Puyang Zhongshi Group Co.,Ltd





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Cementing Tools Brochure



Restructured from SINOPEC in 1997, Puyang Zhongshi Group Co., Ltd has 20 years manufacturing experience of Petroleum Machinery Products till now, we have competitive prices of our main products of Casing Accessories like Bow Spring Centralizer, Solid Rigid Centralizer, Float Equipment, Cementing Plug etc.

We have 9 factories, more than 500 employees and many kinds of production equipments.

We have certificates of API 5CT,6A,10D,11AX,11E, ISO 14001 and 9001.

With 15 years exporting experience, we have exported to more than 30 countries such as America, Canada, Russia, Venezuela, Columbia, Thailand, Indonesia, UAE, Saudi Arabia, Kazakhstan etc.





API >>> Certificate











ISO >>> Certificate



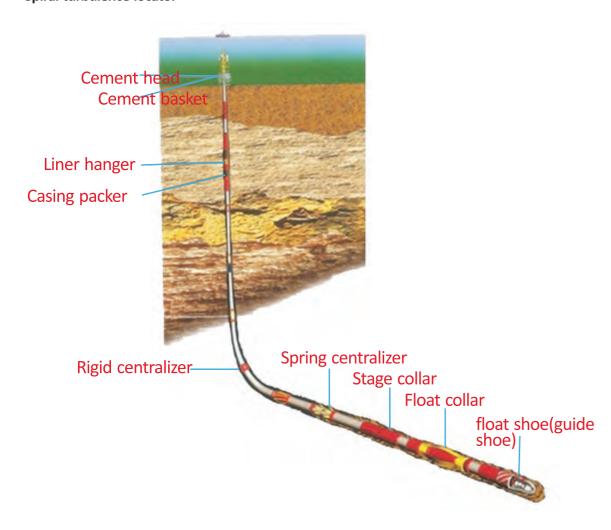








- Cement head
- Circulating sub
- Drilling liner hanger
- Casing packer
- Stage collar
- Float collar
- Float collar and float shoe
- Guide shoe
- Centralizer
- Stop collar
- Cement plug
- Cement basket
- Spiral turbulence locator





CASING >> > Centralizer

Casing Centralizer is an essencial auxiliary tools in the process of runing casing of gas and oil explore, it plays an important role for cementing quality, ensure the safety production, and prolong the life of well.

Features:

- **■** Spring Centralizer
- Semi-rigid Centralizer
- Rigid Centralizer
- **■** Roller Centralizer
- **■** Composite Centralizer
- **■** Hydraulic Centralizer





SPRING >>> Centralizer

Hinged bow spring centralizer is a traditional processed and economic centralizer, this kind of centralizer is used in general vertical or slightly deviated wells. In the past, this kind of bow spring centralizer is with the highest restoring force and the lowest starting force, so they are wildey used in the drilling or cementing job, but now it is not the highest restoring force bow spring centralizer. It is simple way to increase the restoring force according to bow height.





TURBULENT >> > Spring Centralizer



- With the advantages of spring centralizer
- The spinning disk on the centralizer string can workclosely with casing to form a whirl channel to improve the efficency of cement slurry displacement



SINGLE PIECE >>> Centralizer

API single piece centralizer performs satisfactorily in open hole as well as cased hole. These high quality product, developed to meet and exceed API 10D specifications for using in highly demanding downhole conditions. Single piece centralizer combines the highest restoring force with zero start force and zero running force. The single piece centralizer is used to position the casing in the center of the wellbore in vertical deviated and horizontal wells.

The single piece centralizers are available in size 4-1/2" to 20". Any special sizes or combination can be available on requirement.





OFFSET BOW >>> Spring Centralizer



The offset bow is a robust, ultra-high-strength, one-piece construction bow spring centralizer with no weak points, such as hinges or mechanical interlocks and with the flexibility to absorb both axial and radial loading. The offset bow UROS shows significant reduction on initial insertion forces as well as substantial reduced running forces through the previous set casing. Once through this compressed stage the unit will revert to gauge, maximizing stand-off with zero drag.



