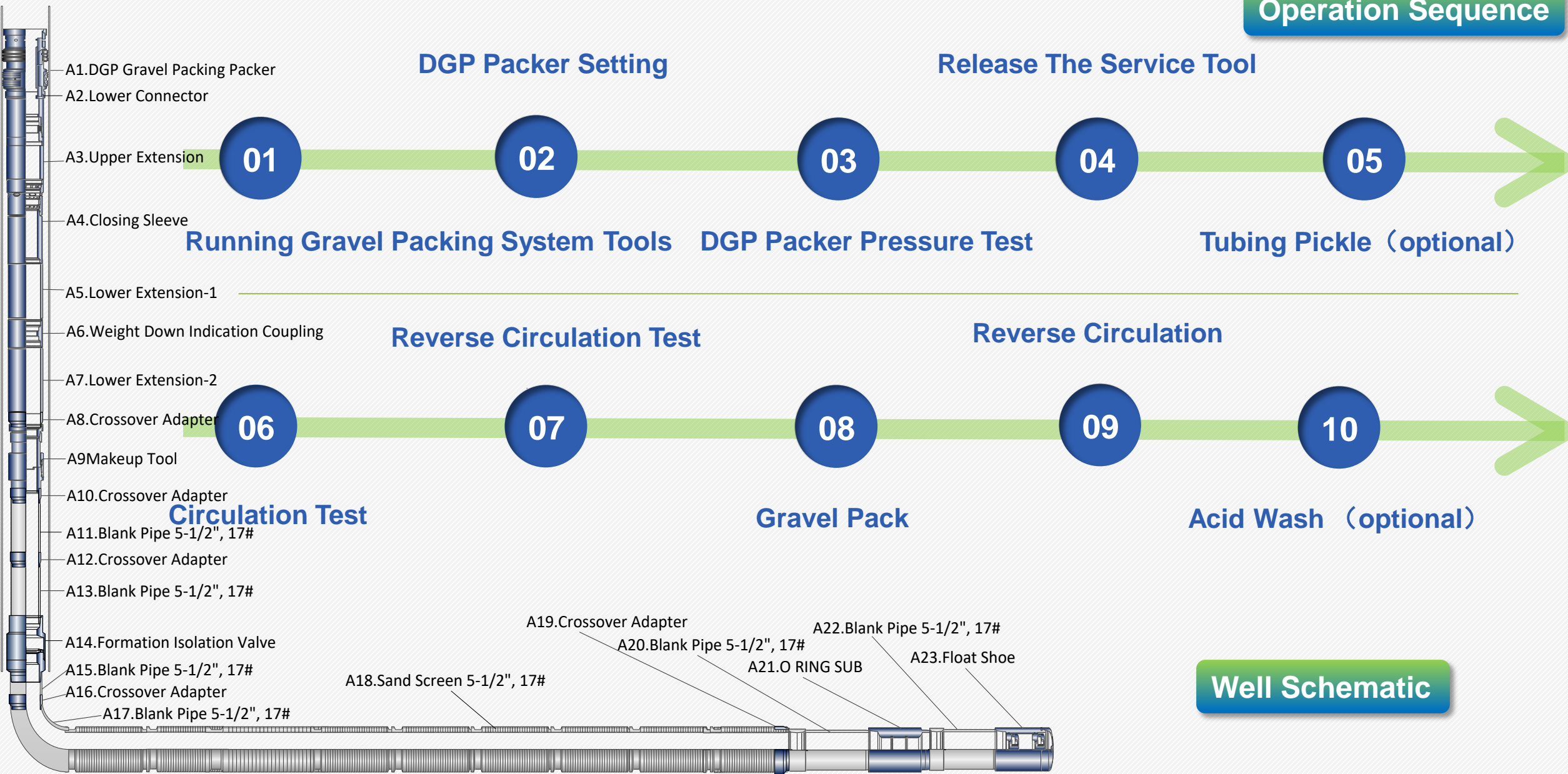
5.

### Gravel packing interval: 300m

6.

### Well measured depth: MAX depth: 4522mMD

**Operation Sequence**



**Well Schematic**



## Stack Pack Technology 9 5/8" & 7" Stackpack





## Technological introduction

### Technical introduction:

Dripro developed 9 5/8" & 7" Stack pack Technology 25 wells have been used in BoHai Bay, it has been work well.

The Dripro's 9 5/8" & 7" Stack pack system design based on the customer requirement for 9 5/8" cased hole with stack pack, and zone isolation\stimulation\water injection\production logging etc.

---

### Main Feature:

The Dripro's 9 5/8" & 7" Stack pack system application meet our customer requirement of stack perforation , stack pack , and also production increase.

- Enable work for large frac pack or deep frac pack.
- The 9 5/8" & 7" Stack pack system can prevent suction in the operating process.

## Characteristic

### Anti swabbing:

1. No swabbing effect on formation during gravel packing operation period

### Efficiency:

Simple service tool , easy operation , reliable.

### Operation range:

Circulation pack, high rate water pack, frac pack.

### Positioning & Weight Down:

4. Accurate location and weight down the service tool when gravel pack.

### Service tool release: Hydraulic and rotation

6. **Rotation:** Rotation can be performed during GP assembly RIH.

