



We Know Your Well Very Well..

PRODUCT CATALOGUE

Table of

CONTENTS ►

ARTIFICIAL LIFT SYSTEM

➤ Tubing Retrievable/Conventional Gas Lift Valve (Injection Pressure Operated).....	7
➤ Conventional Check Valve (Spring Loaded).....	8
➤ Conventional Gas Lift Mandrel	9
➤ Wireline Retrieveable Gas Lift Valve (Injection Pressure Operated)	10
➤ Wireline Retrieveable Dummy Valve	11
➤ Wireline Retrieveable Orifice Valve.....	12
➤ Wireline Retrieveable Latches.....	13
➤ Side Pocket Mandrel.....	14
➤ Chemical Injection Valve	15
➤ Running Tools	16
➤ JD Pulling Tool	17

FLOW CONTROL EQUIPMENT

➤ Type - "CF" Top No Go Nipple.....	21
➤ Type - "CR" Bottom No Go Nipple.....	22
➤ Otis Type- "CX" Selective Nipple	23
➤ Otis Type- "CXN" Bottom No Go Nipple	24
➤ Otis Type- "CR" Selective Nipple	25
➤ Otis Type- "CRN" Non-Selective Nipple	26
➤ CX", CXN, CR & CRN Lock Mandrels (Blanking Plugs)	27
➤ CX", CXN, CR & CRN Standing Valves	28
➤ CPS "CF-2 & CR-2" Equalizing Check Valves	29
➤ CPS-NE Non Elastomeric Sliding Sleeve	30
➤ CPS-CL Elastomeric Sliding Sleeve.....	31
➤ Sliding Sleeve Packoff.....	32
➤ CPS-X Running Tool	33
➤ CPS-GS Pulling Tool	34
➤ CPS-JD and JU Pulling Tool	35

COMPLETION EQUIPMENT, BRIDGE PLUG & CEMENT RETAINERS

➤ CPS-D & DA Permanent Seal Bore Packer	39
➤ CPS-F-1 & FA-1 Permanent Seal Bore Packer	41
➤ CPS-SB & SAB Hydraulic Set Permanent Seal Bore Packer.....	43
➤ CPS-FH Hydraulic Set Retrivable Packer	45
➤ CPS-HS Hydraulic Set Double Grip Retrieveable Packer	47
➤ CPS-HP Hydraulic Set Retrieveable Production Packer	49
➤ CPS-TS Tension Set Packer	51
➤ CPS-CS Compression Set Packer.....	52
➤ CPS-"CR-3" Mechanical Set Retrieveable Packer	53
➤ CPS-"IX" Mechanical Set Retrieveable Packer	55
➤ CPS-"RSB" Retrieveable Seal Bore Packer.....	57
➤ CPS-"PBR" Hydraulic Set Retrieveable Packer	59
➤ CPS-Isolation Packer	61
➤ CPS- "H" Hydraulic Setting Tool.....	62
➤ CPS- "BT" Wireline Pressure Setting Tool.....	63
➤ CPS-Pump Out Plug.....	64
➤ CPS- "T-2" On - Off Tool	65
➤ CPS-K Shear Out Safety Joint.....	66
➤ CPS-RS Rotational Safety Joint.....	67

COMPLETION EQUIPMENT, BRIDGE PLUG & CEMENT RETAINERS

➤ CPS-NR Expansion Joint	68
➤ CPS-E Rotational Expansion Joint.....	69
➤ CPS-Polished Bore Receptacle	70
➤ CPS-Tubing Swivel.....	71
➤ CPS-Anchor Latch Seal Assembly.....	72
➤ CPS-Locator Tubing Seal Assembly	73
➤ CPS-Auto Orienting Bottom Sub with Half Mule Shoe	74
➤ CPS-Seal Bore Extension.....	75
➤ Mill Out Extension	75
➤ CPS-Ball Actuating Circulating Valve.....	76
➤ Presure Actuated Circulating Valve	76
➤ CPS-E Hydrotrip Pressure Sub	77
➤ CPS-Blast Joint.....	78
➤ CPS-Perforated / Non - Perforated Spacer Tube	78
➤ CPSC-1 Tubing Anchor Catcher.....	79
➤ CPS-Bridge Plug	80
➤ CPS-Midget Bridge Plug	81
➤ CPS-Wireline Set Retrievable Bridge Plug.....	82
➤ CPS-Cement Retainer	84

LINER HANGER EQUIPMENT

➤ CPS Dovetail Hydraulic Set Liner Hanger.....	87
➤ CPS-"HS"Single / Double Core Hydraulic Set Liner Hanger.....	89
➤ CPS-MS Mechanical Set Liner Hanger	91
➤ CPS Liner Top Packer	93
➤ CPS-HS Hydraulic Release Running Tool	95
➤ CPS-Mechanical Release Running Tool	96
➤ CPS-Landing Collar	97
➤ CPS-Retrievable Pack off Bushing.....	98
➤ Swab Cup Assembly	99
➤ CPS Pump Down Plug (PDP)	100
➤ CPS Liner Wiper Plug (LWP)	100
➤ CPS-Polished Bore Receptacle	101
➤ CPS-Handling Nipple	101
➤ CPS - Junk Screen	102
➤ CPS - Seal Stinger	102
➤ CPS-Tieback Seal Nipple.....	103
➤ CPS - Float Collar	104
➤ CPS-Float Shoe	104
➤ Liner Hanger Hook – Up Drawing.....	105

CEMENTING EQUIPMENT

➤ Cementing Plug	109
➤ Float Shoe.....	110
➤ Float Collar.....	112
➤ Guide Shoe	114
➤ Reamer Shoe	115
➤ Cross Coupling Protector.....	116

ABOUT US

CPS has designed its product lines for Well Completion Equipment, Artificial Lift, Flow Control Equipment, Liner Hangers and Cementing & Casing Accessories on the basis of the five principles of "Trust, Righteousness, Propriety, Wisdom, and Courtesy".

CPS aims to become a leader in manufacturing Well Completion Equipment, Artificial Lift, Flow Control Equipment, Liner Hangers and Cementing & Casing Accessories in the Oil and Gas Industry. We at CPS aim to manufacture high quality Tools & continue to prove our products in the field.

Having a highly experienced team of engineering background engineers, and with a immensely talented management team, CPS is looking forward to establish a name in the Oil and Gas Industry.

In a span of 5 years, CPS has achieved ISO & API certification to manufacture Completion Equipment,

Conventional Gas Lift Valves, Conventional Mandrels, Wireline Gas Lift Valves, Dummy Valves, Latches, Orifice Valves, Liner Hangers, Landing Nipples, Flow Control Equipment, Cementing & Casing Accessories to meet the demands of the Industry.

CPS has invested in a well-established testing facility which includes Pressure testing, Validation of Completion equipment to V0 Levels, testing of flow control equipment, TRO testing, Aging, hydro and shelf test to validate our products to meet the stringent API requirements. Further testing of Float Equipment is carried through a uniquely designed Scada System with flow loop facility. The system is equipped to test the Float under High Temperature and High Pressure providing real well environment.



WE ARE FOCUSED ON

- Quality of Products
 - Customer Satisfaction
 - Continuous product improvement and development
- Company- Customer Relationship
- Proactive Response to Customers
 - Focus On Time Product Delivery
 - On time Customer Support



WE AT CPS ENSURE

- **QUALITY**
To Manufacture quality products compliant to international oil and gas standards
- **HEALTH**
A healthy lifestyle to all our employees by providing them with best facilities
- **SAFETY**
Trainings to our employees so that we work in a safe and accident free Environment
- **ENVIRONMENT**
Take necessary actions in order to reduce environmental impact

ARTIFICIAL LIFT SYSTEM

We Know Your Well Very Well..

TUBING RETRIEVABLE/CONVENTIONAL GAS LIFT VALVE (INJECTION PRESSURE OPERATED)

CPS 06 is a conventional (tubing retrievable) injection pressure operated gas lift valve that CPS manufactures in 1.0" and 1-1/2" O.D. This valve is basically controlled by injection gas pressure (casing pressure). The valve is installed on a conventional mandrel. The valve has a bellows assembly that

contains a nitrogen charge over damping fluid. The dome charge provides the closing force of the valve. When injection gas pressure exceeds the closing force, the bellows compress, lifting the valve stem off of the seat, allowing gas to be injected through the valve and into the tubing.

Features

- Body material in stainless steel SS304/SS 316L, 17-4PH and Monel.
- Three-ply Monel bellows.
- Mechanical stop prevents bellows over stroke.
- Viscous fluid shear dampening prevents bellow fatigue and stem Chattering.
- Tungsten carbide ball and ball stem assembly.
- Replaceable floating Monel seat (also available in tungsten carbide material)
- Silver brazed bellows connections

Valve Type & Size	Effective Bellow Area(IN ²)	Port Size (IN)	Port Area (IN ²)	Ap/Ab	1-Ap/Ab	*Rtef-(Ap/Ab)/(1-Ap/Ab)
IPO; 1.0"	0.31	3/16	0.029	0.094	0.906	0.103
		1/4	0.051	0.165	0.835	0.197
		5/16	0.079	0.255	0.745	0.342
IPO; 1.5"	0.77	3/16	0.029	0.038	0.962	0.039
		1/4	0.051	0.066	0.934	0.071
		5/16	0.079	0.103	0.897	0.114

*- Tubing Effective Factor



CONVENTIONAL CHECK VALVE (SPRING LOADED)

CPS 62 is a conventional check Valve that CPS manufactures in 1.0" and 1-1/2" O.D. The check valve is installed externally on conventional mandrels. Check dart prevent gas and fluid flow from the tubing back into the casing annulus.

An elastomer check pad is contacted first by the check dart and as differential pressure increases

a metal-to-metal contact acts as a secondary seal.

The check valve is manufactured of premium material for corrosion resistance in wells with high concentrations of H₂S and/or CO₂.

Features

- Body material in stainless steel SS304/SS 316L, 17-4PH and Monel.
- Check valve back pressure rating 5,000 PSI.
- Spring material Inconel X 750.
- Compatible with other industry standard conventional (tubing retrievable) mandrels
- Available Elastomer material Viton, Aflas and MFT.

Check Valve Type & Size	Check Valve OD	Effective Port Diameter(IN)	Top & Bottom Connection	Flow Direction
Spring Loaded; 1.0"	1.0"	5/16	1/2" NPT	Annulus to Tubing
Spring Loaded; 1.5"	1.5"	1/2	1/2" NPT	



CONVENTIONAL GAS LIFT MANDREL

CPS 03 is a conventional mandrel. It is designed to receive 1.0" and 1-1/2" conventional gas lift valves and conventional check valve. These valves are mounted externally on the mandrel. Our conventional mandrels feature external side guards to protect

the gas lift valve and check. Mandrels are available in standard sizes 2-3/8" and 2-7/8" in J-55, N-80, L-80 and P110 materials. We can also accommodate 3-1/2" and 4- 1/2" sizes along with 13-CR material by special order.

Mandrel Tubing Size	PPF	Valve Size	Connection	Mandrel OD	Mandrel ID	Drift ID	Mandrel Length
2-3/8"	4.7	1.0"	API EU*	3.783"	1.995"	1.901"	4 feet
		1.5"		4.283"			
2-7/8"	6.5	1.0"		4.335"	2.441"	2.347"	
		1.5"		4.835"			

* - Premium connection is also available upon request.



WIRELINE RETRIEVABLE GAS LIFT VALVE (INJECTION PRESSURE OPERATED)

CPS 05 IPO is a wireline retrievable injection pressure operated gas lift valve that manufactures in 1.0" or 1-1/2" O.D. This valve is basically controlled by injection gas pressure (casing pressure). The valve is installed in side pocket mandrels with the help of wireline tools.

The valve has a bellows assembly that contains a nitrogen charge over damping fluid. The dome charge

provides the closing force of the valve. When injection gas pressure exceeds the closing force, the bellows compress, lifting the valve stem off of the seat, allowing gas to be injected through the valve and into the tubing.

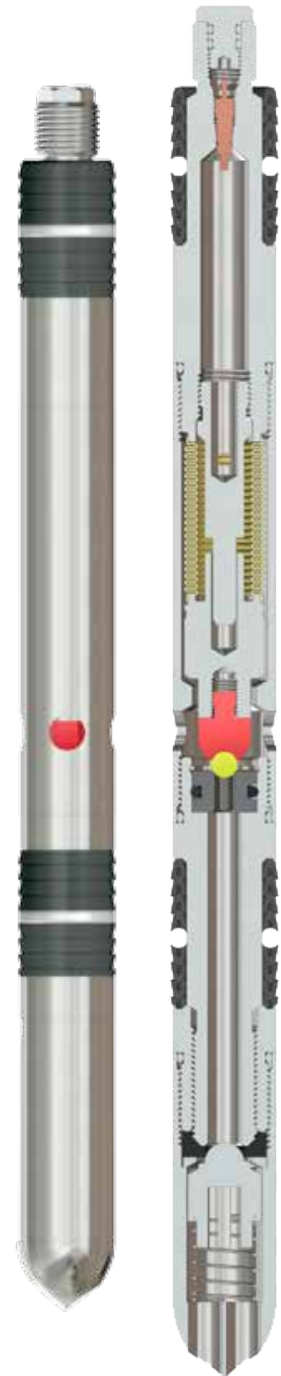
The valve has an integral back check device which prevent gas and fluid flow from the tubing back into the casing annulus.