SOLID RIGID >> > Centralizer

Spiral vane steel solid rigid centralizers are developed to meet the need for better cementing in high deviated and horizontal well. Spiral vane steel solid rigid centralizers are designed to provide optimum flow area. The 360degrees overlapping solid vane provides maximum wall contact and fluid swirl. Reduced flow area between the spiral blades produces a vortex motion of the fluids for more fluid velocity with direction. The 30-degree slope of the vane end reduces drag and aids the casing in reaching TD.







ROLLER >>> Centralizer

Roller centralizers are mainly used for big high Roller, high deviated wells and horizontal wells, to centre casings. Roller Centralizers can also remove wellbore cake and improve mud replacement efficiency etc. Roller Centralizers provide superior wear resistance and have been proven to remain functional throughout the life of the well and can aid in casing/tubing retrieval.

Roller Centralizers are available in sizes 4½" to 20". Any special sizes are available on request.





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COMPOSITE >> > Centralizer

The composite centralizer is used during running and cementing operations to centralize casing.

Made of advanced composite, the onepiece centralizer has a low coefficient of friction, it is heat resistan which is highly durable and greatly enhances cementing operations.





PRESET FORCE >> > Centralizer

- With the advantages of rigid and semi-rigid centralizer, suitable for irregular well bore.
- The centralizer strip can deformed when passing through the necking down string, it easy to let casing go through.
- The force of centralizer strip can preset according to the requirement of client.











HINGED WITH >>> Bolt Type Stop Collar



Hinged Stop Collars secure placement and limits travel on attachments to casing string.

The stop collar uses a single draw bolt tightening mechanism with "hardened inserts" to grip the casing once tightened. Hinged Stop Collar is designed to latch on the casing pipe without having to be slipped on at the end of the casing pipe allowing quick and easy installation.

On locking it can be tightened for a holding force upto 1000 % of the centralizer starting force as per API 10D.

The locking mechanism is at 180 degrees of the hinge.

This design does not make any marks or indentations on the casing. This style stop collar is available in 4-1/2in thru 20in.



Slip on set screw stop collar ring is a one-piece stop collar. The outside ends of these heavy duty stop collar are generally tapered to a degree(single piece develled/double develled) which helps to hold the casing centralizer and avoid the ends to hit the Bows / Vanes when the casing centralizers are placed over them. This kinds of set screw stop collar is recommended for small hole operation

It is used when holding force requirement is very high.

The Slip on Set Screw Stop Collar are available in sizes 4-1/2" to 20".





RECIPROCATING >> > Wellbore Wipers

These wipers remove excess wall cake to improve cement to-formation bonding by producing a wiping action during running and reciprocation. A continuous, interlocking and overlapping loop of tempered-steel wire cable is laced into the hinged collars. A bolt holds the wipers in position and eliminates the need for stop collars. A hinged version is also available.





CEMENTING>> > Basket





Cementing basket is a isolation device used in the process of suspending the sealing cement segments to prevent the occurrence of displacement and settlement between the grout and drilling liquid. It amounted on the bottom of the suspend sealing segment. It used to support the grout in the annular, it can prevent or reducing the loss of the grout and protect the weak stratum structure, in order to prevent the excessive weight of the cement segment static pressure. It usually mounted on the casing string on the above of weak stratum structure, but it also used on the stage cementing and surface cementing, each fin of the basket can provide maximum flexibility and fluit channel while maintaining optimized support feature .





- The body is made of high quality alloy steel, high mechanical strength.
- Compact structure, interior material are made of aluminum alloy, better drillability.
- Used spring return check valve, preventing grout return.
- Suitable for big slope well and horizental well and other kinds of well.
- Temperature resistance can reach 180°C,erosion resistance, better sealing.
- Better reverse pressure-bearing ability, exceed API RP10F III c standard.
- Special materials are available to suit specific well conditions.





