

LINER SYSTEMS

## Liner Hangers

Liner Top Packers and Tie Back, Mechanical & Hydraulic Hanger, Plugs & Landing Collars.

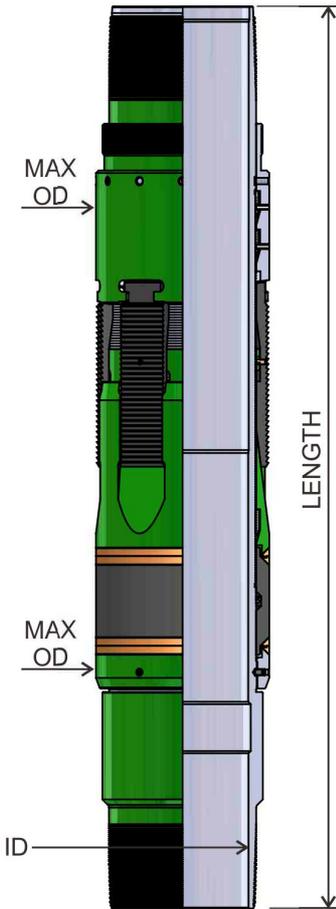




**XPG**

**INTEGRAL LINER TOP PACKER WITH ROCKER ARM SLIPS**

**Dimensions**



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	37.400
2	5"	18.0	7" 23.0-29.0 ppf	5.875	4.330	37.400
3	7"	23.0	9-5/8" 36.0-40.0 ppf	8.375	6.250	43.300
			9-5/8" 40.0-47.0 ppf	8.250	6.250	
			9-5/8" 43.5-53.5 ppf	8.250	6.250	
		26.0	9-5/8" 36.0-40.0 ppf	8.375	6.173	
			9-5/8" 40.0-47.0 ppf	8.250	6.173	
			9-5/8" 43.5-53.5 ppf	8.250	6.173	
		29.0	9-5/8" 36.0-40.0 ppf	8.375	6.173	
			9-5/8" 40.0-47.0 ppf	8.250	6.173	
			9-5/8" 43.5-53.5 ppf	8.250	6.173	

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



**XPG1****INTEGRAL LINER TOP PACKER  
WITH ROCKER ARM SLIPS****Overview**

XPG1 liner top packer is a high performance packer that is suitable for most applications. It has a profile sub inside of the mandrel for the retrievable pack of bushing and features rocker arm type pocket slips and a clutch profile on the top of the packer to connect with rotatable running tools. The packer is set by applying downward force through the tie back sleeve and provides an effective annular seal between liner top and previous casing, and helps prevent formation breakdown, fluid losses and gas migration.

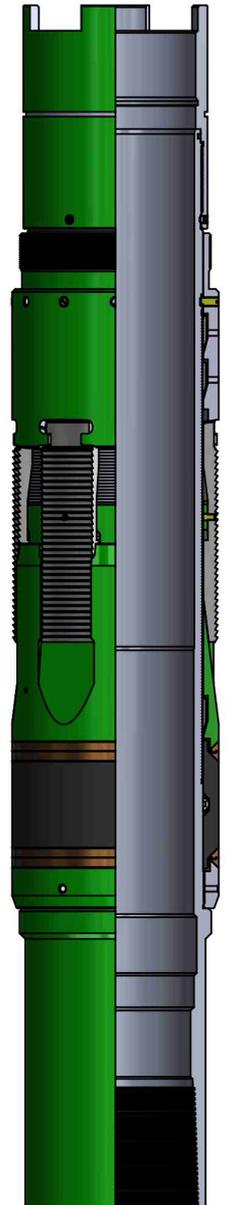
The XPG1 liner top packer compatible with all Sagatrade's liner hanger models.

**Features & Benefits**

- Set by mechanical downward force with adjustable shear force rating.
- Has profile sub inside the mandrel for retrievable pack of bushing.
- Comes with box down connection.
- Features clutch profile on the top of the packer that connects to rotatable liner hanger running tools.
- Features rocker arm type pocket slips to prevent light liners moving upward.
- Pocket type slips allow the packer to be run in highly deviated wells and most other liner application.
- Provides effective seal at the top liner.
- Prevent fluid losses, gas migration and formation breakdown.
- Ratchet body lock ring for positively and permanently locks seal element in place after packer is set.

**Applications**

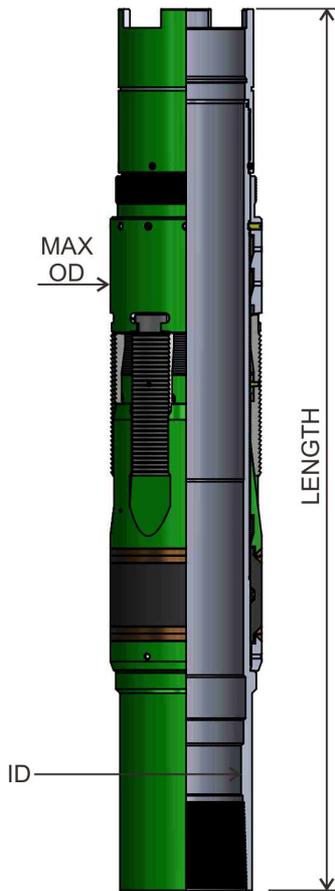
- Liner top packer for cemented and uncemented liner applications.
- Rotating, rotatable and non-rotatable liner applications.
- Suitable for highly deviated wells.



**XPG1**

**INTEGRAL LINER TOP PACKER WITH ROCKER ARM SLIPS**

Dimensions



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	42.600
2	5"	18.0	7" 23.0-29.0 ppf	5.875	4.408	42.600
3	7"	23.0	9-5/8" 36.0-40.0 ppf	8.375	6.250	46.920
			9-5/8" 40.0-47.0 ppf	8.250	6.250	
			9-5/8" 43.5-53.5 ppf	8.250	6.250	
		26.0	9-5/8" 36.0-40.0 ppf	8.375	6.173	
			9-5/8" 40.0-47.0 ppf	8.250	6.173	
			9-5/8" 43.5-53.5 ppf	8.250	6.173	
		29.0	9-5/8" 36.0-40.0 ppf	8.375	6.173	
			9-5/8" 40.0-47.0 ppf	8.250	6.173	
			9-5/8" 43.5-53.5 ppf	8.250	6.173	
4	9 5/8"	53.5	13 3/8" 68.0-86.0 ppf	11.875	8.657	59.450

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



## XPG2 INTEGRAL LINER TOP PACKER WITH ROCKER ARM SLIPS

### Overview

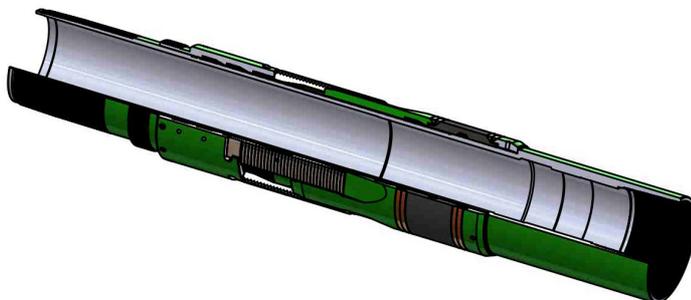
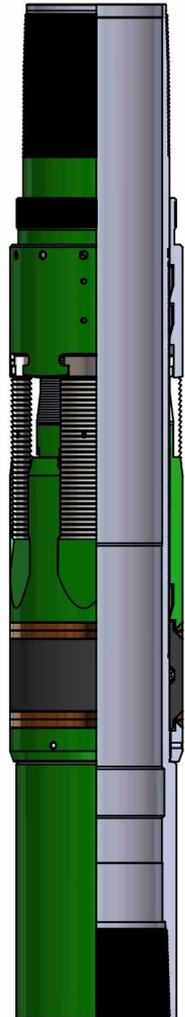
XPG2 liner-top packer is a high performance packer that is suitable for most liner applications. It features a profile sub inside of the mandrel for the retrievable pack of bushing and has rocker arm type pocket slips. The packer is set by applying downward force through the tie back sleeve and provides an effective annular seal between top liner and previous casing, prevent formation breakdown, fluid losses and gas migration. The XPG liner top packer compatible with all Sagatrade's liner hanger type.

### Features & Benefits

- Set by mechanical downward force with adjustable shear force rating.
- Has a profile sub inside the mandrel for the retrievable pack of bushing.
- Come with box down connection.
- Features rocker arm type pocket slips to prevent light liner moving upward.
- Pocket slips type allow the packer to run in highly deviated wells and most other liner application.
- Provides effective seal at the top liner.
- Prevent fluid losses, gas migration and formation breakdown.
- Ratchet body lock ring for positively and permanently locks seal element in place after packer is set.

### Applications

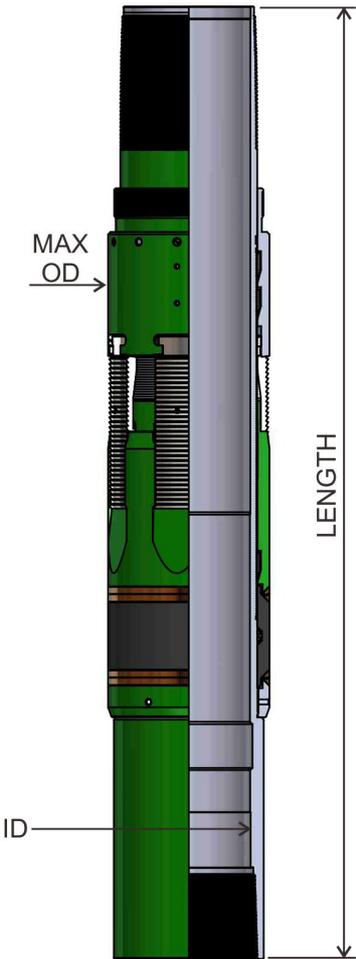
- Liner top packer in both cemented and uncemented liner applications.
- Rotating, rotatable or non-rotating liner applications.
- Suitable for highly deviated wells.