Features

- Body material in stainless steel SS304/SS 316L, 17-4PH and Monel.
- Standard packing material Neoprene others are also available.
- Three-ply Monel bellows.
- Mechanical stop prevents bellows over stroke.
- Viscous fluid shear dampening prevents bellow fatigue and stem Chattering.
- Tungsten carbide ball and ball stem assembly.
- Replaceable floating Monel seat (also available in tungsten carbide material)
- Silver brazed bellows connections
- Compatible with CPS as well as other manufacturer's side pocket mandrels

Valve Type & Size	Latch Type	Effective Bellow Area (IN ²)	Port Size (IN)	Port Area (IN ²)	Ap/Ab	1-Ap/Ab	*Rtef-(Ap/Ab)/(1-Ap/Ab)
IPO; 1.0"	BK-2	0.31	3/16	0.029	0.094	0.906	0.103
			1/4	0.051	0.165	0.835	0.197
			5/16	0.079	0.255	0.745	0.342
IPO; 1.5"	RK	0.77	3/16	0.029	0.038	0.962	0.039
			1/4	0.051	0.066	0.934	0.071
			5/16	0.079	0.103	0.897	0.114

*- Tubing Effective Factor



WIRELINE RETRIEVABLE DUMMY VALVE

CPS 11 1.5" and 1.0" Wireline Dummy Valves are Wireline Retrievable non-equalizing isolation tools designed to install in a side pocket mandrel.

The CPS Dummy is a multi-purpose tool used to blank off the pocket of side pocket mandrels. This allows production operations to be carried out prior to the need for gas lift valves, allow pressurizing of the tubing or

casing for setting packers, testing and treatment procedures.

The simple design of the dummy valve allows for easy replacement of the valve packing and for rapid low-cost repair of valve components. The rugged, solid construction and premium materials assure a long service life.

Features

- Body material in stainless steel SS304/SS 316L, 17-4PH and Monel.
- Standard packing material Neoprene others are also available.
- Compatible with standard 1.0"(BK-2) and 1.5"(RK) latches.
- Compatible with CPS as well as other manufacturer's side pocket mandrels.

Valve Type & Size	Latch Type
Dummy; 1.0"	BK-2
Dummy; 1.5"	RK



WIRELINE RETRIEVABLE ORIFICE VALVE

CPS 12 1.5" and 1.0" Wireline Retrievable Orifice Valve is used to control the flow of gas from the casing annulus into the tubing. The valve is installed in side pocket mandrels.

The valve is designed with a square edged orifice which, when properly sized, allows volume control when the casing and tubing pressures are known. An integral reverse flow check prevents gas and or fluid from flowing from the tubing back into the casing annulus. The CPS valve consists of a flow barrel, seat housing and floating square edged orifice, lower

packing retainer, and check nose with a reverse flow check drop.

In operation, gas and/or fluids that are injected into the casing annulus enter through the ports in the side pocket mandrel. This gas and/or fluid then enter through the ports in the valve that is located in the flow barrel between the two sets of packing. The gas and/or fluid then flows through the seat housing and square edged orifice, past the reverse flow check drop, through the check nose and into the tubing.

Features

- Replaceable square edged orifice (Tungsten Carbide available)
- Flow capacity determined by orifice sizing.
- Integral reverse flow check valve.
- Compatible with standard 1.0"(BK-2) and 1.5"(RK) latches.
- Compatible with other manufacturers' side pocket mandrels.
- Standard packing material Neoprene others are also available.

Valve Type & Size	Latch Type	Port Size (IN)
Orifice; 1.0"	BK-2	3/16
		1/4
		5/16
Orifice; 1.5"	RK	3/16
		1/4
		5/16



WIRELINE RETRIEVABLE LATCHES

CPS 07 Wireline Retrieval Latches are designed to secure Retrieval Gas Lift Valves and any other flow control devices, such as chemical injection valves and water flood valves, into the appropriate side pocket mandrels equipped with 1" or 1-1/2" outside

diameter receiver pockets. All the running post and bodies for the BK-2 and RK model latches are drilled and pinned.

Features

- Available in SS316/SS316L, SS304 and Monel.
- Latch design allows valves to be pulled and serviced or replaced without pulling the whole tubing, reducing the pulling and servicing costs.
- 1 1/2-in. OD latch type include two O-rings that provide a barrier against fine sands and debris, protecting the latch from becoming stuck and hindering retrieval.
- Compatible with pulling tools, gas lift devices and side pocket mandrels.
- Springs are available with Inconel Alloy to prevent scale buildup and enhance erosion resistance.



RK

Pocket Size	Lug Profile	Model	Locking Profile	Pulling Neck OD(IN)	Running Neck OD(IN)	Running Tool	Pulling Tool
1.0"	180°	BK-2	Ring Type	0.875	0.750	JK	1-1/4" JDC
1.5"	180°	RK	Ring Type	1.185	0.937	RK-1	1-5/8" JDS



BK - 2

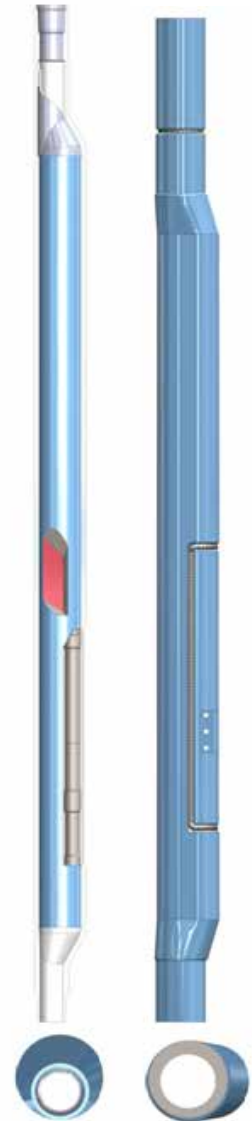
SIDE POCKET MANDREL

The CPS26 1.5" and 1.0" Wireline Retrievable Orifice Valve is used to control the flow of gas from the casing annulus into the tubing. The valve is installed in side pocket mandrels.

The valve is designed with a square edged orifice which, when properly sized, CPS26 Side Pocket mandrel is used to house gas-lift valves and similar devices that require communication with the annulus. The design of a side-pocket mandrel is such that the installed components do not obstruct the production flow path, enabling

access to the wellbore and completion components below.

CPS 's Oval/Round Body Mandrel configuration is designed to provide a full opening tubing drift while receiving any manufactures 1.0" or 1-1/2" O.D. CPS or other manufacturer's Gas Lift Valves. These mandrel feature an orienting sleeve and deflector above the pocket. The orienting sleeve allows you an option to use a positive orienting kickover tool to run or retrieve valves. Deflectors are in place to deflect and protect the valve latch.



Features

- Offset design eliminates the need to pull or rerun the tubing string to install or replace gas-lift valves.
- Pocket is offset from tubing ID, Which allows the maximum flow from tubing.
- Orienting sleeve having mule profile which allows precise installation and retrieval of gas-lift equipment in straight and deviated wellbores.
- Deflectors protects gas-lift equipment from damage.
- Mandrel is available in 4140/4130 and 13CR material.
- Mandrel can be furnished in either API threads or Premium connection.
- Round body design is available for high pressure applications.

Tubing Size	Mandrel Type	Pocket	Pocket Type	Pocket Latch Configuration	Orientation Sleeve	Major O.D.	Major I.D.	Drift
2-7/8"	Oval	1.0"	Forged	180°	Yes	4.75"	4.00"	2.347"
		1.5"	Machined			5.40"	4.62"	
2-7/8"	Round	1.0"	Forged	180°	Yes	5.00"	-	
		1.5"	Machined			5.44"	-	
3-1/2"	Oval	1.0"	Forged	180°	Yes	5.31"	4.12"	2.867"
		1.5"	Machined			5.96"	5.00"	
3-1/2"	Round	1.0"	Forged	180°	Yes	5.75"	-	
		1.5"	Machined			6.00"	-	

CONVENTIONAL CHEMICAL INJECTION VALVE

The CPS50 1.0" Conventional Chemical Injection Valve is used for injection of corrosion inhibitors and chemical to treat corrosion in the tubing or around the downhole tools.

CPS50 is a spring loaded valve is

installed on a conventional mandrel. Injection rate of the valve is adjusted by the port size and tension of the power spring. The preset power spring keeps the valve in closed position.

Features

- INCONEL power spring and check-valve spring withstand corrosive and high temperature conditions.
- Spring Loaded integral reverse-flow check valve prevents tubing-to-casing annulus communication during operation.
- Simple design increases the flow efficiency.
- Tungsten-carbide ball and insert seat (standard) offer the highest abrasion and impact resistance available, providing a robust and stable injection system.
- Valve is available in SS316 and Monel material. Inconel is also available upon request.

Valve Type & Size	Top Connection	Port Size (IN)
Chemical Injection; 1.0"	1/4" NPT	3/16
		1/4
		5/16



RUNNING TOOL

CPS running tools are wireline application tools used to run and install 1.0" and 1.5" outside diameter (OD) devices inside pocket mandrels.

These running tools consist of a fishing

neck, a pin thread connection on the top end, and a skirt on the lower end, which attaches to the gas lift device with shear pins.

Running Tool Type	Top Connection	Fishing neck	Maximum OD	Device Size
JK Running Tool	Ø15/16-10 UNS 2A	1.187"	1.25"	1.0"
RK-1 Running Tool		1.187"	1.45"	1.5"



JD PULLING TOOL

CPS08 JD pulling tools are wireline application tools designed to pullout the retrievable devices from a well with outside fishing necks. These tools are available with three different core lengths, which enable the tools to retrieve subsurface devices with fishing necks of different lengths of reach.

The JD series pulling tools use the D sub, which is made up to the core of the tool. The dogs, which are mounted on the skirt, are inserted into the vertical openings in the skirt. The dogs are spring-loaded and have pawls located in the windows on the skirt.

The pulling tool can be released in the event that the subsurface device cannot be freed by continuous downward jarring.

Three types of JD series tools are used and differ only by their core length, which is selected according to the reach required:

- JDC long core/short reach
- JDS intermediate core/intermediate reach
- JDL short core/long reach

All other parts of each tool are identical and entirely interchangeable.

Pulling Tool Size	Top Connection	Pulling Tool Fishing neck	Maximum OD	To Pull Finish Neck OD	Core Connection
1-1/4"	Ø15/1 6-10 UNS 2A	1.187"	1.30"	0.875"	Ø1/4-20
1-5/8"		1.187"	1.625"	1.187"	Ø1/2-13



FLOW CONTROL EQUIPMENTS

We Know Your Well Very Well..

TYPE- "CF" TOP NO GO NIPPLE

CPS model "CF" Landing Nipple is a tubing nipple for use with Top No-Go locking devices only. It has a Polished Sealbore, Top No-Go shoulder, and a locking groove.

CF Nipple locates seals and retains flow control accessories that have a top no go locking device accessories which are run and retrieved on slickline.

Applications

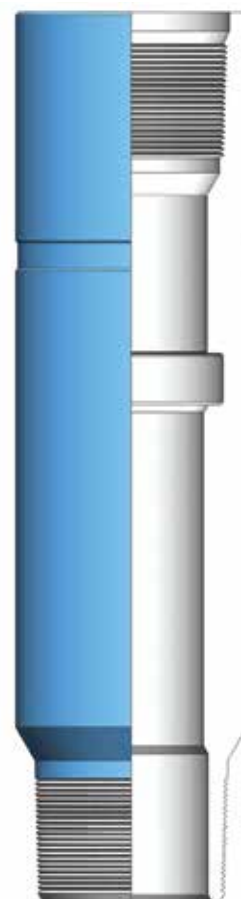
- Inserting blanking plugs for shutting in or testing
- Setting a packer or testing tubing
- Installing instrument hangers for temperature and pressure recorders
- Velocity-type safety valves for shutting off flow

The CPS "CF" Landing Nipple is a full bore, selective nipple that allows for the location of many wireline-run and retrieved Flow Control devices, such as:

- Blanking Plugs
- Check Valves (Standing Valves)
- Instrument Hangers
- Bottom Hole Chokes

Features and Benefits

- Internal locking groove fits various other Flow Control tools
- Selective locking devices allow more than 1 CF Landing Nipple of the same sealbore diameter to be used in the same tubing string
- Seal bore area packs off various Flow Control devices
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS- "CF" Top No Go Landing Nipple specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	Length (In.) *
2-3/8"	1.781	2.560	12-17
	1.812		
	1.875		
2-7/8"	2.062	3.109	13-18
	2.125		
	2.188		
	2.250		
	2.312		
3-1/2"	2.562	3.687	13-18
	2.750		
	2.812		
4-1/2"	3.688	5.200	15-20
	3.750		
	3.812		

* Length may vary depending on thread size and type.

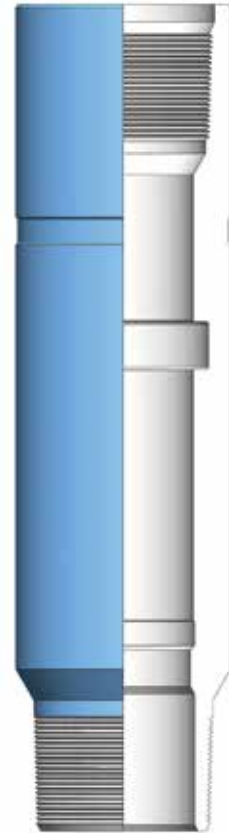
TYPE- "CR" BOTTOM NO GO NIPPLE

CPS model "CR" Landing Nipple is a tubing nipple for use with Bottom No-Go locking devices only. It has a Polished Sealbore, Bottom No-Go shoulder, and a locking groove.