	Paren	Paremeter					Paremeter					
Spec.	Length mm	Max. OD mm	Min.ID mm	Water hole Diameter mm	Positive pressure-bearing mpa	Reverse pressure- bearing MPa	Length mm	Max. OD mm	Min. ID mm	Water hole Diameter mm	Positive pressure- bearing mpa	Reverse pressure- bearing MPa
5"	512	141.3	111	60	25	30	400	141.3	111	60	25	30
5-1/2"	497	153.7	121	60	25	30	427	153.7	121	60	25	30
7"	504	194.5	157	60	30	35	432	194.5	157	60	25	30
9-5/8"	408	269.88	221	70	25	30	374	269.88	221	70	25	30
10-3/4"	393	298.45	250	70	25	30	356	298.45	250	70	25	30
13-3/8"	423	365.1	319	70	25	30	400	365.1	319	70	25	30

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CEMENT SPRING TYPE >>> Float Collar Float Shoe

■ Check valve is made of phenol powder which interal suppressed at high temperature and pressure, can withstand 70Mpa pressure and 205 °C temperature.







The spring is made of tin brone alloy, good elasticity,can
withstand 30000 times elastic compression, easy drillability.

	Pareme	eter					Paremeter					
Spec.	Length mm	Max. OD mm	Min.ID mm	Water hole Diameter mm	Positive Pressure- Bearing Mpa	Reverse pressure- bearing MPa	Length mm	Max. OD mm	Min. ID mm	Water hole Diameter mm	Positive Pressure- Bearing Mpa	Reverse pressure- bearing MPa
5″	512	141.3	111	60	25	30	400	141.3	111	60	25	30
5-1/2"	497	153.7	121	60	25	30	427	153.7	121	60	25	30
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10-3/4"	393	298.45	250	70	25	30	356	298.45	250	70	25	30
13-3/8"	423	365.1	319	70	25	30	400	365.1	319	70	25	30

STAB IN TYPE >>> Float collar (Inner plug seat)

For big size casing interpolate cementing process designed cementing float collar. It designed with sealing plug seat,matching with inserted sleeve which connected with drilling pipe to achieve interpolation cementing technology.

Features:

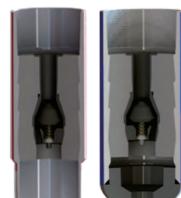
- Needn't big size cementing plug.
- Reducing the pollution by cement contacts.
- Reducing the drilling plug time as usual.
- Can drill by cone or PDC drill.
- Matching with dedicated inserted sleeve to use.
- All kinds of special thread are available.

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er			
Max. OD	Min. ID	Water hole Diameter	Positive Pressure- Bearing

	Paremeter						Paremeter					
Spec.	Length mm	Max. OD mm	Min.ID mm	Water hole Diameter mm	Positive Pressure- Bearing Mpa	Reverse Pressure- Bearing Mpa	Length mm	Max. OD mm	Min. ID mm	Water hole Diameter mm	Positive Pressure- Bearing Mpa	Reverse pressure- bearing MPa
9-5/8"	408	269.88	221	70	25	30	374	269.88	221	70	25	30
10-3/4"	393	298.45	250	70	25	30	356	298.45	250	70	25	30
13-3/8"	423	365.1	319	70	30	35	400	365.1	319	70	25	30



SELF FILL-UP TYPE >>> Float Collar Float Shoe



- It can automatic and adjustable filling when put the casing pipe, apparently reducing the pressure acting on the bottom.
- This type automatic self fill-up type float collar and float shoe through the transformation of a single valve to finish the automatic filling. Setting a steel ball groove on the valve rod,loading the ball before going down, the ball stick in the body, so that the spring can not be reset, keeping the upper and lower portion of the valve is transparent. Thus, The liquid of the well can enter the casing pipe which on the top of float collar and float shoe in the process of going down well.keeping the balance pressure inside and outside the casing. When there is downward pressure on the valve rod, to make ball fall, spring return, converted to ordinary float collar float shoe.