# XPG2 INTEGRAL LINER TOP PACKER WITH ROCKER ARM SLIPS

## Dimensions



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4-1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	44.500
2	5"	18	7" 23.0-29.0 ppf	5.875	4.330	44.500
3	7"	23.0	9-5/8" 36.0-40.0 ppf	8.375	6.250	48.920
			9-5/8" 40.0-47.0 ppf	8.250	6.250	
			9-5/8" 43.5-53.5 ppf	8.250	6.250	
		26.0	9-5/8" 36.0-40.0 ppf	8.375	6.173	
			9-5/8" 40.0-47.0 ppf	8.250	6.173	
			9-5/8" 43.5-53.5 ppf	8.250	6.173	
		29.0	9-5/8" 36.0-40.0 ppf	8.375	6.173	
			9-5/8" 40.0-47.0 ppf	8.250	6.173	
			9-5/8" 43.5-53.5 ppf	8.250	6.173	

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



**XPG3**

**INTEGRAL LINER TOP PACKER WITH ROCKER ARM SLIPS**

**Overview**

XPG3 liner top packer is a high performance packer that is suitable for most applications. It has a profile sub inside the mandrel for the retrievable pack of bushing and features rocker arm type pocket slips. The top of the packer connects to the non-rotatable running tools. The packer is set by applying downward force through the tie back sleeve and provides an effective annular seal between the liner top and previous casing preventing formation breakdown, fluid losses and gas migration.

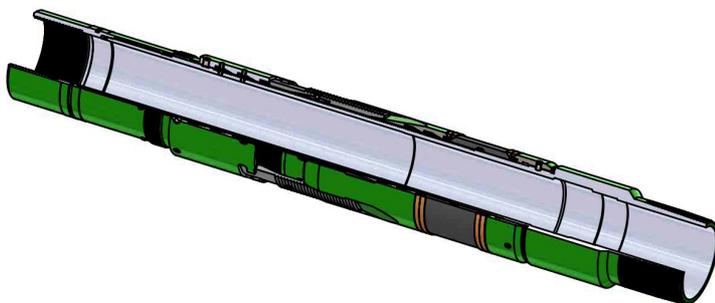
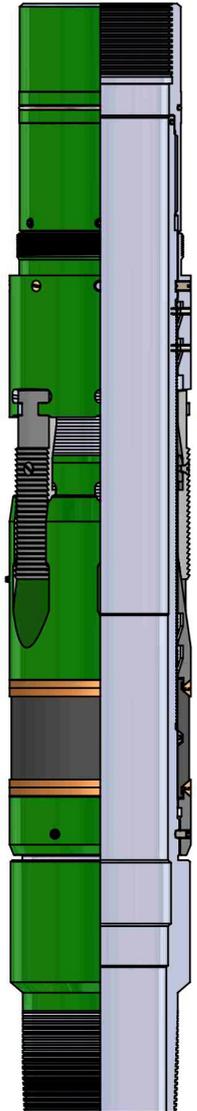
The XPG3 liner top packer is compatible with all Sagatrade's liner hanger models

**Features & Benefits**

- Set by mechanical downward force with adjustable shear force rating.
- Has a profile sub inside the mandrel for retrievable pack of bushing.
- Comes with box down connection.
- Features rocker arm type pocket slips to prevent light liner moving upward.
- Pocket slips type allow the packer to run in highly deviated wells and most other liner applications.
- Provides effective seal at the top liner.
- Prevent fluid losses, gas migration and formation breakdown.
- Ratchet body lock ring for positively and permanently locks seal in element place after the packer is set.

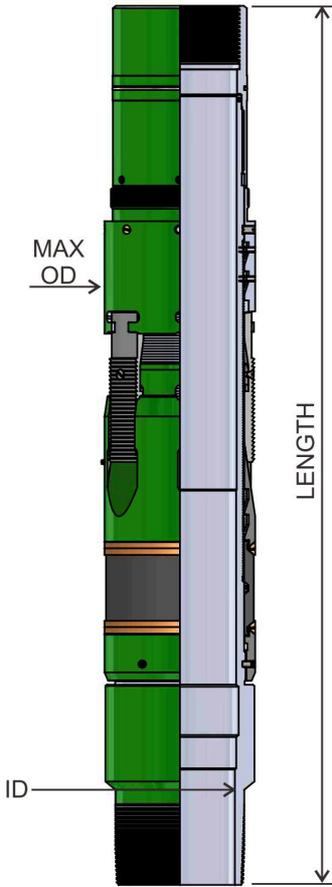
**Applications**

- Liner top packer for cemented and uncemented liner applications.
- Rotating, rotatable or non-rotatable liner applications.
- Suitable for highly deviated wells.



**XPG3** INTEGRAL LINER TOP PACKER WITH ROCKER ARM SLIPS

Dimensions



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4-1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	44.350
2	5"	18	7" 23.0-29.0 ppf	5.875	4.330	44.350
3	7"	23.0	9-5/8" 36.0-40.0 ppf	8.375	6.250	48.670
			9-5/8" 40.0-47.0 ppf	8.250	6.250	
			9-5/8" 43.5-53.5 ppf	8.250	6.250	
		26.0	9-5/8" 36.0-40.0 ppf	8.375	6.173	
			9-5/8" 40.0-47.0 ppf	8.250	6.173	
			9-5/8" 43.5-53.5 ppf	8.250	6.173	
29.0	9-5/8" 36.0-40.0 ppf	8.375	6.173			
	9-5/8" 40.0-47.0 ppf	8.250	6.173			
	9-5/8" 43.5-53.5 ppf	8.250	6.173			
4	9 5/8"	43.5	13 3/8" 54.5-68.0 ppf	12.000	8.630	58.450

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



## PPL MECHANICAL LINER HANGER

### Overview

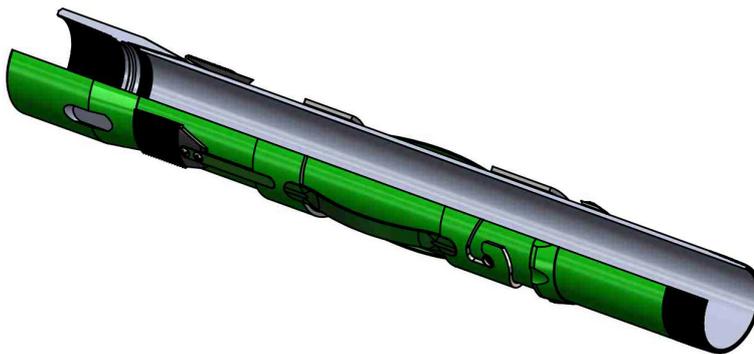
PPL Mechanical Liner Hanger is a single cone mechanical liner hanger that used in light liner applications. The liner hanger utilizes a J-slot design and required left-hand rotation to activated the hanger slips. The J-slot design allows liner hanger to be unset and it can be re-locked into the run-in position on surface.

### Features & Benefits

- Single cone design.
- Mechanical set liner hanger is set with left-hand rotation.
- Come with drag springs to keep the J-Slot in position during run in hole.
- Simple J-Slot system allows hanger to be set & released the multiple times if necessary.
- No circulating pressure constraints during running in hole.

### Applications

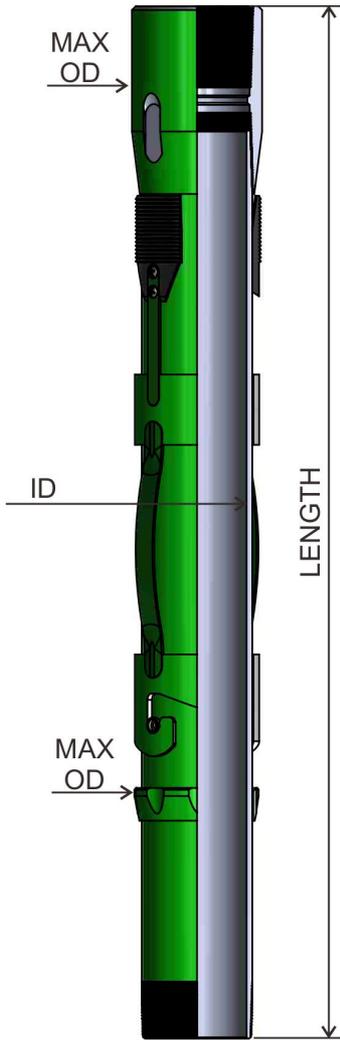
- Non rotatable liner application.
- Mechanical set, light liner application.





**PPL MECHANICAL LINER HANGER**

**Dimensions**



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	65.500
2	5"	15.0	7" 23.0-29.0 ppf	5.875	4.408	65.500
		18.0			4.276	
3	7"	23.0	9-5/8" 36.0-40.0 ppf	8.375	6.366	64.500
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
		26.0	9-5/8" 36.0-40.0 ppf	8.375	6.276	
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
		29.0	9-5/8" 36.0-40.0 ppf	8.375	6.184	
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
4	16"	75.0	20" 94.0 ppf	18.500	15.124	72.520
			20" 94.0-133.0 ppf	18.250		

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.