CR Nipple locates seals and retains flow control accessories that have a bottom no go locking device accessories are run and retrieved on slickline.

The CPS "CR" Landing Nipple is a full bore, non-selective nipple that allows for the location of many wireline-run and retrieved Flow Control devices, such as:

- Blanking Plugs
- Check Valves (Standing Valves)
- Instrument Hangers
- Bottom Hole Chokes



Applications

- Inserting blanking plugs for shutting in or testing
- Setting a packer or testing tubing
- Installing instrument hangers for temperature and pressure recorders
- Velocity-type safety valves for shutting off flow

Features and Benefits

- Internal locking groove fits various other Flow Control tools
- Seal bore area packs off various Flow Control devices
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections

CPS- "CR" Bottom No Go Landing Nipple specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	No Go ID(In.)	Length (In.) *
2-3/8"	1.781	2.560	1.728	12-17
	1.812		1.760	
	1.875		1.822	
2-7/8"	2.062	3.109	1.978	13-18
	2.125		2.075	
	2.250		2.197	
	2.312		2.259	
3-1/2"	2.562	3.687	13-18	
	2.750			
	2.812			
4-1/2"	3.688	5.200	3.625	15-20
	3.750		3.700	
	3.812		3.759	

* Length may vary depending on thread size and type.
Available in All API & Premium thread connections on request

OTIS TYPE- "CX" SELECTIVE NIPPLE

"CX" Landing Nipples are fully selective nipples, used to land, lock and seal X-type locking mandrels with attached flow control device in the production tubing string.

The internal profile of CX Landing Nipples includes a selective profile a locking recess and a polished sealbore. When installed, the locking dogs in the

X-type lock move out into the recess of the nipple, anchoring the lock and positioning the lock packing in the polished sealbore section of the nipple.

- Blanking Plugs
- Standing Valves
- Instrument Hangers
- Bottom Hole Chokes

Applications

- Inserting Blanking Plugs for shutting in or testing
- Setting a packer or testing tubing
- Installing instrument hangers for temperature and pressure recorders
- Velocity-type safety valves for shutting off flow

Features and Benefits

- Internal locking groove fits various other Flow Control tools
- Selective locking devices allow more than 1 CX Landing Nipple of the same sealbore diameter to be used in the same tubing string
- Seal bore area packs off various Flow Control devices
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements
- Available in All API & Premium thread connections



CPS- "CX" Landing Nipple specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	Length (In.) *
2-3/8"	1.875	3.063	12-17
2-7/8"	2.312	3.668	13-18
3-1/2"	2.750	4.500	15-20
	2.812		
4-1/2"	3.812	5.563	15-20

OTIS TYPE- "CXN" BOTTOM NO GO NIPPLE

CPS model "CXN" Landing Nipple is a tubing nipple for use with "XN" Bottom No-Go locking devices only. It has a Polished Sealbore, Bottom No-Go shoulder, and a locking groove.

CXN Nipple locates seals and retains flow control accessories that have a bottom no go locking device accessories are run and retrieved on slickline.

Applications

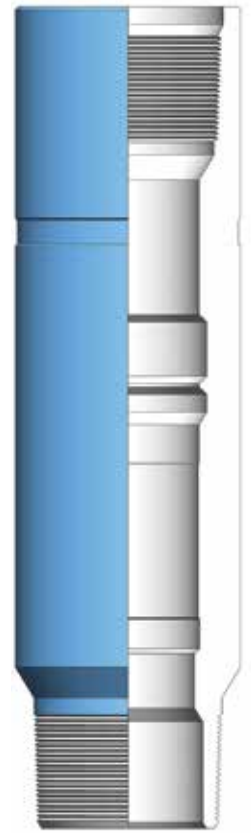
- Inserting blanking plugs for shutting in or testing
- Setting a packer or testing tubing
- Installing instrument hangers for temperature and pressure recorders
- Velocity-type safety valves for shutting off flow

The CPS "CXN" Landing Nipple is a full bore, non-selective nipple that allows for the location of many wireline-run and retrieved Flow Control devices, such as:

- Blanking Plugs
- Check Valves(Standing Valves)
- Instrument Hangers
- Bottom Hole Chokes

Features and Benefits

- Internal locking groove fits various other Flow Control tools
- Seal bore area packs off various Flow Control devices
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS- "CX" Landing Nipple specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	No-Go ID(In.)	Length (In.) *
2-3/8"	1.875	3.063	1.791	12-17
2-7/8"	2.312	3.668	2.205	13-18
3-1/2"	2.750	4.500	2.635	15-20
	2.812		2.666	
4-1/2"	3.812	5.563	3.725	15-20

OTIS TYPE- "CR" SELECTIVE NIPPLE

"CR" Landing Nipples are fully selective nipples, used to land, lock and seal R-type locking mandrels with attached flow control device in the production tubing string.

The "CR" Nipple is designed to be used in the heaviest weight, higher rated pressure tubing. It has a Polished Sealbore and a locking groove.

The internal profile of "CR" Landing Nipples includes a Non-selective pro-

file a locking recess and a polished sealbore. When installed, the locking dogs in the RN-type lock move out into the recess of the nipple, anchoring the lock and positioning the lock packing in the polished sealbore section of the nipple.

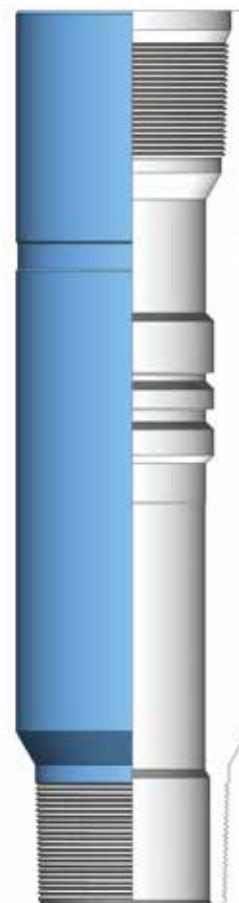
- Blanking Plugs
- Standing Valves
- Instrument Hangers
- Bottom Hole Chokes

Applications

- Inserting blanking plugs for shutting in or testing
- Setting a packer or testing tubing
- Installing instrument hangers for temperature and pressure recorders
- Velocity-type safety valves for shutting off flow

Features and Benefits

- Internal locking groove fits various other Flow Control tools
- Selective locking devices allow more than 1 CR Landing Nipple of the same sealbore diameter to be used in the same tubing string
- Seal bore area packs off various Flow Control devices
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements
- Available in All API & Premium thread connections



CPS- "CR" Landing Nipple specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	Length (In.) *
2-3/8"	1.500	3.063	15-18
	1.710		
	1.781		
2-7/8"	1.875	3.668	15-18
	2.000		
	2.125		
	2.188		
3-1/2"	2.188	4.500	13-18
	2.313		
	2.562		
4-1/2"	3.437	5.563	15-20
	3.688		
	3.750		
	3.813		

* Length may vary depending on thread size and type.

Available in All API & Premium thread connections on request

OTIS TYPE- "CRN" NON-SELECTIVE NIPPLE

"CRN" Landing Nipples are fully selective nipples, used to land, lock and seal "CRN" Landing Nipples are fully selective nipples, used to land, lock and seal "RN" Bottom No-Go locking devices only. It has a Polished Sealbore, Bottom No-Go shoulder, and a locking groove

The "CR" Nipple is designed to be used in the heaviest weight, higher rated pressure tubing. It has a Polished Sealbore and a locking groove.

Applications

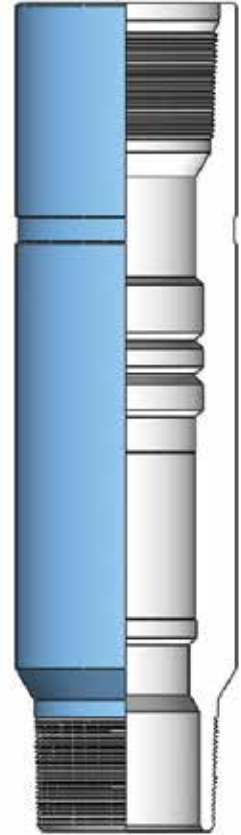
- Inserting blanking plugs for shutting in or testing
- Setting a packer or testing tubing
- Installing instrument hangers for temperature and pressure recorders
- Velocity-type safety valves for shutting off flow

The internal profile of "CRN" Landing Nipples includes a selective profile a locking recess and a polished sealbore. When installed, the locking dogs in the RN-type lock move out into the recess of the nipple, anchoring the lock and positioning the lock packing in the polished sealbore section of the nipple.

- Blanking Plugs
- Standing Valves
- Instrument Hangers
- Bottom Hole Chokes

Features and Benefits

- Internal locking groove fits various other Flow Control tools
- Selective locking devices allow more than 1 CR Landing Nipple of the same sealbore diameter to be used in the same tubing string
- Seal bore area packs off various Flow Control devices
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for stand ard normal/H2S, CO2 well services requirement.
- Available in All API & Premium thread connections



CPS- "CRN" Landing Nipple specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	No-Go ID(In.)	Length (In.) *
2-3/8"	1.500	3.063	1.345	15-18
	1.710		1.560	
	1.781		1.640	
2-7/8"	1.875	3.668	1.716	15-18
	2.000		1.881	
	2.125		1.937	
	2.188		2.010	
3-1/2"	2.188	4.500	2.010	13-18
	2.313		2.131	
	2.562		2.329	
4-1/2"	3.437	5.563	3.260	15-20
	3.688		3.456	
	3.813		3.725	

* Length may vary depending on thread size and type.

Available in All API & Premium thread connections on request

"CX", "CXN", "CR" & "CRN" LOCK MANDRELS (BLANKING PLUGS)

The CPS Locking Mandrels are selective and Non Selective set lock mandrels designed to be landed down hole in a respective CX, CXN, CR, CRN Landing Nipple profile. The "CX" Lock is available with various sub surface plug assemblies and flow control accessories.

These Lock mandrels are runs with respective size model "CX" and "CR" Running Tools and can be retrieve by using model "GS" pulling Tool.

Applications

- Selected zones can be produced or shut in.
- To pressure test tubing.
- To isolate tubing for wellhead repair or removal
- To set hydraulic actuated Packers.
- Gauge hangers for bottomhole pressure/temperature surveys
- Positive locator for straddle systems
- Plugging under pressure
- Almost unlimited locations for setting and locking
- subsurface flow controls

Features and Benefits

- Retractable locking keys
- Locks designed to hold pressure from above or
- below or from sudden reversals
- Extra large ID for higher flow volumes Available in All API material grade.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

CPS- "Lock Mandrel specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	Lock Mandrel ID(In) (CX and CXN type)	Lock Mandrel ID(In) (CR and CRN type)
2-3/8"	1.500	3.063	1.00	0.62
	1.710			0.75
	1.781			0.88
2-7/8"	1.875	3.668	1.38	0.88
	2.000			1.12
	2.125			
	2.188			
3-1/2"	2.188	4.500	1.75	1.12
	2.313			1.38
	2.562			1.94
4-1/2"	3.437	5.563	2.62	2.38
	3.688			NA
	3.750			2.12
	3.813			



"CX", "CXN", "CR" & "CRN" STANDING VALVES

The CPS Standing Valves are selective and Non Selective set lock mandrels designed to be landed down hole in a respective CX, CXN, CR, CRN Landing Nipple profile. CPS standing Valve allows the flow from tubing string during run in after landing over respective landing nipple a

ball drops to seat over the Seat Housing of standing Valve it allows the string to pressurize to set the packer inject the necessary chemicals.

These Lock mandrels are runs with respective size model "CX" and "CR" Running Tools and can be retrieve by using model "GS" pulling Tool.

Applications

- To pressure test tubing.
- To set hydraulic actuated Packers
- Positive locator for straddle systems
- Almost unlimited locations for setting and locking
- subsurface flow controls

Features and Benefits

- Retractable locking keys
- Locks designed to hold pressure from above or
- below or from sudden reversals
- Extra large ID for higher flow volumes Available in All API material grade.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

CPS- "Lock Mandrel specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	Lock Mandrel ID(In) (CX and CXN type)	Lock Mandrel ID(In) (CR and CRN type)
2-3/8"	1.500	3.063	1.00	0.62
	1.710			0.75
	1.781			0.88
2-7/8"	1.875	3.668	1.38	0.88
	2.000			1.12
	2.125			
	2.188			
3-1/2"	2.188	4.500	1.75	1.12
	2.313			1.38
	2.562			1.94
4-1/2"	3.437	5.563	2.62	2.38
	3.688			NA
	3.750			2.12
	3.813			



CPS “CF-2 & CR-2” EQUALIZING CHECK VALVES

The CPS Model ‘CF-2’ and ‘CR-2’ Equalizing Check Valves are complete equipment units, without any Locking Device. They are utilized in the following Tubing Mounted Equipment:

CF-2: run in all Model ‘F’ Nipples and all Model ‘L’ Sliding Sleeves

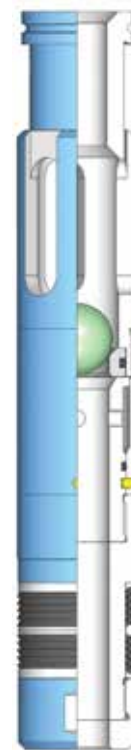
CR-2: run in Bottom No-Go ‘R’ Nipples

Both models are run into a Nipple Profile and hold pressure from above only. The ‘FB-2’ model lands on the

top of a ‘F’ Nipple Profile seal bore. The ‘RB2’ model seats

on the Bottom No-Go Shoulder of a ‘R’ Nipple a ‘C-1’ Running Tool is used to run both valve assemblies.