A rubber cementing plug used to separate the cement slurry from other fluids, reducing contamination and maintaining predictable slurry performance.

Cementing plugs are manufactured of graded rubber that is fused upon a composite or Aluminum core. These plugs are completely PDC drillable. Operating range of temperature with Aluminum core is up to 200 degree Fahrenheit.Plug can be ordered for higher operating temperature and operation in either synthetic or mud fluids.Available in 4 1/2" to 20 "sizes + any special sizes.









Designed for problematic wells where reciprocation and/or rotation of the casing is anticipated to ream the hole and land the casing to total depth (TD). Features the valve, which is API RP 5CT rated.

Standard features include aluminum eccentric nose with integral down jets, and side ports. Blades are coated with tungsten carbide cutting structure and height customized for hole size. The Reamer shoe is available in size 5-1/2"-13 3/8".



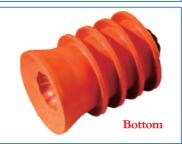
NO-ROTATING >> > Float Collar

- Designed no-rotating plug and self-rock plug improve the drilling speed. It easily to grind the plug and plug seat on the action of pressure and rotating when grinding, saving grinding time. There will not be affected in separated drilling mud and water, bumping pressure and so on.
- No-rotating spool compared with no-rotating plug, can significantly imporve drilling speed.



NON-ROTATING >> > Cementing Plug





These series of cementing plug have reinforced locking teeth built into the plugs, which lock together between the plugs and the float equipment to eliminate rotation of the plug during drill out.

These plugs are made of Graded Rubber with Aluminum or Phenolic core inside, No other metal parts are used .

These plugs are completely PDC drillable.

Operating rage of temperature with Aluminum core is up to 200 degree Fahrenheit.

Plug can be ordered for higher operating temperature and operation in either synthetic or mud fluids.

Available sizes from 4-1/2" to 20".



GENERAL DP >> > Cementing Head

- High-strength material and high quality thread.
- Compact structure, connection simple, safety and reliable.
- High-strength body, high pressure-proof, long life.
- Union of connecting manifold can be chosen according to requirements.

Paremeter					
Spec.	Innder Dia. Where cement plug located (mm)	Length of holding cement plug (mm)	Working pressure (MPa)	Manifold connector	DP thread
3-1/2"	60	300	35		3 1/2" IF
5"	90	350	35	1502 union	4 1/2" IF
5-1/2"	90	380	35		5 1/2" FH





- High-strength material and high quality thread.
- With lifting sub, can lift pipe string.
- High pressure-bearing capacity.
- Monitoring cement plug moving.
- High pressure manifold, it is easy to operate.

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Paremeter						
Spec.	Innder Dia. Where cement plug located (mm)	Length of holding cement plug (mm)	Working pressure (MPa)	Manifold connector	DP thread	
3-1/2"	73	300	50		3 1/2" IF	
5"	108	350	50	1502 union	4 1/2" IF	
5-1/2"	115	380	50		5 1/2" FH	



INTEGRAL TYPE OVERHIGH >> > Pressure Dp Cementing Head

- High-strength material and non-welded integral type structure which can bear higher pressure.
- Indicator monitoring cement plug moving.
- High pressure manifold, it is easy to operate.