## ZTC

### HYDRAULIC LINER HANGER NON ROTATABLE

#### Overview

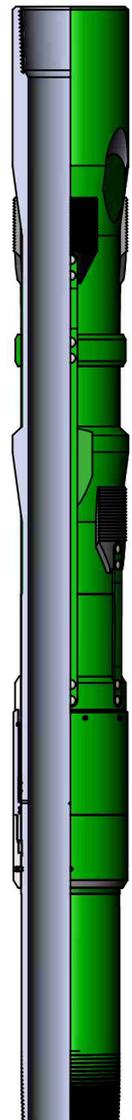
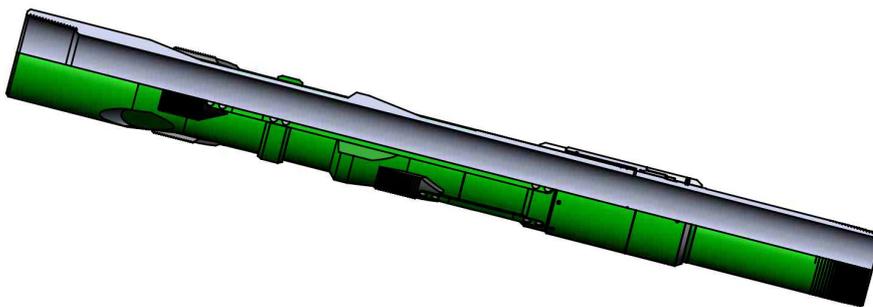
ZTC Liner Hanger is a tandem cone liner hanger that requires hydraulic pressure to activate the slips by utilizing a setting ball. The liner hanger body is manufactured from a single piece material without any welded construction. ZTC is a non rotating liner hanger.

#### Features & Benefits

- Single piece body which meets or exceed properties of the liner.
- Non-welded construction.
- Tandem cone design liner hanger.
- Hydraulically activated with adjustable setting pressure.
- Available with API and premium connection.
- Fullbore inside diameter with no restrictions.

#### Applications

- Hydraulic set liner hanger.
- Non rotatable liner applications.



## Sagatrade's Liner Systems

We have manufactured and sold over 2000 sets of liner hangers since we began developing the product range in 1999. Our Liner Systems are available in hydraulic and mechanical settings with mechanical or hydraulic releasing tools and can be configured for rotation, reaming or drill down capabilities.

Our liner equipment has been run in quite a number of countries around the world including Australia, Papua New Guinea, Pakistan, Bangladesh, India, Libya, Jordan, Philippines, Rusia, and Saudi Arabia.

STM manufacture a group of multinational highly trained service engineers available on call out basis, available to go anywhere, anytime. In addition STM maintains a large inventory of running tools and spares that are available for purchase or rental.

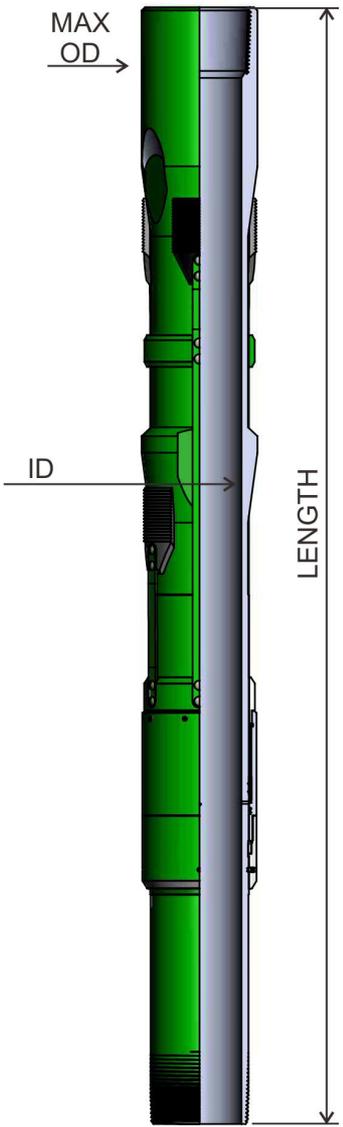
Today our commitment to innovation, quality and reliability is stronger than ever. Our portfolio includes liner packers, liner hangers, setting tools and accessories and surface cementing equipment.





**ZTC** HYDRAULIC LINER HANGER  
NON ROTATABLE

Dimensions



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	81.000
			7" 32.0-38.0 ppf	5.700		
2	5"	15.0	7" 23.0-32.0 ppf	5.875	4.276	81.000
3	7"	23.0	9-5/8" 36.0-40.0 ppf	8.375	6.366	83.750
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
		26.0	9-5/8" 36.0-40.0 ppf	8.375	6.276	
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
		29.0	9-5/8" 36.0-40.0 ppf	8.375	6.184	
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
4	9 5/8"	43.5	13 3/8" 54.5-68.0 ppf	12.000	8.755	84.000

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



## ZTR

## ROTATABLE HYDRAULIC LINER HANGER

### Overview

ZTR Liner Hanger is a tandem cone liner hanger that requires hydraulic pressure to activate the slips by utilizing a setting ball. The liner hanger body manufactured from a single piece material without any welded construction.

ZTR liner hanger is designed with pocket type slips that allow liner rotation during run in hole.

### Features & Benefits

- Single piece body that meets or exceeds properties of the liner.
- Non-welded construction.
- Tandem cone design liner hanger with pocket slips.
- Hydraulically activated with adjustable setting pressure.
- Available with API and premium connection.
- Fullbore inside diameter with no restrictions.
- Allows for rotation the liner during run in hole.

### Applications

- Rotatable liner application.
- Hydraulic set liner hanger.
- Highly deviated well application.

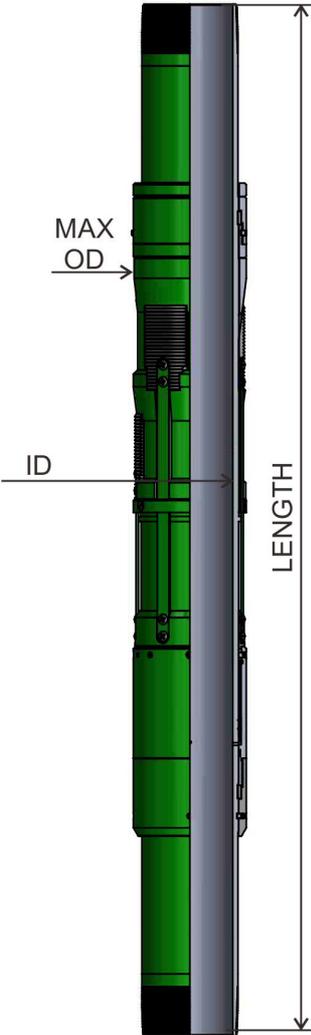




**ZTR**

**ROTATABLE HYDRAULIC LINER HANGER**

Dimensions



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	75.000
2	5"	18.0	7" 23.0-32.0 ppf	5.875	4.422	75.000
			7" 23.0-32.0 ppf	5.750		
3	7"	23.0	9-5/8" 36.0-40.0 ppf	8.375	6.366	76.000
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
		26.0	9-5/8" 36.0-40.0 ppf	8.375	6.276	
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
		29.0	9-5/8" 36.0-40.0 ppf	8.375	6.184	
			9-5/8" 40.0-47.0 ppf	8.250		
			9-5/8" 43.5-53.5 ppf	8.250		
4	9 5/8"	43.5	13 3/8" 68.0-72.0 ppf	11.875	8.549	86.000

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



**HRG****ROTATING HYDRAULIC  
LINER HANGER****Overview**

HRG Liner Hanger is a Sagatrade's premium hydraulic liner hanger with multi guided slips and has single-piece body without any welded construction. It requires hydraulic pressure to activate the slips by utilizing a setting ball.

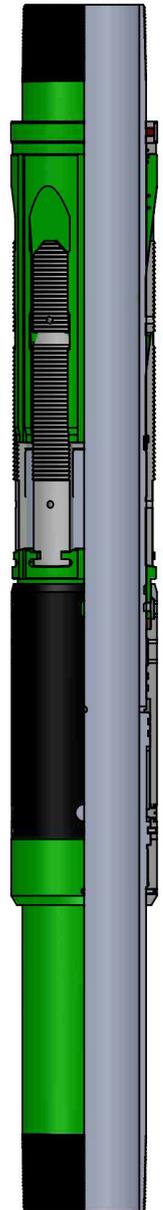
HRG liner hanger is designed with pocket type slips and also features a bearing above the cone to allow rotation the liner either during run in hole or after hanger is set whilst circulating or cementing.

**Features & Benefits**

- Single piece body meets or exceeds properties of the liner.
- Non-welded construction.
- Multi guided pocket slips.
- Hydraulically activated with adjustable setting pressure.
- Available with API and premium connection.
- Fullbore inside diameter with no restrictions.
- Allows for rotation of the liner during run in hole and cementing.
- Features a locking feature to prevent premature set.