Both models can be equalized prior to retrieval, by shifting open the Equalizing Mandrel Ports. Standard Pulling Tool model “JDC”/“JUC” is utilized for retrieval of these valves.



Applications

- Can be used as a plug to pressure test tubing.
- To set hydraulically actuated packer with the check valve positioned below the packer.
- For gas lift operations.
- To be used as a standing valve in wells which have downhole electric pumps

CPS- “Lock Mandrel specification guide

Tubing size	Seal bore (In.)	Min. OD (In.)	To Run model “C-1” Pulling	To retrieve model “JDC/JUC Pulling Tool
2-3/8"	1.781	1.865		2-3/8"
	1.812	1.865		
	1.875	1.905		
2-7/8"	2.250	2.302		2-7/8"
	2.312	2.364		
3-1/2"	2.750	2.802		3-1/2"
	2.812	2.865		
4-1/2"	3.668	3.740		4-1/2"
	3.750	3.802		
	3.812	3.875		



CPS-NE NON ELASTOMERIC SLIDING SLEEVE

The Sliding Sleeve is a Downhole Tool normally screwed into the production tubing, allowing for communication between the tubing and the casing.

It is used to selectively produce zones in a multi-zone completion, stimulate and test zones, displace tubing or casing once the wellhead is installed, kill the well by circulation and allows for the circulation of treatment chemicals or agents.

The closing sleeve has replaceable, vee type upper and lower seals to ensure maximum sealing integrity for extended periods of time downhole. The upper sub is available in

selective/Non Selective and Otis (X, XN, R, RN)/Baker (F&R) type Nipple profile machined into it. This feature provides a profile to locate and lock into place various flow control devices which may be required from time to time.

The Sliding Sleeve is shift down to open and closes with the B Shifting Tool. The Shifting Tool can be dressed to either release automatically or to shear a pin to release.

Downward jarring opens the sleeve and upward jarring closes it. The Sliding Sleeve is designed so that normal wireline operations will not open or close it inadvertently.



Applications

- A specially designed diffuser ring made of high-strength thermoplastic is critically spaced between the flow ports and the upper packing unit. This prevents damage to the upper packing unit during shifting by controlling the rush of fluid or gas, and lessens the likelihood of tool string damage by providing for slow equalization of high differentials.
- Mill slots replace drill holes as flow ports on both the housing and the insert to allow more flow area, reduce erosion and allow higher torque and tensile strength through the sleeve
- The threat of galling is further reduced by coating critical metallic components with proprietary surface treatments.
- Available in All API material grades
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections and Elastomers type
- High chamfered smooth Equalizing Port does not damage the seals during the shifting of Inner Sleeve
- Top and Bottom Sub having High Finish seal Bore ID to accommodate isolation sleeve and other sealing devices

CPS Non Elastomeric Sliding Sleeve Technical specification guide

Seal bore (Inch)	Flow area (Ports) Sq. In	Flow Area (Min ID) Sq. In	Max OD (Inch)	Thread connection	Shifting Tool	Pressure Rating (Psi)
1.625	0.919	2.073	2.625	2-3/8"	1.625 "B"	9,000
1.875	2.355	2.762	3.063	2-3/8"	1.875 "B"	9,000
2.313	2.974	4.199	3.668	2-7/8"	2.313 "B"	
2.750	7.212	5.940	4.281	3-1/2"	2.750 "B"	8000
2.812		6.211	4.281		2.812 "B"	
3.312	11.426	8.611	5.680	4-1/2"	3.250 "B"	7,500
3.813		11.413	5.680		3.813 "B"	
4.312	10.598	14.596	6.400	5-1/2"	4.312 "B"	6,500
4.562		16.337	7.500		4.562 "B"	

CPS-CL ELASTOMERIC SLIDING SLEEVE

The “CL” Sliding Sleeve is a Downhole Tool normally screwed into the production tubing, allowing for communication between the tubing and the casing.

It is used to selectively produce zones in a multi-zone completion, stimulate and test zones, displace tubing or casing once the wellhead is installed, kill the well by circulation and allows for the circulation of treatment chemicals or agents.

The closing sleeve has replaceable, Bonded seal type upper and lower seals to ensure maximum sealing integrity for extended periods of time

downhole. The upper sub is available in selective/Non Selective and Otis (X, XN, R, RN)/Baker (F&R) type Nipple profile machined into it. This feature provides a profile to locate and lock into place various flow control devices which may be required from time to time.

The Sliding Sleeve is shift down to open and closes with the D-2 Shifting Tool. The Shifting Tool can be dressed to either release automatically or to shear a pin to release.

Downward jarring opens the sleeve and upward jarring closes it. The Sliding Sleeve is designed so that normal wireline operations will not open or close it inadvertently.



Features & Benefits

- Mill slots replace drill holes as flow ports on both the housing and the insert to allow more flow area, reduce erosion and allow higher torque and tensile strength through the sleeve
- The threat of galling is further reduced by coating critical metallic components with proprietary surface treatments.
- Available in All API material grades
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections and Elastomers type
- Top and Bottom Sub having High Finish seal Bore ID to accommodate isolation sleeve and other sealing devices
- Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed
- The circulation ports can be carburised to prevent the damage during flow.

CPS model “L” Elastomeric Sliding Sleeve Technical specification guide

Seal bore (Inch)	Flow area (Ports) Sq. In	Flow Area (Min ID) Sq. In	Max OD (Inch)	Thread connection	Shifting Tool	Pressure Rating (Psi)
1.625	0.919	2.073	2.625	2-3/8	1.625" "D-2"	9,000
1.812	2.355	2.762	3.063	2-3/8	1.812" "D-2"	9,000
1.875	2.355	2.762	3.063	2-3/8	1.875 "D-2"	9,000
2.313	2.974	4.199	3.668	2-7/8	2.313 "D-2"	
2.750	7.212	5.940	4.281	3-1/2	2.750 "D-2"	8000
2.812		6.211	4.281		2.812 "D-2"	
3.312	11.426	8.611	5.680	4-1/2	3.250 "D-2"	7,500
3.813		11.413	5.680		3.813 "D-2"	
4.312	10.598	14.596	6.400	5-1/2	4.312 "D-2"	6,500
4.562		16.337	7.500		4.562 "D-2"	

SLIDING SLEEVE PACKOFF

The CPS Sliding Sleeve Packoff is designed to be attached to a lock type that matches the integral landing in the sliding sleeve. When sliding Sleeve malfunctioning, leaks fluid between casing annulus and tubing when closed, a Packoff used to isolates this zone without pulling up the entire tubing string.

Packoff assemblies are used to Sliding Sleeve ports and prevent migration fluids between tubing and casing annulus, as well as provide the path for flow production fluids to the surface.

CPS Sliding Sleeve Packoff consist of a subassembly called Lock mandrel having Baker/Otis type lock which sets inside the matching Landing Nipple lock profile of Upper Sub. This also

consists of two seal stack unit suitable to well bore environment, the Upper seal unit seal inside the Upper sub of and Lower seal set inside the Bottom Sub of Sliding Sleeve.

Since the Sliding sleeve is hollow it, it will still allow flow up the tubing and provide the uniform path for the other Wireline job.

CPS Sliding Sleeve Packoff consist of a Equalizing Plug/ Knockout plug which break by Equalizing Prong during pulling to equalize the pressure across the Sleeve at the begin.

Downward jarring set the lock mandrel by using "CPSX" Running Tool run by Wireline/Slickline. The tool is retrieved by "CPSGS" Pulling Tool.



Features & Benefits

- Blanking off the ports in a Sliding Sleeve.
- Shutting off flow from casing zone.
- Allowing flow from lower Zone.
- Straddles and Packs off above and below flow ports
- Pressure is equalized by a Equalizing Plug before pulling out the tool.
- Adaptable to most of Manufacturers lock.
- Adaptable to most of Manufacturers Sliding Sleeves type.
- Available in All API material grades
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All Elastomers type.
- Validated to withstand 7,500 psi differential pressure and 300° F Temperature
- High chamfered smooth Equalizing Port does not damage the seals during the shifting of Inner Sleeve

CPS Sliding Sleeve Pack Off Technical specification guide

SSD size	Lock mandrel size	Max. Tool OD	Min. Tool	Running/ Pulling Tool	Pressure Rating (Psi)	Temperature
2-3/8"	1.625	1.625	0.75	1.625	9,000	300°F
	1.875	1.875	1.00	1.875	9,000	
2-7/8"	2.313	2.313	1.38	2.313		
3-1/2"	2.750	2.750	1.75	2.750	8,000	
	2.812	2.812		2.812		
4-1/2"	3.312	3.312	2.12	3.250	7,500	
	3.813	3.813	2.62	3.813		
5-1/2"	4.312	4.312			4.312	
	4.562	4.562	3.12	4.562		

CPS-X RUNNING TOOL

The X-Line Selective Running Tool is designed to install subsurface controls using a type X Locking Mandrel. The selective features of the X Running Tool allow the operator to install the downhole device in a pre-determined CX Landing Nipple by adjusting the tool into the selective position. If the subsurface control is to be installed in the upper most landing nipple, the locking

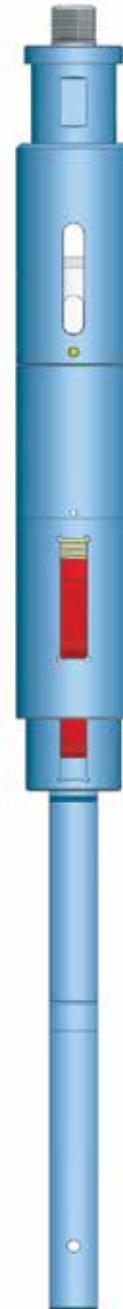
mandrel may be run with the keys in the control or location position.

In addition to setting the X Locking Mandrel, the Running Tool may be used to locate WX Landing Nipples.

The R Selective Running Tool, similar in design, is available in a wide range of sizes to install Type R Locking Mandrels in heavy weight tubings.

Sizes	1.710	1.781	1.875	2.125
Fishing neck OD	1.188	1.375	1.375	1.375
Connection	15/16-10	15/16-10	15/16-10	15/16-10
Bottom thread	3/8-16	1/2-13	1/2-13	1/2-13
Length	30.063	29.313	29.313	29.313
Shear Pin	3/16 x 1-1/8"	1/4x 1-1/2"	1/4x 1-1/2"	1/4x 1-1/2"
OD Dogs retracted	1.640	1.750	1.750	2.063
OD Dogs Expanded	1.760	1.828	1.937	2.165
Fishing Neck Engages	1-1/16	1-3/4	1-3/4	1-3/4

Sizes	2.188	2.313	2.562
Fishing neck OD	1-3/4	1-3/4	1-3/4
Connection	15/16-10	15/16-10	15/16-10
Bottom thread	5/8-11	5/8-11	5/8-11
Length	29.313	29.313	30.250
Shear Pin	1/4" x 1-7/8"	1/4" x 1-7/8"	1/4" x 1-7/8"
OD Dogs retracted	2.175	2.175	2.500
OD Dogs Expanded	2.297	2.359	2.671
Fishing Neck Engages	1.812	1.812	1.812



CPS-GS PULLING TOOL

The “GS” Pulling Tool is a wireline service tool designed to retrieve flow control devices from well bore. The “GS” Pulling Tool is designed to engage an internal type fishing neck. The tool is available in a wide range of sizes, for standard or H2S service.

The “GS” Pulling Tool is designed to be released from the downhole device by downward jarring.

CPS GS Pulling Tool Technical Specification Guide

'GS' PULLING TOOL						
Nominal Size (in)	Prong Conn.	Fishing Neck	Max. O.D. (in)	F/N O.D. (in)	Top Conn.	Reach (in)
	Box	I.D. Guide (in)				
1-1/4	3/8 -16	0.880	1.160	1.000	5/8-11 UNC	1.08
1-1/2-1-3/4	1/2-13	1.060	1.470	1.187	15/16-10 UN	1.62
2	1/2-13	1.380	1.750	1.375	15/16-10 UN	1.62
2	1/2-13	1.380	1.810	1.375	15/16-10 UN	1.62
2-1/2	5/8-11	1.810	2.160	1.750	15/16-10 UN	1.62
2-1/2	5/8-11	1.810	2.160	1.750	15/16-10 UN	1.62
3	5/8-11	2.310	2.720	2.313	1-1/16-10 UN	1.62
3-1/2	1-3/8-12	2.620	3.110	2.313	1-1/16-10 UN	1.62
4	2-1/8-12	3.120	3.620	2.313	1-1/16-10 UN	1.62
5	2-1/2-10	4.000	4.500	3.125	1-1/16-10 UN	1.82
6	2-3/4-10	4.750	5.560	3.125	1-1/16-10 UN	1.86
7	3-5/8-10	5.250	5.830	3.125	1-1/16-10 UN	1.86
7	3-5/8-10	5.250	5.880	3.125	1-1/16-10 UN	1.86



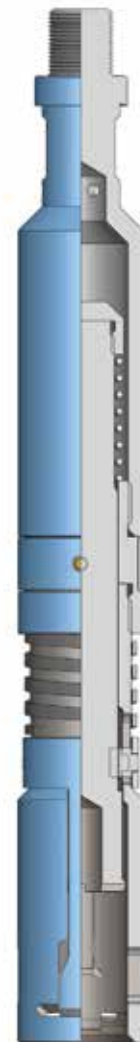
CPS-JD AND JU PULLING TOOL

The "JD" Pulling Tool is a wireline service tool designed to remove retrievable subsurface devices with external fishing necks from well. This tool has collet-type dogs with large latching area. It is also available with different length cores which make the reach of the tool adaptable to retrieve subsurface devices with fishing necks of different lengths.