Paremeter							
Spec.	Innder Dia. Where cement plug located (mm)	Length of holding cement plug (mm)	Working pressure (MPa)	Manifold connector	DP thread		
3-1/2"	73	300	70		3 1/2" IF		
5"	108	350	70	1502 union	4 1/2" IF		
5-1/2"	115	380	70		5 1/2" FH		



SIMPLE TYPE >>> Casing Cementing Head

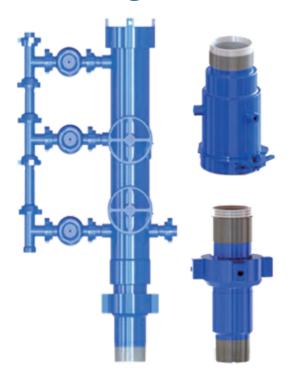
- With a cement plug top rod, can prevent the cement plug up.
- High-strength material and high quality thread.
- **compact** structure, connection simple, safety and reliable.
- Union of connecting manifold can be chosen according to requirements.
- Easy Structure, short delivery time and highly cost effective.



paremete	paremeter						
Spec.	Innder Dia. (mm)	Length of holding cement plug (mm)	Working pressure (MPa)	Type of pin	Connector		
5-1/2"	121	300	35		1502union		
7"	154	350	21		1502union		
9-5/8"	225	350	21	double	1502union		
10-3/4"	250	350	21		1502union		
13-3/8"	316	410	14.21		1502union		



QUICK MOUNTING >>> Casing Cementing Head



- High-strength material and high quality thread
- The holding space of cement plug is big enough so that it can prevent the plug being damaged by negative pressure of cementing.
- Union of connecting manifold can be chosen according to requirements.
- With a cement plug top rod, can prevent the cement plug up.
- Can choose matched high pressure manifold, it is easy to install.
- The quick mounting connector can connect with casing quickly.

Paremete	Paremeter							
	Inner Dia. Where	Length (of holding ceme	Working				
Spec.	cement	Single	Double	e plug	pressure (MPa)	Type of pin	Connector	
	located (mm)	Sirigle	Up	Down				
5-1/2"	142	400	300	300	50		1502union	
7"	181	450	305	305	50		1502union	
9-5/8"	247.6	550	330	330	35	double	1502union	
10-3/4"	276	550	360	360	35		1502union	
13-3/8"	341	600	420	420	35		1502union	

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INTEGRAL TYPE OVERHIGH >>> Pressure Cementing Head

- Be made of high quality alloy steel, good at high pressure-proof, long life.
- Integral structure design, no welding, be safety.
- Removable type union, general type.
- Indicator monitoring cement plug moving.
- Apply for many kinds of well and temperature environment.





Paremeter Inner Dia. Length of holding cement plug (mm) Where Working Type of pin cement Spec. Double plug pressure Connector plug located Single (MPa) Up Down (mm) 5-1/2" 142 400 300 300 70 1502union 7" 181 450 305 305 70 1502union 9-5/8" 247.6 550 330 330 50 double 1502union 10-3/4" 276 550 360 360 50 1502union 13-3/8" 341 600 420 420 50 1502union

CIRCULATING >> Head









Simple Type

Integral

Big Union

Clamp Type







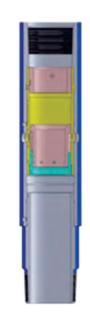
- Special bypass design solving the liquid compression between opening dart and closing plug.
- Lock ring design ensures permanently closed after completion.

Lock ring design ensures permanently closed after completion							
Paremeter							
Size	9-5/8"						
Length, mm	760						
Max.Diameter, mm	282						
Opening pressure, MPa	6-8						
Closing Pressure, MPa	8-10						
Opening Casing Diameter, mm	190.5						
DN, mm	218						
Closing plug length, mm	280						
Closing plug bowl diameter, mm	236						
Open dart length, mm	470						
Shut off plut length, mm	383						
Shut off plug bowl Diameter, mm	235						
Baffle ring ID, mm	165.6						
Baffle ring OD, mm	237						

HYDRAULIC >> > Stage Collar

- Minimum volume and easy drilling parts design.
- Special bypass design solving the liquid compression between opening dart andclosing plug.
- Lock ring design ensures permanently closed after completion.