**Applications**

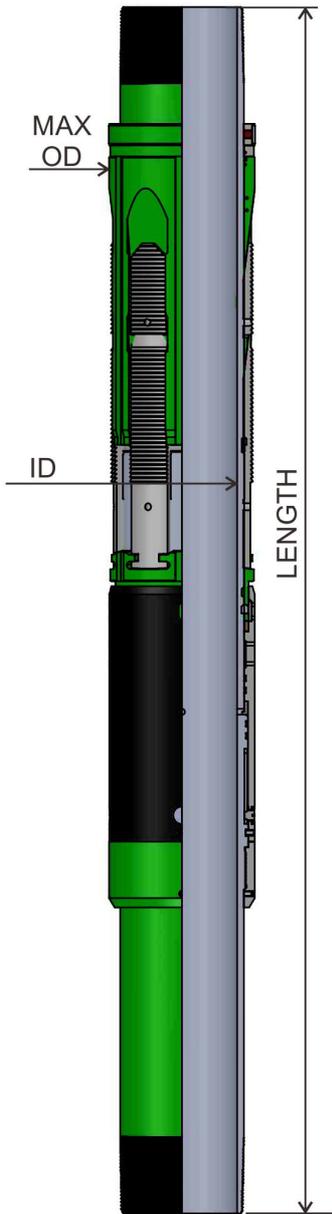
- Rotating liner during run in hole and cementing by utilizing the HRT model liner hanger running tools.
- Hydraulic set liner hanger.
- Highly deviated well applications.



**HRG**

**ROTATING HYDRAULIC LINER HANGER**

**Dimensions**



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	7" 23.0-26.0 ppf	5.875	4.000	55.100
2	5"	18.0	7" 23.0-26.0 ppf	5.984	4.276	55.500
3	7"	23.0	9-5/8" 40.0-47.0 ppf	8.250	6.366	68.900
			9-5/8" 43.5-53.5 ppf	8.250		
		26.0	9-5/8" 40.0-47.0 ppf	8.250	6.276	
			9-5/8" 43.5-53.5 ppf	8.250		
		29.0	9-5/8" 40.0-47.0 ppf	8.250	6.184	
			9-5/8" 43.5-53.5 ppf	8.250		

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. please contact our sales representative.



## RPF-A RUNNING SUB WITH RLC PROFILE SUB

### Overview

RPF-A is a Profile Sub that is installed on top of the XPH top liner packer. RPF profile sub has running nut on the top side to connect with the setting tool (TNG model), and has a profile in the inside to house the retrievable pack of bushing.

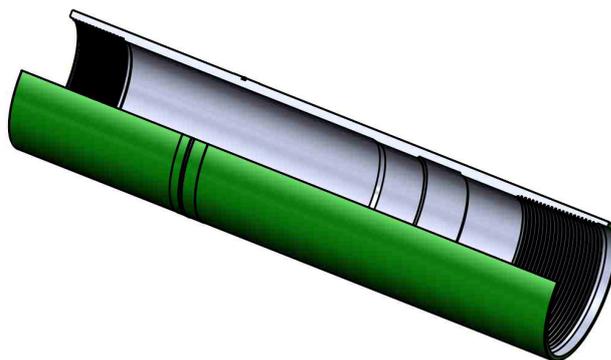
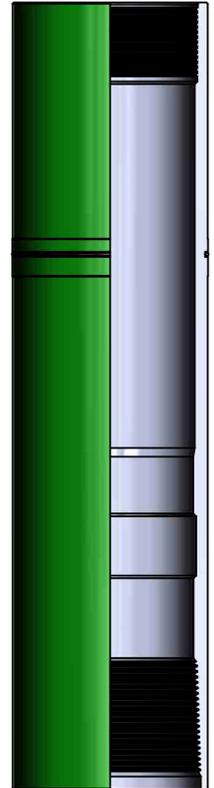
The RPF-A profile sub is a critical part that functions to connect the setting tool and the liner, it's made from high strength material.

### Features & Benefits

- Single piece body that meets or exceeds properties of the liner.
- Has fullbore ID equal to or larger than API casing drift diameter.
- Come with running nut.
- Contains profile for retrievable pack of bushing.

### Applications

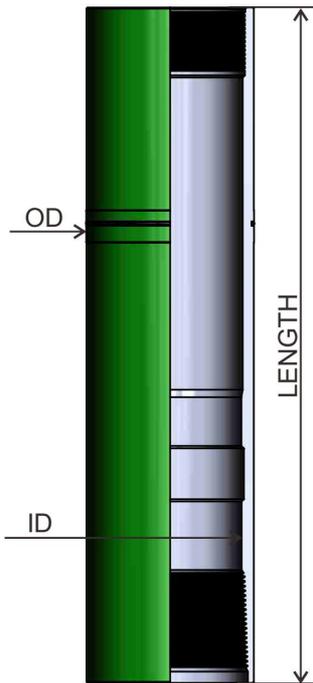
- Running with liner top packer (XPH Model) & liner hanger setting tool (TNG Model).
- Used in liners that do not require rotation during run in hole.





**RPF-A** RUNNING SUB  
WITH RLC PROFILE SUB

Dimensions



No.	Size	Casing Weight (lb/ft)	OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	5.240	4.000	24.409
2	5"	15.0	5.240	4.380	24.409
		18.0			
3	7"	23.0	7.468	6.275	29.875
		26.0		6.188	
		29.0		6.096	

- Standard API grades material L80, P110, & Q125. Other grades may be available or can be procured, please consult with Sagatrade
- For other sizes or special customer application. please contact our sales representative.



## RPG SETTING SLEEVE

### Overview

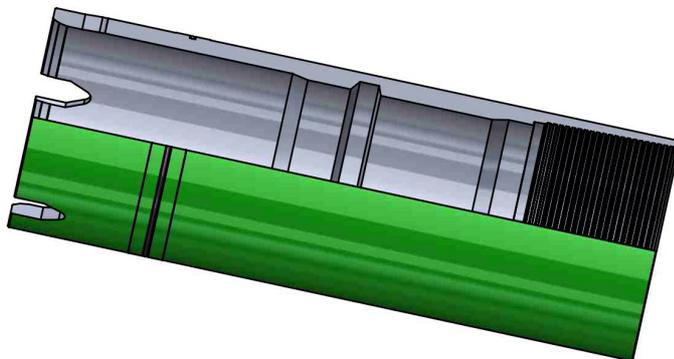
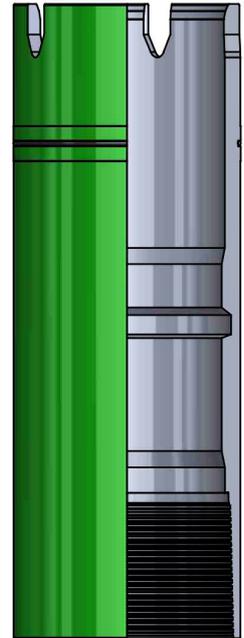
RPG is a setting sleeve that is installed on top of the XPG or XPG2 top liner packer. RPG setting sleeve has clutch profile on the top to transmit rotation from the setting tool and has profile inside of the body to connect with collet on the HRT setting tool. The RPG setting sleeve is a critical part that functions to connect between setting tool and the liner and is manufactured from high strength material.

### Features & Benefits

- Single piece body that meets or exceeds properties of the liner.
- Has ID larger than API casing drift diameter.
- Has clutch profile on the top for rotation during run in hole and/or cementing after hanger is set.
- Features profile for HRT running tool collet.

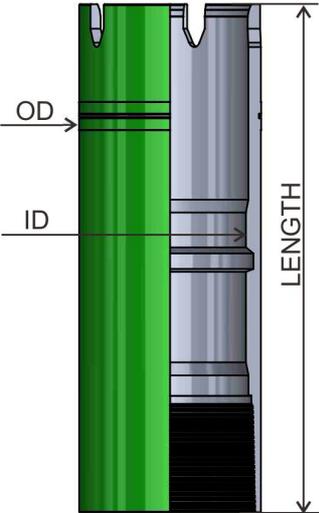
### Applications

- Running with top liner packer (XPG or XPG2 Model) & liner hanger setting tool (HRT Model).
- For rotating liners during run in hole and/or cementing.



**RPG** SETTING SLEEVE

Dimensions



No.	Size	Casing Weight (lb/ft)	OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	5.240	4.378	19.685
2	5"	13.0	5.240	4.378	19.685
		18.0			
3	7"	26.0	7.484	6.291	19.685
		29.0			

- Length shown in the table with LTC & VAGT, other connections maybe have different value depending on blanking dimensions of connections type.
- Standard API grades material L80, P110, & Q125. Other grades may be available or can be procured, please consult with Sagatrade.
- For other sizes or special customer application. Please contact our sales representative.