The "JD" Pulling Tool utilizes the "D" top sub which is made up to the skirt

of the tool. The dogs, which are mounted on the skirt, are inserted into the vertical openings in the skirt. The "JD" Series Pulling Tool can be released, if necessary from the retrievable device by downward jarring.

The "JU" utilizes the "U" top sub which is made up to the core of the tool. The "JU" can be released, if necessary from the subsurface device by continued upward jarring.



CPS JD and JU Pulling Tool Technical Specification Guide

Size	Type	To Engage Fishing Neck O.D.	Reach	Max O.d.	Top Thread Connection
1 1/4 "	JDC	875"	1.937"	1.281"	15/16-10
1 3/8 "	JDC	1.000"	1.875"	1.375"	15/16-10
1 1/2 "	JDC	1.187"	1.093"	1.422"	15/16-10
1 1/2 "	JDS	1.187"	1.843"	1.422"	15/16-10
1 1/2 "	JUC	1.187"	1.093"	1.422"	15/16-10
1 1/2 "	JUS	1.187"	1.843"	1.422"	15/16-10
1 5/8 "	JDC	1.187"	1.093"	1.625"	15/16-10
2"	JDC	1.375"	1.437"	1.859"	15/16-10
2"	JDS	1.375"	2.125"	1.859"	15/16-10
2"	JUC	1.375"	1.437"	1.859"	15/16-10
2"	JUS	1.375"	2.125"	1.859"	15/16-10
2 1/2 "	JDC	1.750"	1.312"	2.250"	15/16-10
2 1/2 "	JDS	1.750"	2.187"	2.250"	15/16-10
2 1/2 "	JUC	1.750"	1.312"	2.250"	15/16-10
2 1/2 "	JUS	1.750"	2.187"	2.250"	15/16-10
3"	JDC	2.312"	1.437"	2.796"	1 1/16-10
3"	JDS	2.312"	2.125"	2.796"	1 1/16-10
3"	JUC	2.312"	1.437"	2.796"	1 1/16-10
3"	JUS	2.312"	2.125"	2.796"	1 1/16-10
4"	JDC	3.125"	2.312"	3.750"	1 1/16-10
4"	JUC	3.125"	2.312"	3.750"	1 1/16-10

COMPLETION
EQUIPMENT
-
BRIDGE PLUG
-
CEMENT RETAINER

We Know Your Well Very Well..

CPS-D & DA PERMANENT SEAL BORE PACKER

The CPS-D Permanent Seal Bore Production Packer is a versatile tool that can be used for single or multiple zone completions. The CPS-D is ideally suited for wells where high pressure, temperatures and corrosive fluids are anticipated. The packer is available in a variety of elastomers and seal bore materials to meet the most hostile downhole environments. The CPS-D is recommended for injection, stimulation, testing

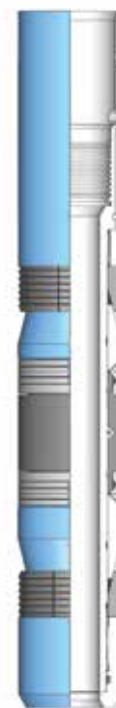
Applications

- Permanent Gravel-Pack Packing
- Vertical, Deviated and Horizontal wellbores
- Permanent sealbore production or isolation packing

The Model "D" provides with Blank Bottom Guide and model DB bottom guide provides with threaded (Box or pin) distinguishes it from the Signature D. The Model PB guide can be threaded to accept a mill-out extension, seal-bore extension, or tubing.

Features and Benefits

- Designed for ease of milling
- Components keyed for milling.
- Wireline or Hydraulic set
- Unique interlocking expandable metal backup rings contact casing, creating a positive barrier to packing element extrusion
- Smooth, continuous ID sealing bore
- Two opposed sets of full-circle, full-strength slips ensure packer will remain properly set
- Packing element resists swab-off and packs off securely when packer is set
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-D



CPS-DA

CPS -D Permanent Production Packer Specification Guide

Casing		Recommended casing ID size (In.)	Packer max OD (In.)	Min Seal bore ID of Packer (in.)	Min ID thru Seals Assy. (In.)	Baker E-4 Setting Tool	Model "H" Hyd. Setting Tool Size
Size (In.)	Weight (lbs/ft)						
4-1/2	9.5-13.5	3.920-4.090	3.812	2.687	1.938	Size 10	2.375
	11.6-15.1	3.826-4.000	3.593	1.968	0.984		
5	11.5-13	4.494-4.560	4.250	2.687	1.938	Size 20	2.375
	15-20.8	4.156-4.408	3.960	2.687		Size 20	
5-1/2	13-17	4.892-5.044	4.560	2.687	1.938	Size 20	2.375
	20-23	4.670-4.778	4.430	2.687			2.875
	23-26	4.548-4.670	4.330	2.687			
6-5/8	20-32	5.675-6.049	5.468	2.687	1.938	Size 20	2.875
	24-32	5.675-5.921	5.350				
7	17-20	6.456-6.538	6.187	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	20-29	6.184-6.456	5.875				
	23-32	6.094-6.366	5.687				
	32-42.7	5.750-6.094	5.468				
	38-46.4	5.626-5.920	5.350				
7 5/8	24-33.7	6.765-7.025	6.375	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	33.7-39	6.625-6.765	6.187				
	45.3-51.2	6.251-6.435	5.875				
8-5/8	24-36	7.825-8.097	7.500	3.875 and 4	2.468 and 2.985	Size 20	2.875
	36-49	7.511-7.825	7.125				
9-5/8	36-53.5	8.535-8.921	8.125	4.750 and 4	3.875 and 2.985	Size 20	2.875

Model CPS-DA Permanent Production Packer specification guide

Casing Size	Upper Seal Bore (In.)	Min ID Through seal assy.(In)	Lower Seal Bore(in)**	Min ID Through seal assy. (In.)
4-1/2"	2.500	1.875	1.968	1.312
5-1/2"	3.250	2.500	2.688	1.968
6-5/8"	4.000	3.250	3.250	2.406
7"	4.000	3.250	3.250	2.406
7-5/8"	4.000	3.250	3.250	2.406
9-5/8"	6.000	4.875	4.750	3.875

**Packer for these casing sizes also available with other seal bore and Seal assembly bore on order.

CPS-F-1 & FA-1 PERMANENT SEAL BORE PACKER

CPS-F-1 and production packers are the big-bore versions of the high-performing D retainer production packer. They feature the largest bore through any drillable packer.

CPS “FA-1” production packer provides all the versatility and high-performance characteristics of the CPS-D but with a larger sealing bore at the upper end. It’s frequently used in complex multiple-string completions or when large tubing is run and it is necessary to maintain clearance

through the packer. The “FA-1” is also used when the seal nipple is required to be compatible with the tubing ID.

The Model CPS-F-1 and CPS “FA-1” provides with Blank Bottom Guide and model CPS-FB-1 and “FAB-1” bottom guide provides with threaded (Box or pin) distinguishes it from the Signature CPS-F-1 and FA-1. The Model B-1 guide can be threaded to accept a mill-out extension, seal-bore extension, or tubing.

Applications

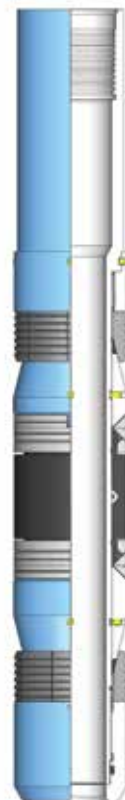
- Permanent Gravel-Pack Packing
- Vertical, Deviated and Horizontal wellbores
- Permanent sealbore production or isolation packing

Features and Benefits

- Designed for ease of milling
- Components keyed for milling.
- Wireline or Hydraulic set
- CPS “FA-1” have larger diameter upper seal bore accepts an anchor seal assembly to maximize thru bore
- Unique interlocking expandable metal backup rings contact casing, creating a positive barrier to packing element extrusion
- Smooth, continuous ID sealing bore
- Two opposed sets of full-circle, full-strength slips ensure packer will remain properly set
- Packing element resists swab-off and packs off securely when packer is set
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-F-1



CPS-FA-1

CPS-F-1 Permanent Production Packer specification guide

Casing		Recommend ed casing ID size (In.)	Packer max OD (In.)	Min Seal bore ID of Packer (in.)	Min ID thru Seals Assy. (In.)	Baker E-4 Setting Tool	Model "H" Hyd. Setting Tool Size
Size (In.)	Weight (lbs/ft)						
4-1/2	9.5-13.5	3.920-4.090	3.812	2.687	1.938	Size 10	2.375
	11.6-15.1	3.826-4.000	3.593	1.968	0.984		
5	11.5-13	4.494-4.560	4.250	2.687	1.938	Size 20	2.375
	15-20.8	4.156-4.408	3.960	2.687		Size 20	
5-1/2	13-17	4.892-5.044	4.560	2.687	1.938	Size 20	2.375
	20-23	4.670-4.778	4.430	2.687			2.875
	23-26	4.548-4.670	4.330	2.687			
6-5/8	20-32	5.675-6.049	5.468	2.687	1.938	Size 20	2.875
	24-32	5.675-5.921	5.350				
7	17-20	6.456-6.538	6.187	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	20-29	6.184-6.456	5.875				
	23-32	6.094-6.366	5.687				
	32-42.7	5.750-6.094	5.468				
	38-46.4	5.626-5.920	5.350				
7 5/8	24-33.7	6.765-7.025	6.375	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	33.7-39	6.625-6.765	6.187				
	45.3-51.2	6.251-6.435	5.875				
8-5/8	24-36	7.825-8.097	7.500	3.875 and 4	2.468 and 2.985	Size 20	2.875
	36-49	7.511-7.825	7.125				
9-5/8	36-53.5	8.535-8.921	8.125	4.750 and 4	3.875 and 2.985	Size 20	2.875

Model CPS-FA-1 Permanent Production Packer specification guide

Casing Size	Upper Seal Bore (In.)	Min ID Through seal assy.(In)	Lower Seal Bore(in)**	Min ID Through seal assy. (In.)
4-1/2"	2.500	1.875	1.968	1.312
5-1/2"	3.250	2.500	2.688	1.968
6-5/8"	4.000	3.250	3.250	2.406
7"	4.000	3.250	3.250	2.406
7-5/8"	4.000	3.250	3.250	2.406
9-5/8"	6.000	4.875	4.750	3.875

**Packer for these casing sizes also available with other seal bore and Seal assembly bore on order.

CPS-SB & SAB HYDRAULIC SET PERMANENT SEAL BORE PACKER

The CPS-SB is a hydraulic-set permanent packer set by applied hydraulic pressure against a temporary plugging device set below the packer.

The “CPS-SAB” has a large upper seal bore allowing the use of an anchor latch to create the largest possible I.D. through the packer and seals for

completions requiring large tubing sizes.

It is ideal for highly deviated and/or single-trip production and injection applications. This packer includes a one-piece mandrel, which eliminates a potential leak path. It has a low profile for greater running clearance to help reduce problems that may occur when running in highly deviated and horizontal wells

Applications

- Permanent Gravel-Pack Packing
- Vertical, Deviated and Horizontal wellbores
- Permanent sealbore production or isolation packing

Features and Benefits

- Designed for ease of milling
- Components keyed for milling.
- Hydraulic set
- Solid construction enables faster run-in without fear of impact damage or premature setting, making significant rig-time savings possible
- Unique interlocking expandable metal backup rings contact casing, creating a positive barrier to packing element extrusion
- Smooth, continuous ID sealing bore
- Two opposed sets of full-circle, full-strength slips ensure packer will remain properly set
- Packing element resists swab-off and packs off securely when packer is set
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-SB Permanent Production Packer specification guide

Casing		Recommend ed casing ID size (In.)	Gauge OD of Packer (Inch)	Min. Sealbore ID of Packer (Inch)	Min ID thru Seals (Inch)
Size	Weight (lbs/ft)				
5"	15-21	4.126-4.408	3.968	1.968	1.312
5-1/2"	13-17	4.892-5.125	4.500	2.500	1.865
6-5/8"	17-20	6.049-6.175	5.687	3.250	2.406
	17-32	5.675-6.175	5.468	3.250	2.406
7"	17-20	6.456-6.538	6.187	3.250	2.406
	20-32	6.094 – 6.456	5.687	3.250	
	32-38	5.920 – 6.094	5.468	3.250	
7-5/8"	24-33.7	6.765-7.025	6.375	3.250	2.406
	33.7-39	6.625-6.765	6.187	3.250	
8-5/8"	24-36	7.825-8.097	7.500	4.000	3.000
9-5/8"	32.3-53.0	8.535-9.001	8.125	4.750	3.000

Model CPS-SAB Permanent Production Packer specification guide

Casing Size	Upper Seal Bore (In.)	Min ID Through seal assy.(In)	Lower Seal Bore(in)**	Min ID Through seal assy. (In.)
4-1/2"	2.500	1.875	1.968	1.312
5-1/2"	3.250	2.500	2.688	1.968
6-5/8"	4.000	3.250	3.250	2.406
7"	4.000	3.250	3.250	2.406
7-5/8"	4.000	3.250	3.250	2.406
9-5/8"	6.000	4.875	4.750	3.875

**Packer for these casing sizes also available with other seal bore and Seal assembly bore on order.

CPS-FH HYDRAULIC SET RETRIVABLE PACKER

The Model CPS-FH Double-Grip Hydrostatic Single String Packer is a retrievable packer set by either the hydrostatic head of the well, tubing pressure, or both and retrieve by straight pull at a specified shear vale.