Paremeter		
Size	51/2"7"	7"
Length, mm	930	956
Max.Diameter, mm	168	210
Opening pressure, MPa	17-18	17-18
Closing Pressure, MPa	8-10	8-10
Opening Casing Diameter, mm	87.31	114.3
DN, mm	123.03	157.48
Closing plug length, mm	267	273
Closing plug bowl diameter, mm	135	169.86
Open dart length, mm	312.74	381
Shut off plut length, mm	391.32	422.26
Shut off plug bowl Diameter, mm	139.7	173.83
Baffle ring ID, mm	71.12	77.44
Baffle ring OD, mm	153.67	200.03





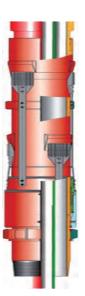


MECHANICAL >> > Drilling Liner Hanger

- Hanging casing by hoisting, forward rotating, lowing down, no need of injecting ball and holding pressure, the operation is simple.
- Be suitable for vertical well and low angle deviated hole.
- High mechanical strength, strong hanging ability.
- It no need to find the neutral point when backing off, it will be easily fall open buckle as the drill press 5~8t.







HYDRAULIC >> > Type Liner Hanger

- More Slips suitable for heavy-duty requirements.
- Be suitable for vertical well and inclined shaft cementing work.
- High mechanical strength.
- Single hydraulic control seat hanging.
- It no need to find the neutral point when backing off, it will be easily fall open buckle as the drill press 5~8t.

TOP ISOLATION >> > Type Liner Hanger

- Provide back-up packer means for the oil and gas water channeling problems exist in liner cementing.
- Packer rubber tube using ZP2020 rubber.
- Pressure ≥35Mpa, temperature 180 °C.









External casing packer is connected in the casing pipe, Using hydraulic way blowing up the rubber part of casing packer to finish complete packer. Most applied to absorption well, high pressure well, Multiple pressure formation well completion and other completion process.

- Strong adapablity, it can be used in a variety of different conditions of oil and gas wells.
- The valve system can effectively protect and accurately control the tool safety seat seal.
- Cones expansion coefficient may packer large diameter borehole.
- High temperature resistance levels, Bear big pressure difference and small residual deformation.
- In combination with other cementing tools to achieve different conditions of cementing well, effective solving to the high pressure, low pressure, leakage, back water, subsidence and other complex oil and gas well cementing problems.

Paremeter						
DN (mm)	OD (mm)	OD (mm)	Length (mm)	Sealing Length (mm)	Work Diameter (mm)	Thread
114	146	97	2760	≥950	155 ~ 241	41/2 LCSG
140	178	121	3115	≥950	188 ~ 280	51/2 LCSG
140	190	121	3115	≥950	201 ~ 314	51/2 LCSG
178	210	155	3170	≥950	220 ~ 337	7 LCSG
245	286	220	3225	≥950	303 ~ 472	95/8 LCSG



COMPRESSION TYPE >> > External Casing Packer

- Be used in all kinds of conditions deep well, ultra-deep well, directional well, horizontal well and sidetrack drilling well.
- Special solid Nitrile packer rubber can form a reliable packer segment between the casing pipe and casing pipe or between casing pipe and bare hole.
- With good temperature resistance ability, working temperature can reach 150°C~170°C.
- The pack rubber QTY is optional according to the diameter of casing pipe or bare hole.
- The solid packer rubber with high strength, small diameter is suitable for side-track well. Small bare well and all kinds of complex coditions down hole cementing and completion.
- Can provide the same inner tube wells string.



Paremeter Pareme					
DN(mm)	Max. Diameter (mm)	Diameter of packer bare hole or inner diameter of Casing pipe(mm)	Thread		
114	139.7	195.3			
140	174.6	250.8			
140	190.5	295.3	API casing thread		
178	203.2	265.1			
245	285.8	387.4			