## LWV LINER SWIVEL

### Overview

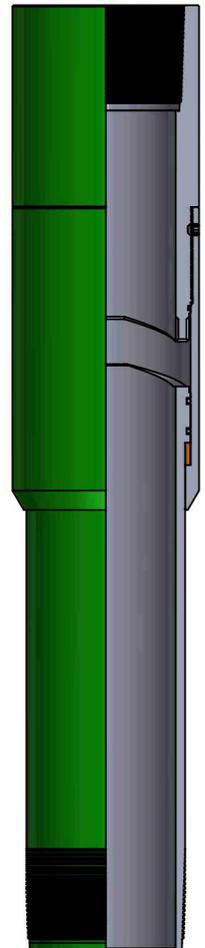
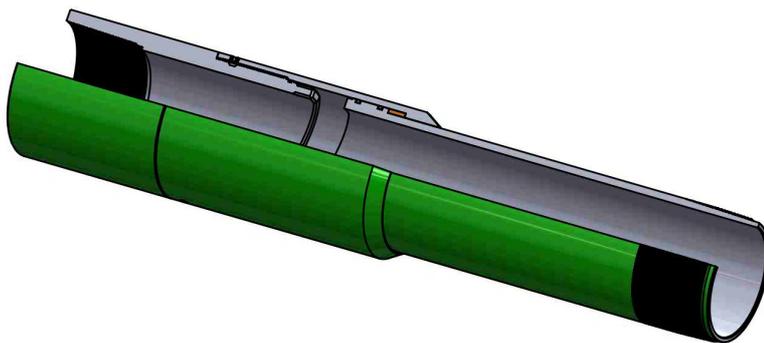
LWV Liner Swivel is used with Sagatrade's mechanical set liner hanger that requires rotation to set the liner hanger. Liner swivel allows rotation of the liner hanger without rotate the full liner string. The LWV swivel features a clutch feature that engages when set down weight is applied disengages when the liner is in tension.

### Features & Benefits

- Full bore ID that equal or larger than API drift casing.
- Has clutch feature for easy release setting tools.
- Equivalent to or exceeds properties of the liner.

### Applications

- Running with mechanical liner hanger.
- Applied set down weight/tension to activated/deactivated clutch feature.





## TYE TIE BACK SLEEVE

### Overview

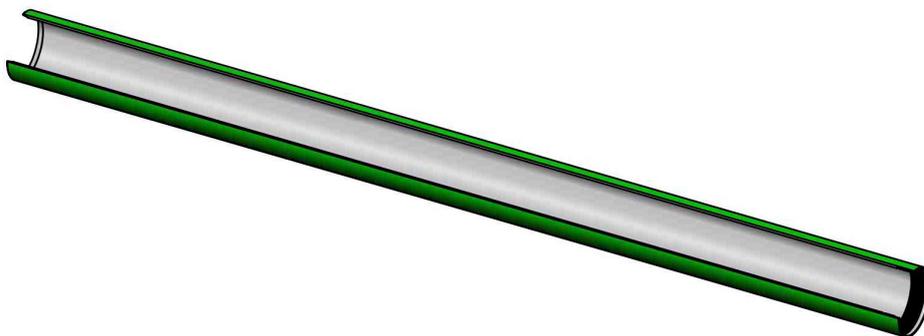
TYE Tieback Sleeve can be used as a sleeve to transfer compression force from the running tools to set integral liner top packer that is run with the liner hanger assembly. It also functions as a tieback receptacle or liner top extension for remedial operations. Sagatrade's tie back sleeve provides a high integrity precision honed seal bore and is available in various lengths upon request

### Features & Benefits

- Designed with a chamfer on the top ID of tieback to facilitate entry of wireline and drilling tools.
- Precision honed ID that allows seating of tie back seal or tie back packer with high integrity.
- Bottom thread features lock screws to prevent tie back sleeve from backing out when liner is rotated during running in hole.
- As cover of running tool assembly during run in hole.
- Available in various lengths from 6ft to 20ft.

### Applications

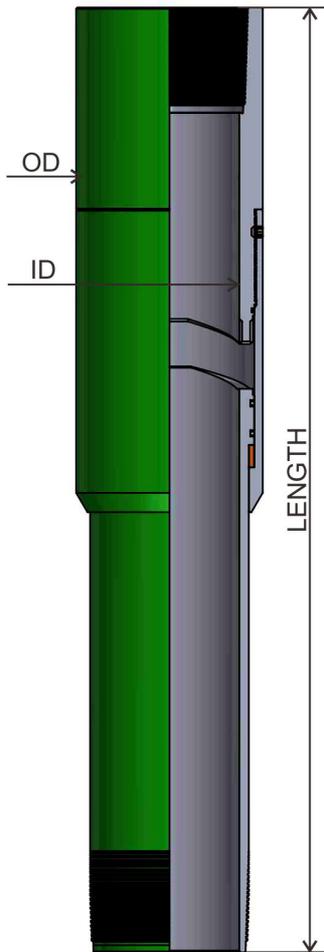
- Transfer compression force to set integral top liner packer.
- To accommodate tieback seal for remedial operation.





**LWV** LINER SWIVEL

Dimensions



No.	Size	Casing Weight (lb/ft)	OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	5.500	4.000	32.519
2	5"	15.0	5.875	4.408	32.519
		18.0		4.275	
3	5 1/2"	17.0	6.752	4.892	32.500
4	7"	23.0	8.250	6.366	35.625
		26.0		6.276	
		29.0		6.184	
5	9 5/8"	36.0	11.752	8.917	37.500
		40.0		8.835	
		43.5		8.755	
6	16"	75.0	18.500	15.138	37.374
			18.250		
		84.0	18.500	15.024	

- Standard API grades material L80, P110, & Q125. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



## HLC HYDRAULIC LANDING COLLAR

### Overview

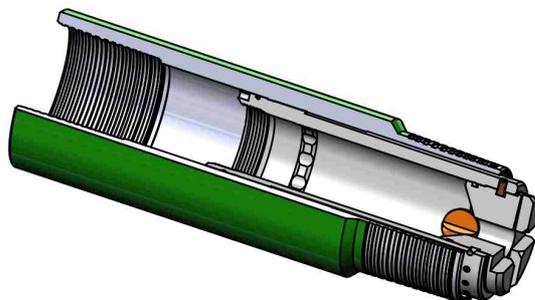
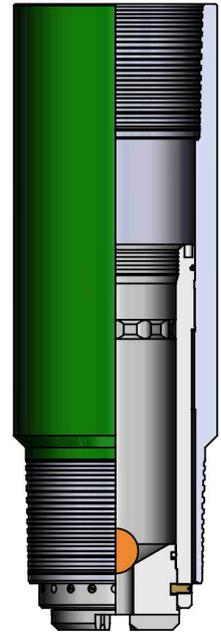
HLC landing collar is run with hydraulic liner hanger systems and provides a ball seat for seating the setting ball to enable activation of the hanger prior to releasing running tools. The ball seat is sheared out by the setting ball at a certain pre-determined pressure (adjustable) to allow full circulation for circulating and cementing operations. The landing collar also features a latch mechanism to lock and seal the liner wiper plug after cementing and displacing the liner. HLC insert and setting ball are manufactured from PDC drillable materials enabling fast drill out.

### Features & Benefits

- Designed with a ball seat that has adjustable shear out rating.
- All internal parts are PDC drillable.
- Latch mechanism with non rotating splines to lock and seal liner wiper plug and enable fast drill-out.
- Holds pressure from top and bottom once plug are seated.
- Provides positive pressure indication when liner wiper plug lands.
- Shear pressure is easily adjusted by removing and adding shear screws without need to remove insert bushing from body.

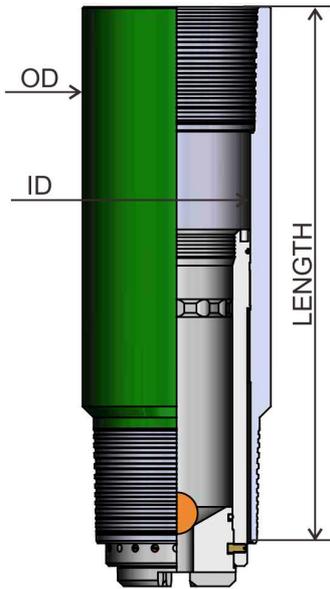
### Applications

- Can be run with all types of hydraulic liner hanger systems.
- Receptacle for Sagatrade's liner wiper plug for cementing operations.



**HLC** HYDRAULIC LANDING COLLAR

Dimensions



No.	Size	Casing Weight (lb/ft)	OD (Inch)	Drill Out ID (Inch)	Length (Inch)
1	4 1/2"	11.6	5.050	4.000	15.000
		12.6			
		13.5			
2	5"	15.0	5.507	4.408	15.000
		18.0			
3	7	23.0	7.874	6.350	16.000
		26.0			
		29.0			
4	9 5/8"	43.5	10.371	8.770	19.000
		53.5		8.549	

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. please contact our sales representative.



## DLC DRILLABLE LANDING COLLAR

### Overview

DLC landing collar is used for mechanical or hydraulic liner hanger. DLC landing collar is run with hydraulic liner hanger when the seating ball to activated the liner piston and slips is moved to running tool.

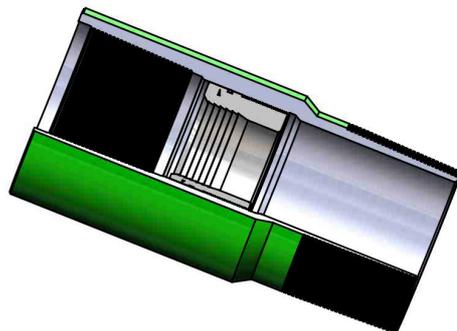
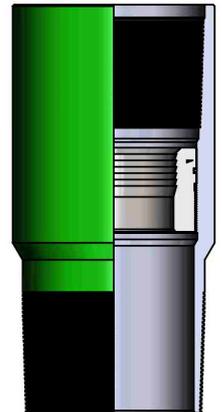
The landing collar features a latch mechanism to lock and seal the liner wiper plug after cementing operation and enables fast drill-out.