The Model CPS-FH Hydrostatic Packer is set by pressurizing the string to obtain a pressure differential in the

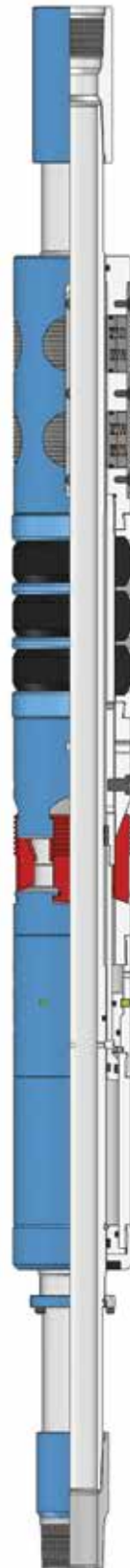
packer. Temporary plugging below the packer is necessary. Plugging is typically done with a Pressurization Sub, E-Hydro-Trip Sub, Sliding Sleeve or Landing Nipple used with Blanking Plug or another Hydraulic Setting Device.

Applications

- Production, injection, and zonal isolation
- Single-string selective completions or dual-string completions with multiple packers.
- Deviated wells or other applications when rotation for installation or removal is not beneficial.

Features and Benefits

- Hydraulically activated, hydrostatic-set, low-pressure, rig-pump-capable activation
- Field-adjustable shear release
- No tubing manipulation required to set the Packer
- Operationally simple
- Triple-seal multi-Durometer elements ensure pressure integrity over a wide range of temperatures and conforms easily to casing irregularities
- Hydraulic Hold-Down Buttons activated by well pressure enables the bidirectional gripping of Packer to withstand high differential pressure from below the packer.
- Ability to withstand high hydrostatic pressure
- Setting mechanism ensures sustained packoff force throughout the life of the packer.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-FH Hydraulic set retrievable Packer specification guide

Casing		Recommended casing ID size	Gauge OD of Packer (In)	Min. ID of Packer (Inch)	**Thread connection
Size	Weight(lbs/ft)				
4-1/2"	9.5-13.5	3.910 - 4.090	3.800	1.9	2-3/8" EU
5"	15-18	4.250 - 4.408	4.125	1.9	
	11.5-15	4.408 - 4.560	4.250	1.9	
5-1/2"	13.0-15.5	4.950 - 5.190	4.781	2	2-3/8" EU
	15.5-20.0	4.778- 4.950	4.641		
	20.0-23.0	4.625- 4.778	4.500		
	26	4.500	4.250		
6-5/8"	20 - 24	5.921- 6.049	5.661	2 or 2.42	2-3/8" & 2-7/8" EU
	24 - 28	5.791- 5.921	5.625		
	28 - 32	5.675 - 5.791	5.484		
7"	17.0-23.0	6.366- 6.538	6.154	2.42 or 3.00	2-7/8" & 3-1/2" EU
	23.0-26.0	6.276- 6.366	6.078		
	26.0-29.0	6.184- 6.276	5.968		
	26.0-32.0	6.094- 6.276	5.891		
	32.0-35.0	6.004- 6.094	5.817		
7 5/8"	20-24	7.025- 7.125	6.810	2.42 or 3.00	2-7/8" & 3-1/2" EU
	24-29.7	6.800-7.030	6.670		
	33.7-39	6.625- 6.765	6.453		
9-5/8"	40-47	8.681 - 8.835	8.463	3.00 or 3.95	3-1/2"& 4-1/2" EU
	47-53.5	8.535 - 8.681	8.354		

CPS-HS HYDRAULIC SET DOUBLE GRIP RETRIEVABLE PACKER

The Model CPS-HS Double-Grip Packer is a retrievable packer set by tubing pressure and retrieves by straight pull at a specified shear vale.

The Model CPS-HS Hydrostatic Packer is set by pressurizing the string to obtain a pressure differential in the packer. Temporary plugging below

the packer is necessary. Plugging is typically done with a Pressurization Sub, E-Hydro-Trip Sub, Sliding Sleeve or Landing Nipple used with Blanking Plug or another Hydraulic Setting Device.

Applications

- Production, injection, and zonal isolation
- Single-string selective completions or dual-string completions with multiple packers.
- Deviated wells or other applications when rotation for installation or removal is not beneficial.

Features and Benefits

- Hydraulically activated
- Field-adjustable shear release
- No tubing manipulation required to set the Packer
- Operationally simple
- Positive casing grip to secure packer
- Equalizing system above the element enables the Packer Easy running against well pressure and unloads the tubing during retrieving.
- Triple-seal multi-Durometer elements ensure pressure integrity over a wide range of temperatures and conforms easily to casing irregularities
- Hydraulic Hold-Down Buttons activated by well pressure enables the bidirectional gripping of Packer to withstand high differential pressure from below the packer.
- Ability to withstand high hydrostatic pressure
- Setting mechanism ensures sustained packoff force throughout the life of the packer.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-HS Hydraulic set retrievable Packer specification guide

Casing		Recommended casing ID size	Gauge OD of Packer (In)	Min. ID of Packer (Inch)	**Thread connection
Size	Weight(lbs/ft)				
4-1/2"	9.5-13.5	3.910 - 4.090	3.800	1.9	2-3/8" EU
5"	15-18	4.250 - 4.408	4.125	1.9	
	11.5-15	4.408 - 4.560	4.250	1.9	
5-1/2"	13.0-15.5	4.950 - 5.190	4.781	2	2-3/8" EU
	15.5-20.0	4.778- 4.950	4.641		
	20.0-23.0	4.625- 4.778	4.500		
	26	4.500	4.250		
6-5/8"	20 - 24	5.921- 6.049	5.661	2 or 2.42	2-3/8" & 2-7/8" EU
	24 - 28	5.791- 5.921	5.625		
	28 - 32	5.675 - 5.791	5.484		
7"	17.0-23.0	6.366- 6.538	6.154	2.42 or 3.00	2-7/8" & 3-1/2" EU
	23.0-26.0	6.276- 6.366	6.078		
	26.0-29.0	6.184- 6.276	5.968		
	26.0-32.0	6.094- 6.276	5.891		
	32.0-35.0	6.004- 6.094	5.817		
7 5/8"	20-24	7.025- 7.125	6.810	2.42 or 3.00	2-7/8" & 3-1/2" EU
	24-29.7	6.800-7.030	6.670		
	33.7-39	6.625- 6.765	6.453		
9-5/8"	40-47	8.681 - 8.835	8.463	3.00 or 3.95	3-1/2"& 4-1/2" EU
	47-53.5	8.535 - 8.681	8.354		

CPS-HP HYDRAULIC SET RETRIEVABLE PRODUCTION PACKER

The CPS-HP hydraulics set retrievable production Packer is set by hydraulic pressure on the tubing string and retrieved by straight pull. The packer features no downward mandrel movement during setting so it can be run in stacked applications. This feature also eliminates the need for staggering the setting pressures between packers, since all packers in the well can be reliably set

simultaneously. The CPS-HP packer is ideally suited for running below dual string packers as well, and may be set after the well has been flanged up.

With the CPS-HP packer, the tubing may be landed in tension, compression or neutral, in deviated and horizontal holes. It may also be run in applications using gas lift mandrels and safety valves where tubing rotation is not desirable.

Applications

- Production
- Injection
- Offshore completions with safety valves, gas lift mandrels
- Horizontal and deviated wells
- Stacked and dual string applications
- Zonal Isolation
- Coil tubing completions

Features and Benefits

- Adjustable straight pull release
- Can be landed in tension, neutral or compression
- No downward mandrel movement for stacked applications
- Elastomer and metallurgical options available for hostile environments
- Compensating piston counteracts pressure from below
- Works with tubing disconnect tools and expansion joints
- Can be run with a T-2 On-Off Tool and wireline plug to act as a bridge plug Ideal for use with fiber glass tubing, or coil tubing.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-HP Hydraulic set Retrievable Packer specification guide

Casing		Recommended casing ID size	Gauge OD of Packer (In)	Min. ID of Packer (Inch)	**Thread connection
Size	Weight(lbs/ft)				
4-1/2"	9.5-13.5	3.910 - 4.090	3.800	1.9	2-3/8" EU
5"	15-18	4.250 - 4.408	4.125	1.9	
	11.5-15	4.408 - 4.560	4.250	1.9	
5-1/2"	13.0-15.5	4.950 - 5.190	4.781	2	2-3/8" EU
	15.5-20.0	4.778- 4.950	4.641		
	20.0-23.0	4.625- 4.778	4.500		
	26	4.500	4.250		
6-5/8"	20 - 24	5.921- 6.049	5.661	2 or 2.42	2-3/8" & 2-7/8" EU
	24 - 28	5.791- 5.921	5.625		
	28 - 32	5.675 - 5.791	5.484		
7"	17.0-23.0	6.366- 6.538	6.154	2.42 or 3.00	2-7/8" & 3-1/2" EU
	23.0-26.0	6.276- 6.366	6.078		
	26.0-29.0	6.184- 6.276	5.968		
	26.0-32.0	6.094- 6.276	5.891		
	32.0-35.0	6.004- 6.094	5.817		
7 5/8"	20-24	7.025- 7.125	6.810	2.42 or 3.00	2-7/8" & 3-1/2" EU
	24-29.7	6.800-7.030	6.670		
	33.7-39	6.625- 6.765	6.453		
9-5/8"	40-47	8.681 - 8.835	8.463	3.00 or 3.95	3-1/2"& 4-1/2" EU
	47-53.5	8.535 - 8.681	8.354		

CPS-TS TENSION SET PACKER

The CPS-TS tension packer is a compact, economical, retrievable packer. Primarily used in waterflood applications, it can also be used for production, treating operations, and when a set-down packer is impractical. And because the CPS-TS is tension-set, it is ideally suited for shallow wells where set-down weight is not available.

The packer can be set by applying right hand torque to the tubing. While the right hand torque applied, the tubing is picked up and appropriate amount of tension is applied to set the Packer. Packer can be released by simply picking up the tubing. The shear release mechanism uses slotted brass shear screws which can be easily accessed for adjustment in the field.

Applications

- Production
- Injection
- Completion, Well servicing and treating operation

Features and Benefits

- Case Hardened Drag blocks make for extended life.
- Fullbore Mandrel.
- Automatic J-slot provides for easy release.
- Incorporates both a rotational and a field adjustable shear safety release.
- Uses proven one-piece packing element.
- Available in all metallurgical and Elastomers conforming to NACE
- MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well
- Services requirements.
- Available in All API & Premium thread connections



Casing		Recommended casing ID size	Gauge OD of Packer (In)	Min. ID of Packer (Inch)	**Thread connection
Size	Weight(lbs/ft)				
5-1/2"	13.0-14.0	5.012	4.813	2.40	2-3/8" & 2-7/8" EUE
	14.0-20.0	4.778- 5.012	4.625	2.40	
	20.0-23.0	4.670- 4.778	4.500	2.40	
	23.0-26.0	4.548- 4.670	4.406	2.40	
7"	17.0-20.0	6.456-6.538	6.250	3.00	2-7/8" & 3-1/2" EUE
	17.0-26.0	6.276 - 6.538	6.000	3.00	
	26.0-32.0	6.094 - 6.276	5.875	3.00	
	29.0-35.0	6.004 - 6.184	5.812	3.00	
	35.0	6.004	5.812	3.00	
9-5/8"	32.3-43.5	8.755 - 9.001	8.500	4.00	4-1/2" EUE
	43.5-53.5	8.535- 8.755	8.250	4.00	

CPS-CS COMPRESSION SET PACKER

The CPS-CS compression packer is a compact, economical, retrievable packer. Primarily used in waterflood applications, it can also be used for production, treating operations, and when a set-down packer is impractical. And because the CPS-CS is compression-set, it is ideally suited for shallow wells where set-down weight is not available.

The packer can be set by applying right hand torque to the tubing. While the right hand torque applied, the tubing is lowered and appropriate amount of set down weight is applied to set the Packer. Packer can be released by simply picking up the tubing. The shear release mechanism uses slotted brass shear screws which can be easily accessed for adjustment in the field.