## Ability 7"

1. Casing size: 7" 23~29lb/ft

2. ID after sand control: ID:3.88"

3. Pressure rating: MAX:7500psi

## Ability 9 5/8"

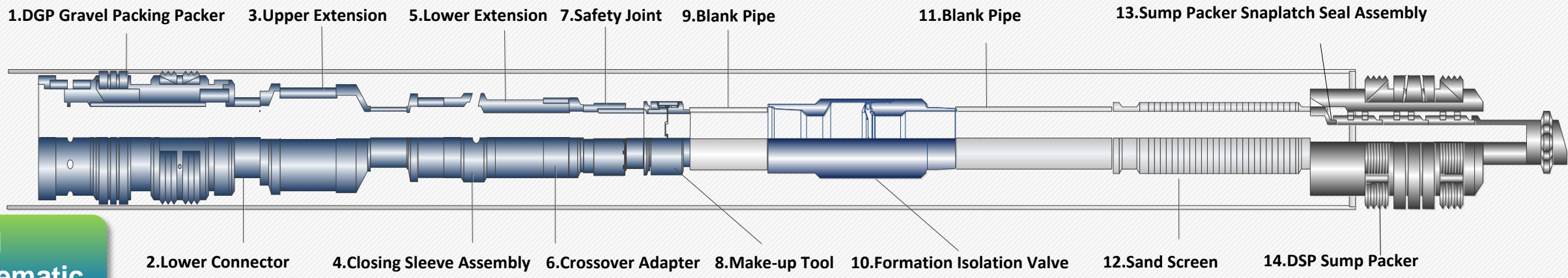
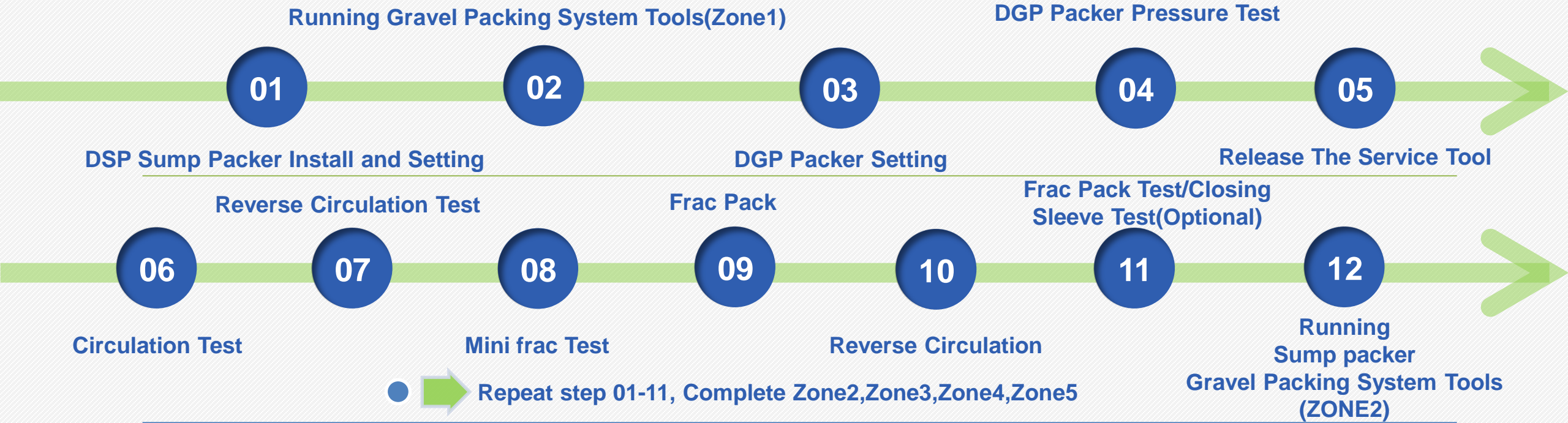
5. Casing size : 9 5/8" 40~47lb/ft

6. ID after sand control : ID:6.00"

7. Pressure rating: MAX:7500psi

8. **Work capability:** Team leader : 12      Simultaneously: 3 rigs  
Engineer: 30      Service tool: 6 sets

## Operation Sequence



# Formation Isolation Valve

**Ball Type Multi Switch**  
**Ball Type Multi Switch(Hydraulic Actuated)**  
**Knockout Type**  
**Flapper Type (DO) Multi Switch**

## Technological introduction

Dripro developed 9 5/8" & 7" FIV design based on the customer requirement for Prevent well completion fluid from lost into the formation and causing formation damage and reduce production.

The FIV prevents formation contamination, reduces flowback time and saves operating costs.

### ➤ Ball Type Multi Switch

FIV has a bi-direction seal, can be used in heavy mud applications and 89 Wells has been used in BoHai Bay.

### ➤ Ball Type Multi Switch(Hydraulic Actuated)

FIV has a bi-direction seal, can be activated open by remote wellhead pressure, can be used in heavy mud applications.

### ➤ Knockout Type

The FIV can be opened by breaking the flapper with wellhead pressure or using tubing, coiled tubing or wireline operations etc mechanical means. 35 Wells are being used in BoHai Bay this year.

### ➤ Flapper Type (DO) Multi Switch

Big bore, bi-direction seal, can prevent sand and falling objects

### ➤ API 19V certification.