### Features & Benefits

- All internal parts are PDC drillable.
- Latch mechanism to lock and seal liner wiper plug and enable fast drill-out.
- DLC inside diameter is same as liner once insert bushing is drilled out.
- Holds pressure from top and bottom once plugs are seated.
- Provide positive pressure indication when the liner wiper plug lands.

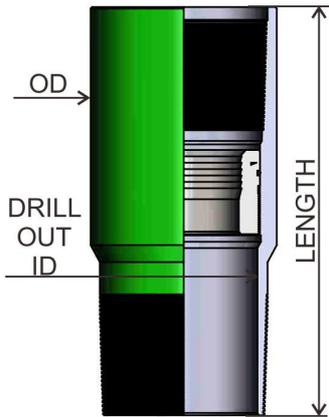
### Applications

- Can be ran with all type mechanical and hydraulic liner hanger.
- Run with Sagatrade liner wiper plug for cementing operations.



**DLC** DRILLABLE LANDING COLLAR

Dimensions



No.	Size	Casing Weight (lb/ft)	OD (Inch)	Drill Out ID (Inch)	Length (Inch)
1	4-1/2"	11.6	5.050	4.000	15.000
		12.6			
		13.5			
2	5"	15.0	5.507	4.408	15.000
		18.0			
3	7"	23.0	7.874	6.350	16.000
		26.0			
		29.0			
4	9 5/8"	36.0	10.625	8.921	17.500
		43.5			
		36.0			

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. please contact our sales representative.



## DFL FLOAT SHOE DOUBLE VALVE DOWN JET

### Overview

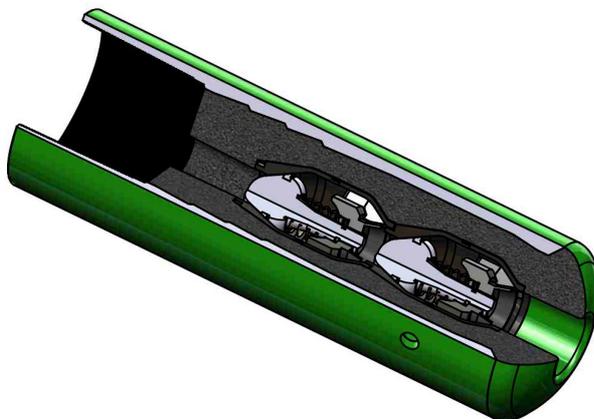
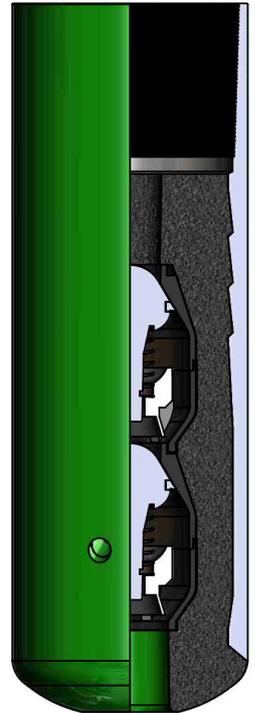
DFL Double Valve Float Shoe has a rounded cemented nose to guide the liner to the bottom. It features down jet ports for circulating and cementing the liner assembly with contingency ability to allow for circulation if liner is set on bottom. DFL Double Valve Float Shoe are equipped with two check valve to prevent back flow.

### Features & Benefits

- Integral double plunger valves that are spring loaded and prevent back flow.
- Valves are manufactured from phenolic material.
- High strength concrete with large flow area.
- All internal materials are PDC drillable.
- Prevents back flow.
- Check valve is validated as per API 10F.
- Allows circulation from the body / down jet.

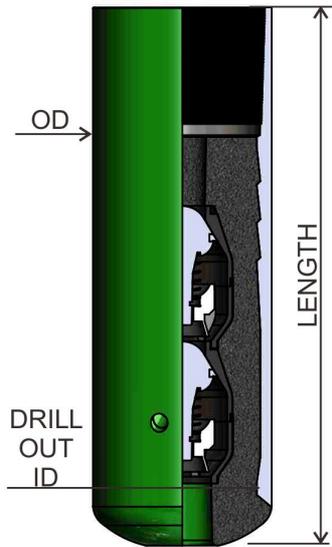
### Applications

- Can be run with mechanical and hydraulic liner hanger systems.



**DFL** FLOAT SHOE  
DOUBLE VALVE DOWN JET

Dimensions



No.	Size	Casing Weight (lb/ft)	OD (Inch)	Drill Out ID (Inch)	Length (Inch)
1	4 1/2"	11.6	5.250	4.000	19.000
2	5"	15.0	5.800	4.407	20.000
		18.0	5.572	4.276	20.000
3	5 1/2"	15.5	6.110	4.907	20.500
		17.0	6.300	4.907	20.500
4	7"	23.0	7.874	6.538	21.500
		26.0			
		29.0			
		32.0			
5	9 5/8"	36.0	10.730	8.917	27.587
		43.5	10.630	8.755	27.767

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. please contact our sales representative.



DFR

## REAMER SHOE DOUBLE VALVE DOWN JET

### Overview

DFR Double Valve Reamer Shoe has rounded aluminium eccentric nose to help guide the liner to the bottom. It is designed with down jet ports for and has the contingency ability to allow circulation through ports when liner is set on bottom.

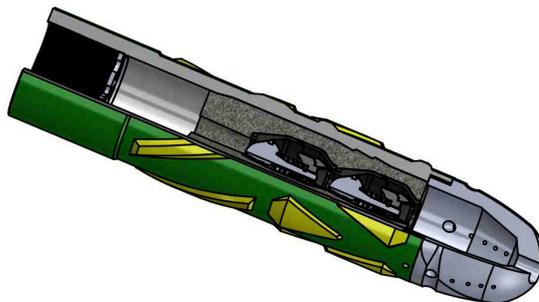
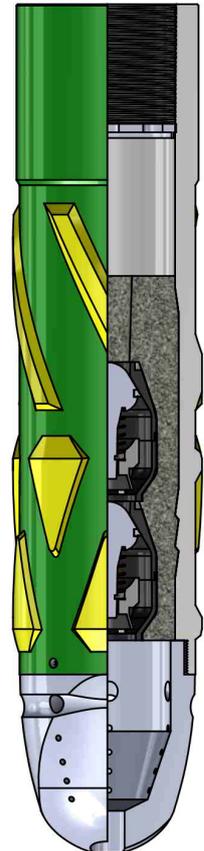
DFR Double Valve Reamer Shoe's are equipped with two plunger style check valves to prevent back flow and a screen plate on top of the concrete to catch landing collar seat and setting ball.

### Features & Benefits

- Integral double plunger valves that are spring loaded and prevent back flow.
- Valve is manufactured from phenolic material.
- High strength concrete with large flow area.
- All internal materials are PDC drillable.
- Allows circulation from the body / down jets.
- Proven eccentric guide nose for troublesome formations.
- Surge reduction enhancement.
- Dynamically positioned circulating ports for effective hole cleaning.
- Anti aggressive left hand blades minimize torque.
- Smooth body eliminates solids build up.
- Available in API & Premium connections.

### Applications

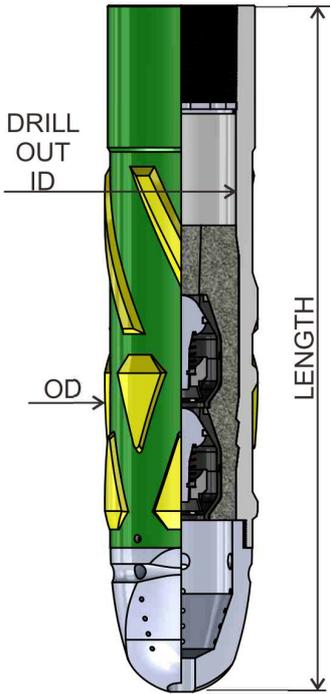
- Can be run in rotating liner application or full casing strings that require rotation during run in hole or cementing.



**DFR**

**REAMER SHOE  
DOUBLE VALVE DOWN JET**

**Dimensions**



No.	Size	Casing Weight (lb/ft)	OD (Inch)	Drill Out ID (Inch)	Length (Inch)
1	4 1/2"	9.50-15.10	5.750	4.000	25.970
2	5"	18.0	5.875	4.351	26.074
3	7"	20.0-32.0	8.250	6.351	37.311
4	9 5/8"	32.3-53.5	11.875	8.865	43.000
			12.000		
5	13 3/8"	48.0-72.0	14.750	12.578	46.000
			15.750		
			17.000		
			17.250		
6	16"	65.0-109.0	18.500	15.124	48.023
7	20"	106.0	23.000	19.000	52.500

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. please contact our sales representative.



## LWP LINER WIPER PLUG

### Overview

LWP Liner Wiper Plug utilizes shear pins to attach it to the launch profile of the setting tool. The LWP also provides a seal and latch area inside the mandrel to receive the DWP drill pipe wiper plug.