Applications

- Production
- Injection
- Completion, Well servicing and treating operation

Features and Benefits

- Case Hardened Drag blocks make for extended life.
- Fullbore Mandrel
- Automatic J-slot provides for easy release.
- Incorporates both a rotational and a field adjustable shear safety release.
- Uses proven one-piece packing element.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



Casing		Recommended casing ID size	Gauge OD of Packer (In)	Min. ID of Packer (Inch)	**Thread connection
Size	Weight(lbs/ft)				
5-1/2"	13.0-14.0	5.012	4.813	2.40	2-3/8" & 2-7/8" EUE
	14.0-20.0	4.778- 5.012	4.625	2.40	
	20.0-23.0	4.670- 4.778	4.500	2.40	
	23.0-26.0	4.548- 4.670	4.406	2.40	
7"	17.0-20.0	6.456-6.538	6.250	3.00	2-7/8" & 3-1/2" EUE
	17.0-26.0	6.276 - 6.538	6.000	3.00	
	26.0-32.0	6.094 - 6.276	5.875	3.00	
	29.0-35.0	6.004 - 6.184	5.812	3.00	
	35.0	6.004	5.812	3.00	
9-5/8"	32.3-43.5	8.755 - 9.001	8.500	4.00	4-1/2" EUE
	43.5-53.5	8.535- 8.755	8.250	4.00	

CPS-"CR-3"MECHANICAL SET RETRIEVABLE PACKER

The CR-3 Packer is a Mechanical compression-set production packer intended for a broad range of production applications. It is a compression-set packer, suitable for stimulation and treating applications in a single/double-grip configuration. Applications in which excessive bottomhole pressures have been depleted, a single-grip

version can be used as an economical production packer.

It is set by applying a quarter turn to the right at the packer followed by set down weight. The packer is released by straight pick up to open the large by-pass allowing equalization. After equalization, the packing elements release reducing tendency of swabbing when pulling out of wellbore.

Applications

- Squeeze Cementing
- Acidizing
- Formation fracturing
- Well Testing & Servicing

Features and Benefits

- Holds high pressure differentials from above or below.
- The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, and straight pull release.
- Reliable Three-piece, dual-durometer sealing elements provide better pack off Bypass valve is below upper slips so the debris is washed from slips when the valve is opened Benefits.
- Bypass valve opens before upper slips are released
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections and Elastomers type



CR-3 PACKER Technical information

Casing		Recommended casing ID size	Max Gauge OD of Packer (In.)	Min. ID of Packer (Inch)	Thread connection
Size	Weight(lbs/ft)				
4-1/2	9.5-13.5	3.920-4.090	3.786	1.938	2-3/8" EUE
	15.1	3.826	3.620	1.500	
5-1/2	14-15.5	4.950-5.012	4.796	1.995	*2-3/8" & 2-7/8" EUE
	15.5-20	4.778-4.950	4.656	1.995	
	20-23	4.670"- 4.778	4.515	1.995	
	26.8	4.375	4.406"	1.995	
6-5/8	20	6.049	5.827	2.406	2-3/8" & 2-7/8" EUE
	24-28	5.791-5.921	5.603	2.406	
	28-32	5.675-5.791	5.490	2.406	
7	17-20	6.456-6.538	6.281	2.441	**2-7/8" & 3-1/2" EUE
	20-26	6.276 - 6.456	6.093	2.441	
	26-29	6.184- 6.276	5.939	2.441	
	32-35	6.004 - 6.094	5.827	2.441	
7-5/8	24	7.025	6.827	2.441	**2-7/8" & 3-1/2" EUE
	24-29.7	6.875 -7.025	6.687	3.000	
9-5/8	40-47	8.681 - 8.835	8.453	3.958	
	47-53.5	8.535 - 8.681	8.233	3.958	

* For casing Size 5-1/2" the packer can also be supply with 2-7/8" Tubing with 2.365" ID

** For casing Size 7" the packer can also be supply with 3-1/2" Tubing with 3" ID

- Packer can be supplied with any API and premium threads on request.

CPS-™IX™ MECHANICAL SET RETRIEVABLE PACKER

The CPS-IX Mechanical Production Packer is a retrievable, double-grip compression or tension-set production packer that can be left in tension, compression, or in a neutral position, and will hold pressure from above or below. A large internal bypass reduces the swabbing effect during run-in and retrieval, and closes when the packer is set. When the packer is released, the bypass opens first, allowing the pressure to equalize before the upper slips are released.

The CPS-IX also features a patented upper-slip releasing system that reduces the force required to release the packer. A non-directional slip is released first, making it easier to release the other slips.

Applications

- Zonal Isolation, Injection and Production.
- Shallow wells

Features and Benefits

- Holds high pressure differentials from above or below
- The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, 1/4 turn right-hand release.
- Can be set using tension or compression Only
- one-quarter right rotation is required to set and release
- Field-proven releasing system
- Optional safety-release features available upon request
- Bypass valve is below upper slips so the debris is washed from slips when the valve is opened Benefit
- Field-proven design meets most production, stimulation, and injection needs.
- Can be run with a Model T-2 On-Off Tool Can be left in tension, compression, or neutral position.
- Bypass valve opens before upper slips are released.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections and Elastomers type
- Validated to withstand 7,500 psi differential pressure and 300° F Temperature

The CPS-IX can easily convert to CPS VI-X with the advantage of being able to set on Electric line or hydraulically- just remove the shear screws and install drag blocks and drag block springs. An On-Off Tool Stinger with a Wireline Plug installed can be attached to the top of this packer. This packer can then be lubricated in the hole and set under pressure. Once set, casing pressure can be bled off, and the tubing with an On-Off Tool Overshot can be run and latched onto the packer. The Wireline Plug can then be removed.



CPS-IX PACKER Specification Guide

Casing		Recommended casing ID size	Gauge OD of Packer (In.)	Min. ID of Packer (Inch)	Thread connection
Size	Weight(lbs/ft)				
5-1/2"	13.0-14.0	5.012	4.813	2.40	2-3/8" & 2-7/8" EUE
	14.0-20.0	4.778- 5.012	4.625	2.40	
	20.0-23.0	4.670- 4.778	4.500	2.40	
	23.0-26.0	4.548- 4.670	4.406	2.40	
7"	17.0-20.0	6.456-6.538	6.250	3.00	2-7/8" & 3-1/2" EUE
	17.0-26.0	6.276 - 6.538	6.000	3.00	
	26.0-32.0	6.094 - 6.276	5.875	3.00	
	29.0-35.0	6.004 - 6.184	5.812	3.00	
	35.0	6.004	5.812	3.00	
9-5/8"	32.3-43.5	8.755 - 9.001	8.500	4.00	4-1/2" EUE
	43.5-53.5	8.535 - 8.755	8.250	4.00	

CPS-“RSB” RETRIEVABLE SEAL BORE PACKER

The **CPS-RSB** Packer is a retrievable seal bore packer run on electric line with a wireline adapter kit and setting tool or on tubing using a hydraulic setting tool. All the load bearing parts are designed to withstand high

tensile loads and the bi-directional slips prevent any movement after setting. It is retrieved by a straight pull release mechanism using a CPS-R Retrieving Tool.

Applications

- High pressure production or injection
- Suitable for ERD wells
- Anchored or floating seal completions
- Vertical, Deviated and Horizontal wellbores
- Sealbore production or isolation packing
- Liner Top installation and straddle packer installation.

Features and Benefits

- Designed for use in vertical, deviated or horizontal well completion applications.
- Bi-directional slips prevent any movement after setting.
- An internal locking device maintains pack off.
- Retrieved by a straight pull shear release using a retrieving tool.
- Retrieving tool has an emergency shear release feature in the event that the packer does not release.
- Wireline or Hydraulic set
- Smooth, continuous ID sealing bore
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-RSB packer specification guide

Casing		Recommended casing ID size	Gauge OD of Packer (In.)	Min. Sealbore ID of Packer (Inch)	Min ID thru Seals (In.)
Size	Weight(lbs/ft)				
5"	11.5-15	4.408-4.560	4.250	2.688	1.968
5-1/2"	14-15.5	4.950-5.012	4.765	2.688	1.968
	17-20	4.778-4.892	4.593	2.688	
	20-23	4.670- 4. 778	4.485	2.688	
7"	17-20	6.456-6.538	6.250	3.250	1.995 or 2.406
	23-29	6.184 - 6.366	6.000	3.250	
	29-32	6.094 - 6.184	5.820	3.250	
	35-38	5.920 - 6.004	5.735	3.250	
7-5/8"	24-29.7	6.875-7.025	6.690	4.000	2.406 or 3
	29.7-33.7	6.765-6.875	6.580	4.000	
9-5/8"	36-40	8.835-8.921	8.619	4.750	3 or 3.875
	40-47	8.681- 8.835	8.465	4.750	
	47-53.5	8.535- 8.681	8.319	4.750	

Bottom thread connection types, sizes, are available on request

CPS-"PBR" HYDRAULIC SET RETRIEVABLE PACKER

The CPS-PBR Packer is a hydraulic set retrievable seal bore packer. It is run on tubing using an Anchor Seal Nipple and set by applying tubing pressure. It includes Large Upper bore of the Packer allows maximum flow through the completion string for high volume applications.

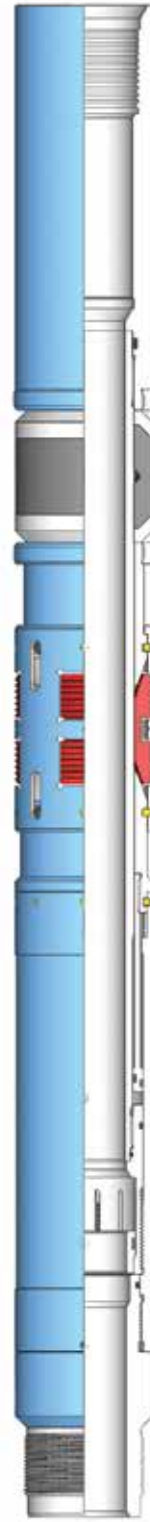
Applications

- High pressure production or injection
- Anchored or floating seal completions
- Vertical, Deviated and Horizontal wellbores
- Sealbore production or isolation packing
- Liner Top installation and straddle packer installation.

All the load bearing parts are designed to withstand high tensile loads and the bi-directional slips prevent any movement after setting. It is retrieved by a straight pull release mechanism using a CPS-R Retrieving Tool.

Features and Benefits

- Designed for use in vertical, deviated or horizontal well completion applications.
- Bi-directional slips prevent any movement after setting.
- An internal locking device maintains pack off.
- Retrieved by a straight pull shear release using a retrieving tool.
- Retrieving tool has an emergency shear release feature in the event that the packer does not release.
- Wireline or Hydraulic set
- Smooth, continuous ID sealing bore
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections



CPS-PBR Packer specification guide

Casing		Recommended casing ID size	Gauge OD of Packer (In.)	Upper Bore (Inch)	Min. Sealbore ID of Packer (Inch)	Min ID thru Seals (In.)
Size	Weight(lbs/ft)					
5"	11.5-15	4.408-4.560	4.250	3.000	2.688	1.968
5-1/2"	14-15.5	4.950-5.012	4.765	3.000	2.688	1.968
	17-20	4.778-4.892	4.593	3.000	2.688	
	20-23	4.670- 4. 778	4.485	3.000	2.688	
7"	17-20	6.456-6.538	6.250	4.000	3.250	1.995 or 2.406
	23-29	6.184 - 6.366	6.000	4.000	3.250	
	29-32	6.094 - 6.184	5.820	4.000	3.250	
	35-38	5.920 - 6.004	5.735	4.000	3.250	
7-5/8"	24-29.7	6.875-7.025	6.690	4.750	4.000	2.406 or 3
	29.7-33.7	6.765-6.875	6.580	4.750	4.000	
9-5/8"	36-40	8.835-8.921	8.619	4.750	4.750	3 or 3.875
	40-47	8.681- 8.835	8.465	4.750	4.750	
	47-53.5	8.535- 8.681	8.319	4.750	4.750	

Bottom thread connection types, sizes, are available on request

CPS-ISOLATION PACKER

The CPS Isolation Packer is a hydraulic set, single string tandem packer used in multiple zone well completions.

The Packer is set by applying hydraulic pressure to the tubing against a temporary plug located below to shear the setting screws and pack off the elements. It is released by straight

pull which shears the releasing screws allowing the packing elements to relax and equalizing pressure from tubing to annulus.

It can be used as the upper packer in a dual zone application or in multiple quantities when more than two zones are to be completed.



Features and Benefits

- Easily adjustable set and release shear screws, both field adjustable.
- Compact length makes it ideal for use in highly deviated wells.
- Economical design.
- Standard three piece nitrile packing elements, premium elements available on request.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections.

CPS-Isolation Packer specification guide

Casing		Recommended casing ID size	Gauge OD of Packer (In.)	Min. Sealbore ID of Packer (Inch)	Thread connection
Size	Weight(lbs/ft)				
4-1/2"	9.5-13.5	3.910 - 4.090	3.800	1.9	2-3/8" EU
5"	15-18	4.250 - 4.408	4.125	1.9	
	11.5-15	4.408 - 4.560	4.250	1.9	
5-1/2"	13.0-15.5	4.950 - 5.190	4.781	2	2-3/8" EU
	15.5-20.0	4.778- 4.950	4.641		
	20.0-23.0	4.625- 4.778	4.500		
	26	4.500	4.250		
7"	17.0-23.0	6.366- 6.538	6.154	2.42 or 3.00	2-7/8" & 3-1/2" EU
	23.0-26.0	6.276- 6.366	6.078		
	26.0-29.0	6.184- 6.276	5.968		
	26.0-32.0	6.094- 6.276	5.891		

CPS - "H" HYDRAULIC SETTING TOOL

The CPS Model "H" Hydraulic Setting Tools are used to run and set packers, bridge plugs and cement retainers on tubing or drill pipe. After dropping a Ball, the setting tool converts hydraulic pressure applied to the tubing into a mechanical force that is transmitted through the adapter kit to the tool. It allows setting in high angle or deviated wells where it is often difficult to use wireline equipment.