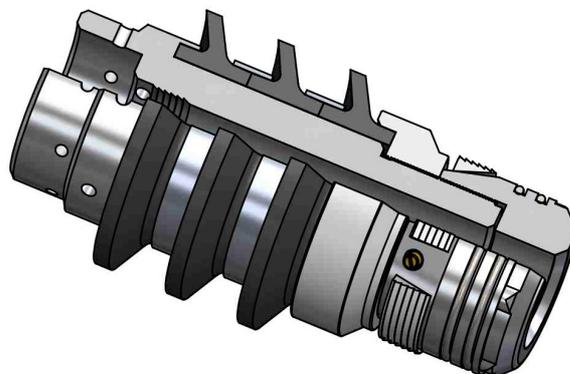
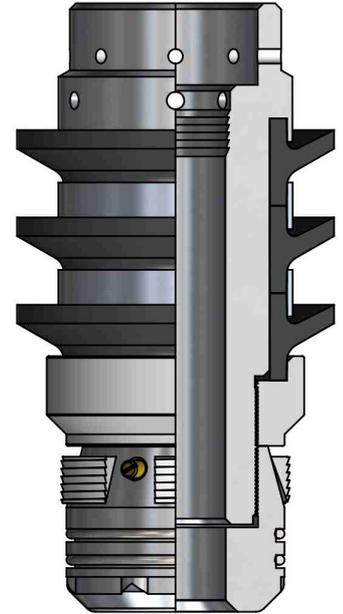
When the DWP drill pipe wiper plug latches into LWP it will shear-off from the setting tool and it then displaces and cleans the liner after cementing and latches into the landing collar.

### Features & Benefits

- Manufactured from aluminium and nitrile rubber.
- External latch to lock into the landing collar.
- Internal latch to receive and latch DWP drill pipe wiper plug.
- All material are PDC drillable.
- Shear pressure is easily adjusted by removing and adding shear screws.
- Cleans and displaces the ID of the liner string.
- Latch and non rotating spline mechanism for easy drill out.

### Applications

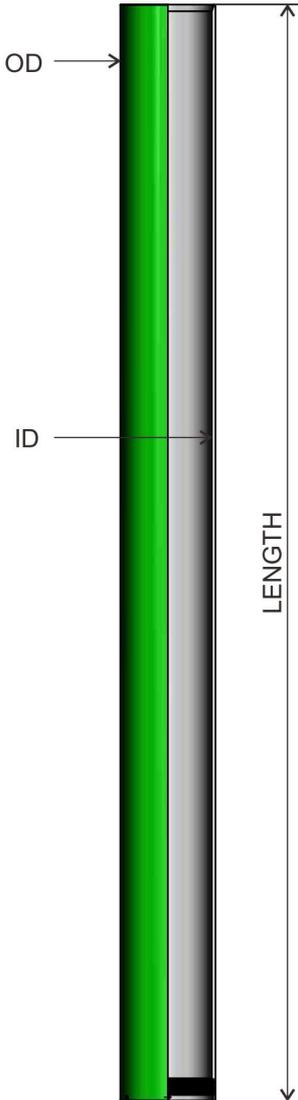
- Can be run with all type mechanical and hydraulic liner hangers.
- Run with sagatrade's drill pipe wiper plug and landing collar.





**TYE** TIE BACK SLEEVE

Dimensions



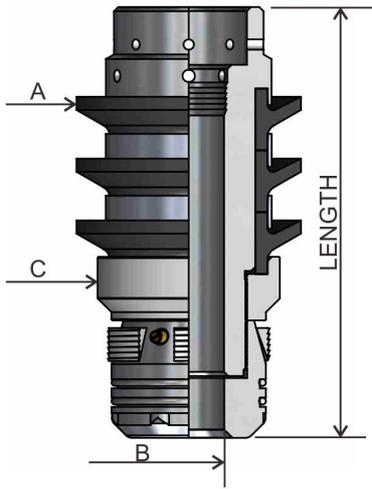
No.	Size	OD (Inch)	ID (Inch)	Length (Inch)
1	4-1/2"	5.750	5.250	76.00
				100.00
				124.00
2	5"	5.750	5.250	124.00
3	7"	8.250	7.500	76.00
				100.00
				124.00
				184.00
4	7-5/8"	8.375	7.750	118.11
5	9-5/8"	11.750	10.250	100.00
6	16"	18.400	17.425	120.00

- Standard API grades material, L80,P110, & Q125. Other grades may be available or can be procured, please consult with Sagatrade.
- For other sizes or special customer application. Please contact our sales representative.



**LWP** LINER WIPER PLUG

Dimensions



No	Size	A (Inch)	B (Inch)	C (Inch)	Length (Inch)
1	4 1/2"	4.200	1.750	3.460	15.510
2	5"	4.700	1.750	3.622	15.510
3	5 1/2"	5.300	1.750	3.622	15.510
4	7"	6.800	2.125	5.480	12.340
5	9 5/8"	9.380	2.140	7.039	15.310
6	11 3/4"	11.250	2.125	7.992	17.685

■ For other sizes or special customer application, please contact our sales representative.



## DWP DRILLPIPE WIPER PLUG

### Overview

DWP Drillpipe Wiper Plug is released from the cementing manifold after cement is pumped. It separates the cement with displacement fluid inside the drill pipe and latches into the LWP liner wiper plug.

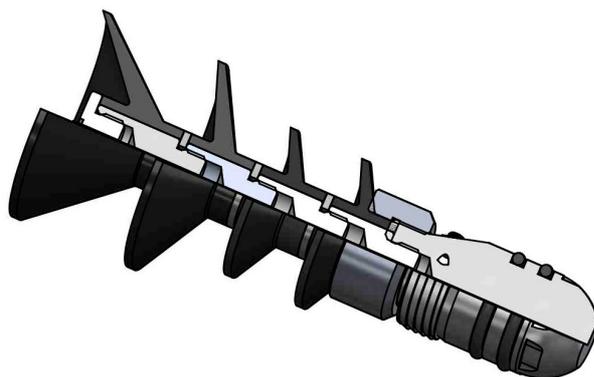
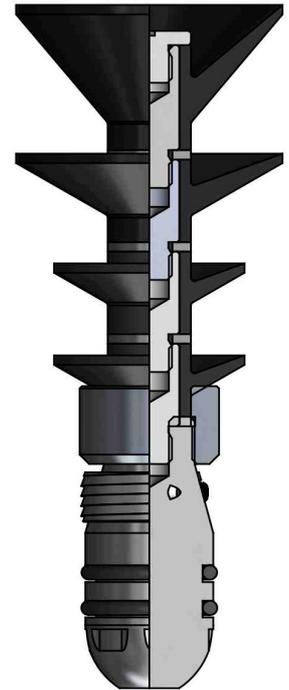
After latching into the LWP liner wiper plug, pressure will increase to shear the LWP shear pins to release LWP from the launch profile in the setting tool.

### Features & Benefits

- Manufactured from aluminium and nitrile rubber.
- External latch to lock into the liner wiper plug.
- All material are PDC drillable.
- Latch and non rotating splines for easy drill out.

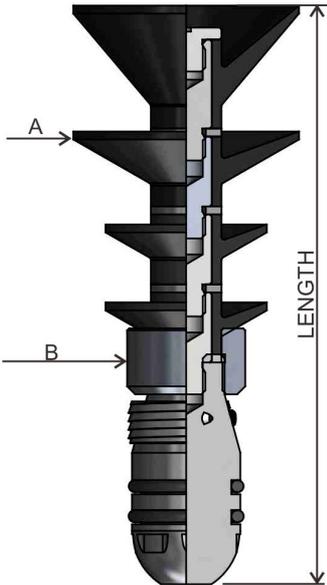
### Applications

- Can be ran with all type mechanical and hydraulic liner hanger.
- Run with Sagatrade's liner wiper plug and landing collar.



**DWP** DRILLPIPE WIPER PLUG

Dimensions



No	Size	A (Inch)	B (Inch)	Length (Inch)
1	3 1/2"	4.409"	1.772"	10.945"
2	4 1/2"	4.409"	2.244"	11.000"
3	5"	5.250"	2.244"	12.177"

■ For other sizes or special customer application, please contact our sales representative.



**XPH****INTEGRAL LINER TOP PACKER  
WITH HOLD DOWN SLIPS****Overview**

XPH liner-top packer is a packer that is suitable for most applications and is set by applying downward force through the tie back sleeve. The packer provides an effective annular seal between the liner top and previous casing and helps prevent formation breakdown, fluid losses and gas migration.

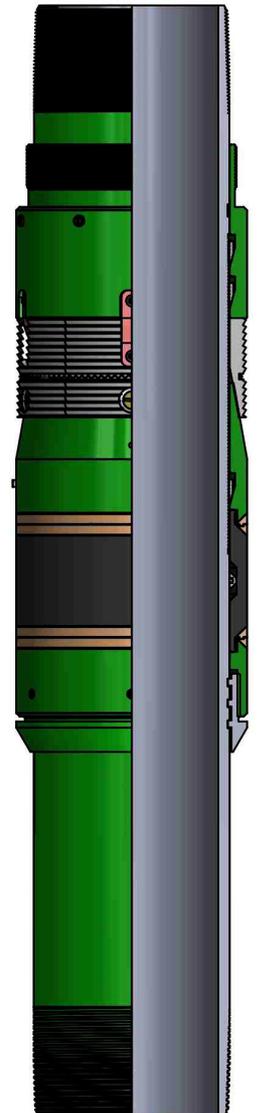
The XPH liner top packer has full bore inside diameter the same as casing ID and is generally run with sagatrade non-rotating type liner hangers.

**Features & Benefits**

- Set by mechanical downward force with adjustable shear force rating.
- Comes with pin down connection
- Features hold down slips to prevent light liner moving upwards.
- Full bore casing inside diameter.
- Provides an effective seal at the liner top.
- Prevent fluid losses, gas migration and formation breakdown.
- Ratchet body lock ring for positively and permanently locks seal element in place after packer is set.
- Run with mechanical and hydraulic set non-rotatable liner hanger.

**Applications**

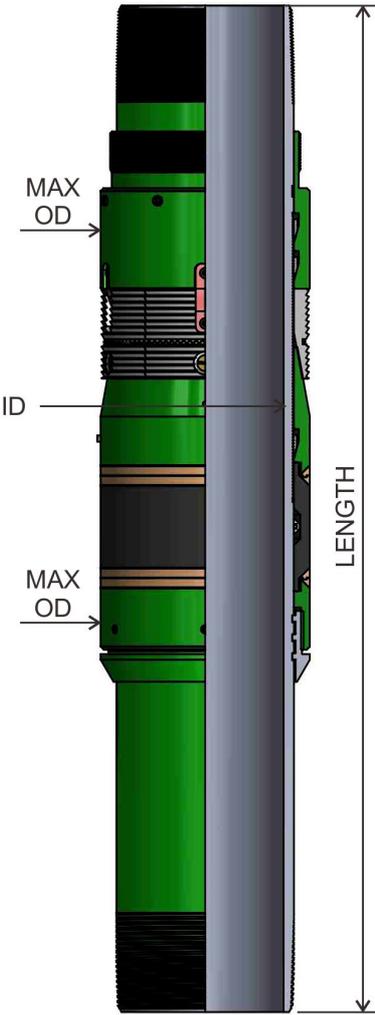
- Liner top packer in both cemented and uncemented liner applications.
- Non rotatable liner application.





**XPH** INTEGRAL LINER TOP PACKER WITH HOLD DOWN SLIPS

Dimensions



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	4 1/2"	11.6	7" 23.0-29.0 ppf	5.875	4.000	40.550
		13.5	7" 23.0-29.0 ppf	5.875	3.920	40.550
2	5"	15.0	7" 23.0-29.0 ppf	5.875	4.407	40.550
3	7"	23.0	9 5/8" 36.0-40.0 ppf	8.375	6.366	40.000
			9 5/8" 40.0-47.0 ppf	8.250	6.366	40.000
			9 5/8" 43.5-53.5 ppf	8.250	6.366	40.000
		26.0	9 5/8" 36.0-40.0 ppf	8.375	6.275	40.000
			9 5/8" 40.0-47.0 ppf	8.250	6.275	40.000
			9 5/8" 43.5-53.5 ppf	8.250	6.275	40.000
		29.0	9 5/8" 36.0-40.0 ppf	8.375	6.183	40.000
			9 5/8" 40.0-47.0 ppf	8.250	6.183	40.000
			9 5/8" 43.5-53.5 ppf	8.250	6.183	40.000
4	9 5/8"	36.0	13 3/8" 61.0-72.0 ppf	11.75	8.897	45.000

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade.
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



**XPJ****INTEGRAL LINER TOP PACKER  
WITH HOLD DOWN SLIPS****Overview**

XPJ liner-top packer is a packer that features a profile sub inside the mandrel for the retrievable pack of bushing. The top of the packer connects to the running tools. The packer is set by applying downward force through the tie back sleeve and provides an effective annular seal between the liner top and previous casing and helps prevent formation breakdown, fluid losses and gas migration.

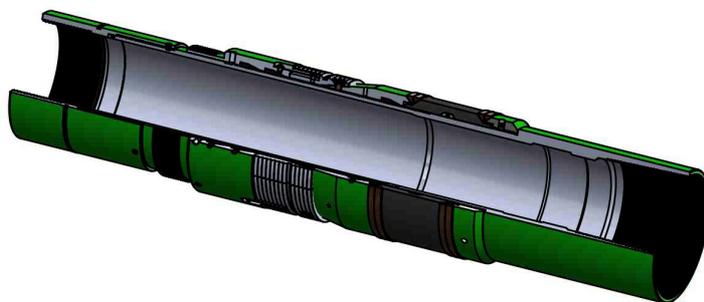
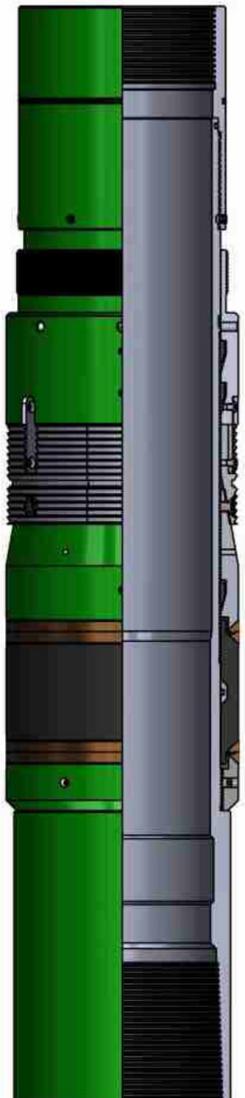
The XPJ liner top packer is run with sagatrade non rotatable type liner hangers.

**Features & Benefits**

- Set with mechanical downward force with adjustable shear force rating.
- Has integral profile for retrievable pack of bushing.
- Comes with box down connection.
- Features hold down slips to prevent lighth liner from moving upwards.
- Provides an effective seal at the top liner.
- Prevent fluid losses gas migration and formation breakdown.
- Ratchet body lock ring for positively and permanently locking seal element in place after packer is set.
- Run with hydraulic or mechanical set non-rotatable Liner Hanger.

**Applications**

- Liner top packer in both cemented and uncemented liner applications.
- Non rotatable liner application.

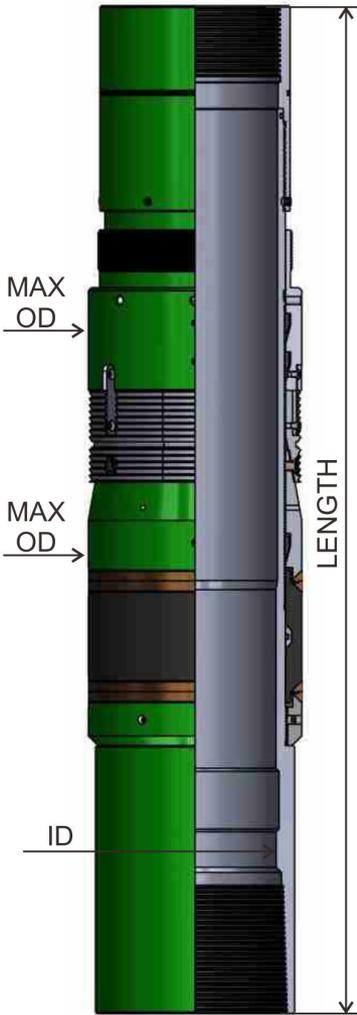




**XPJ**

**INTEGRAL LINER TOP PACKER WITH HOLD DOWN SLIPS**

Dimensions



No.	Liner Size	Liner Weight (lb/ft)	Previous Casing	Max OD (Inch)	ID (Inch)	Length (Inch)
1	5"	18.0	7" 23.0-29.0 ppf	5.875	4.000	37.170
2	7"	23.0	9 5/8" 36.0-40.0 ppf	8.375	6.250	39.250
			9 5/8" 40.0-47.0 ppf	8.250	6.250	
			9 5/8" 43.5-53.5 ppf	8.250	6.250	
		26.0	9 5/8" 36.0-40.0 ppf	8.375	6.173	
			9 5/8" 40.0-47.0 ppf	8.250	6.173	
			9 5/8" 43.5-53.5 ppf	8.250	6.173	
29.0	9 5/8" 36.0-40.0 ppf	8.375	6.173			
	9 5/8" 40.0-47.0 ppf	8.250	6.173			
	9 5/8" 43.5-53.5 ppf	8.250	6.173			
3	7 5/8"	29.7	9 5/8" 40.0-47.0 ppf	8.375	6.765	40.000
		33.7				

- Standard API grades material K55, L80, & P110. Other grades may be available or can be procured, please consult with Sagatrade
- ID & Length shown in the table with Buttress Connection, other Connections maybe have different value depending on blanking dimensions of connection type requested.
- For other sizes or special customer application. Please contact our sales representative.



**XPG**

## INTEGRAL LINER TOP PACKER WITH ROCKER ARM SLIPS

### Overview

XPG liner-top packer is a high performance packer that is suitable for most applications. It has a profile sub inside of the mandrel for retrievable pack of bushing and also features rocker arm type pocket slips. The packer is set by applying downward force through the tie back sleeve and provides an effective annular seal between the liner top and previous casing preventing formation breakdown, fluid losses and gas migration. The XPG liner top packer compatible with all Sagatrade's liner hanger types.

### Features & Benefits

- Set by mechanical downward force with adjustable shear force rating.
- Has profile sub inside the mandrel for retrievable pack of bushing.
- Comes with pin down connection.
- Features rocker arm pocket slips to prevent light liners moving upward.
- Pocket slips type allow the packer to run in highly deviated wells and most liner application.
- Provides an effective seal at the liner top.
- Prevent fluid losses, gas migration and formation breakdown.
- Ratchet body lock ring for positively and permanently locks seal element in place after packer is set.

### Applications

- Liner top packer in both cemented and uncemented liner applications.
- Rotating, rotatable and non rotating liner application.
- Suitable for highly deviated wells.