Features and Benefits

- Simple Operation
- Uses the same adapter kits for running as are used with a Baker 10# or 20# setting tool
- Automatically fills and drains tubing
- Hydraulically balanced while running in the hole to prevent premature setting
- Number of Pistons can be increased as per customer requirement
- Can withstand high tensile loads
- No rotation required to set or release the tool
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

CPS-"H" Setting Tool specification guide

Casing Size	Tool OD (In.)	Thread connection		Min. Sealbore ID of Packer (Inch)	Max-Setting Force(Lbs)
		Top	Bottom		
4-4-1/2"	3.5	2-3/8" EUE	BAKER #10	7,500	75,000
≥ 5"	3.88	2-7/8" EUE	BAKER #20	6,000	1,00000
≥ 6-5/8"	5	3-1/2" EUE			



CPS - "BT" WIRELINE PRESSURE SETTING TOOL

The CPS Model "BT" Wireline Setting Tools are used to run and set packers, bridge plugs and cement retainers on tubing or drill pipe.

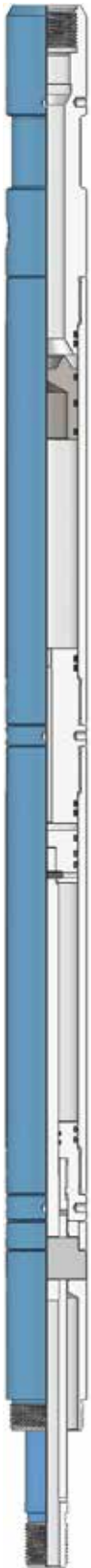
The combustion are used to provide the gradual development of force through pressure. The force in the setting tool creates the various parts which allow the successful setting of bridge Plugs, Cement retainers and packers etc.

The pressure that powers this tool is built up throughout of a Power charge. The pressure is confined to the correct portion of the tool through the use of O-ring seals.

The BT Wireline Pressure Setting Tool incorporates a manual bleeder valve to provide a safe and easy way of bleeding trapped pressure prior to disassembly after the tool has made a run in the well.

CPS-BT Wireline pressure setting Tool specification guide

Casing Size	Tool OD (In.)	Thread connection		Max Setting Force(Lbs)
		Top	Bottom	
4-4-1/2"	3.5	2-3/8" EUE	BAKER #10	75,000
≥ 5"	3.88	2-7/8" EUE	BAKER #20	1,00000
≥ 6-5/8"	5	3-1/2" EUE		



PUMP OUT PLUG

The Pump-Out Plug is installed to the bottom of the tubing string below the Packer to isolate the tubing from the annulus. To remove the plug, drop the Ball and apply pressure the Pump-Out Plug is removed to allow full opening. Also available with blank seat sub. The

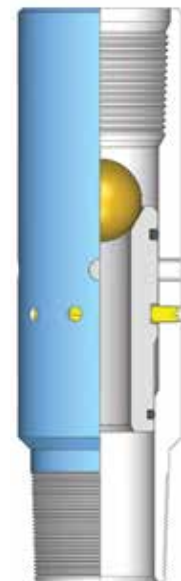
plug is available with the half Mule Full mule and bevelled lower end to aid the re-entry of Slick line/Wireline Entry Tools.

Features and Benefits

- Field Adjustable shear screws to achieve desired pressure rating
- Available in All API material grades
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections and O-Ring type
- High chamfered Lower End aid the re-entry of Slickline/Wireline Entry Tools

CPS-Pump Out Plug specification guide

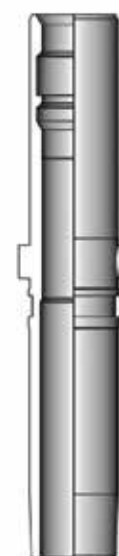
Tubing Size	Tool OD (In.)	Tool Id after shear the Ball Seat	Ball Size	ID of Ball Seat
2-3/8"	3.062"	1.937"	1 1/4"	1.000"
2-7/8"	3.668"	2.375"	1 1/2"	1.250"
3-1/2"	4.500"	2.937"	2 1/2"	2.250"
4-1/2"	5.563"	3.937"	3 1/2"	3.250"
5-1/2"	6.050"	4.500"	3 1/2"	3.250"



CPS - "T-2" ON - OFF TOOL

The CPST-2 On-Off Tool is tubing disconnect device that has an internal blanking plug locking profile with seal bore for utilizing flow control equipment. The Overshot has a box looking up which connects to tubing string and a pin looking down off the Stinger which connects to the packer. The WT has two basic components that comprise the Overshot. The Top Sub which contains two Bonded

rubber steel seals and the Jay Latch which has a J Slot configuration to locate and latch the On-Off Tool Stinger. The Jay Latch also has a wash over shoe configuration which allows cutting through debris. The Overshot automatically Jays up on Stinger when lowered into well.



Applications

- Mechanical, hydraulic or Wire line-set packer completions
- Zonal isolation above the packer
- Temporary abandonment of lower zones
- Tubing retrieval without disturbing the packer

Features and Benefits

- The tool enables the packer to be used as a bridge plug for zonal isolation or the temporary abandonment of lower zones, saving rig costs.
- The tool can be full-pressure tested at the surface to save rig time.
- Available in All API material grades
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections

CPST-2 On-Off Tool specification guide

Casing Size	Washover Shoe OD (In.)	Thread connection	Stinger or Slick joint Locking profile
4-1/2"	3.750	2-3/8"	1.812, 1.875, X, XN, R, RN, F, R
5-1/2"	4.516	2-3/8" & 2-7/8" EUE	1.812, 1.875, 2.125 X, XN, R, RN, F, R
7"	5.875	2-3/8" 2-7/8" & 3-1/2" EUE	2.313, 2.250, 2.750, 2.813 X, XN, R, RN, F, R
9-5/8"	8.255	3-1/2" & 4-1/2" EUE	2.750, 2.813, 3.312 X, XN, R, RN, F, R

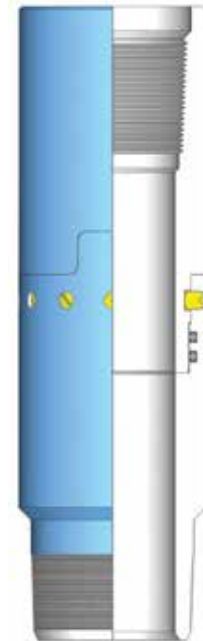
CPS-K SHEAR OUT SAFETY JOINT

Model CPS-K Shear out Safety Joint provides a means of releasing the tubing string from the rest of the completion in an emergency. A straight pull separates the tool at a

predetermined shear value. The Model K Shear Safety Joint allows torque to be transmitted through the tool without affecting the shear screws.

Features and Benefits

- The shear value is field adjustable.
- Allows the application of torque without affecting the shear screws.
- Field proven design.
- Additional sizes available on request.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections



CPS- Shear out safety Joint specification guide

Tubing Size	Tool OD (In.)	Tool Id	Max Shear (Lbs.)
2-3/8"	3.062	1.985	54,000
2-7/8"	3.640	2.485	54,000
3-1/2"	4.500	2.985	60,000
4-1/2"	5.563	3.985	108,750

CPS-RS ROTATIONAL SAFETY JOINT

The model CPS-RS Rotational Safety Joint provides for emergency release of the tubing string. The RH Rotational Safety Joint uses larger square left-hand threads to

separate the upper and lower subs with right-hand rotation abandoning any production equipment below.

Features and Benefits

- The shear value is field adjustable.
- Field proven design.
- Additional sizes available on request.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections

CPS-RS Rotational Safety Joint specification guide

Tubing size	Tool OD(In.)	Tool Id (In.)
2-3/8"	3.062	1.985
2-7/8"	3.640	2.485
3-1/2"	4.500	2.985
4-1/2"	5.563	3.985



CPS-NR EXPANSION JOINT

The CPS-NR Expansion Joint is designed to allow expansion or contraction of the tubing during injection, treating and production operations. The Expansion Joint is designed to transmit torque

throughout the stroke of the tool. Pressure is contained with a bonded seal system as standard equipment. Premium seals are available upon request.

Features and Benefits

- Tool locks in fully extended, fully collapsed or mid-stroke position with shear screws.
- Full-length keys provide transmission of torque through full length of travel.
- Torque transmitted through tool throughout stroke of tool.
- Shear values are field adjustable.
- Bonded HNBR seals standard equipment.
- Available in 4, 6, 10, 15, 20 feet
- stroke length standard other lengths available upon request.
- Temperature rating up to 325° F [162,78° C] standard Higher temperature rating determined by seals used.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements
- Available in All API & premium thread connections

CPS-NR Rotational Safety Joint specification guide

Tubing size	Tool OD(In.)	Tool Id (In.)
2-3/8"	3.260	1.990
2-7/8"	4.000	2.409
3-1/2"	5.010	2.990
4-1/2"	6.375	3.938



CPS-E ROTATIONAL EXPANSION JOINT

The CPS-E Expansion Joint is designed to allow expansion or contraction of the tubing during injection, treating and production operations. The E joint is also a swivel joint, unless extended to its full stroke when a clutch

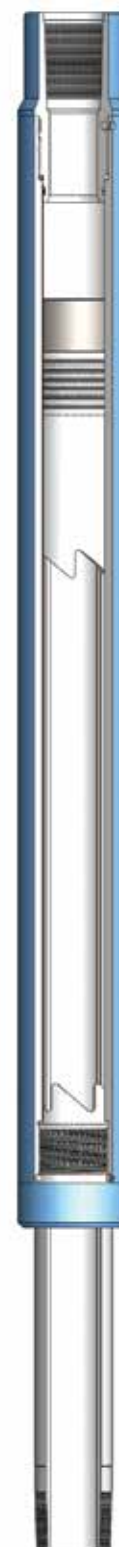
engages and allows torque to be transmitted through the joint. Pressure is contained with a bonded seal system as standard equipment. Premium seals are available upon request.

Features and Benefits

- Torque transmitted at full opening of tool.
- Bonded HNBR seals standard equipment.
- Available in 4, 6, 10, 15, 20 feet stroke length standard. other lengths available upon request.
- Temperature rating up to 325° F [162,78° C] standard.
- Higher temperature rating determined by seals used.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections

CPS-E Rotational Safety Joint specification guide

Tubing size	Tool OD(In.)	Tool Id (In.)
2-3/8"	3.260	1.990
2-7/8"	4.000	2.409
3-1/2"	5.010	2.990
4-1/2"	6.375	3.938



CPS-POLISHED BORE RECEPTACLE

The CPS PBR Polished Bore Receptacle is used in a well completion to provide a means of sealing the tubing to the top of the production packer while maintaining maximum ID. It can accept either a latching type or locator seal assembly. It is made up

to the top of the packer and provides an upper seal bore to allow tubing retrieval without releasing the packer. The PBR is run with the seal assembly in place. Following tubing retrieval, the PBR can be released from the packer using the pulling tool and right-hand rotation.

Features and Benefits

- Equipped with standard nitrile seals.
- Upper Right-hand box thread to allow right-hand rotation to release PBR from the packer.
- After packer setting and testing the locator seal assembly is released by straight pull on the tubing to shear the screws and allow space out.
- Can accommodate locator seal assemblies.
- Available in 5, 10, 15 and 20 foot lengths.
- Allows tubing retrieval while leaving the packer and PBR in place.
- Allows subsequent PBR retrieval with right-hand rotation pulling tool.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections.

size Inches	PBR			
	Max O.D inches	Min I.D Inches	PBR Length Feet (m)	Max Stroke Length Feet (M)
3.00	3.660	2.370	5.500	3.0
3.00	3.660	2.370	6.050	4.0
3.00	3.660	2.370	7.718	6.0
3.00	3.660	2.370	12.052	10.0
4.750	5.750	3.875	5.000	3.500
4.750	5.750	3.875	10.000	8.500
4.750	5.750	3.875	15.000	13.500
4.750	5.750	3.875	20.000	18.500



CPS-TUBING SWIVEL

The CPS Tubing Swivel is designed for use in multi string packer completions to facilitate their assembly. The Downhole Tubing Swivel allows easy makeup of the tubing by allowing rotation of the tubing below the dual string packer.

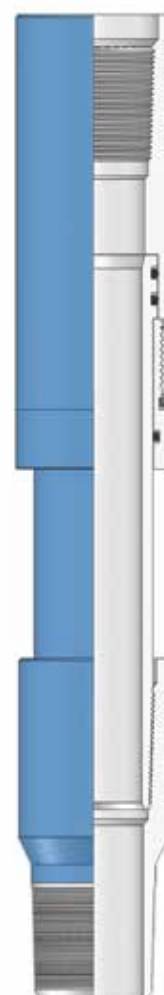
The tubing below the packer may be made-up to the lower end of the long string or short string of the packer without having to rotate the packer or the tubing below the packer simply by turning the swivel joint.

Features and Benefits

- Field proven design.
- Temperature rating up to 325° F [162,78° C] standard.
- Higher temperature rating determined by seals used.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections.

CPS-Tubing Swivel specification guide

Tubing size	Tool OD(In.)	Tool Id (In.)
2-3/8"	3.062	1.985
2-7/8"	3.640	2.485
3-1/2"	4.500	2.985
4-1/2"	5.563	3.985



CPS-ANCHOR LATCH SEAL ASSEMBLY

The Anchor latch seal Assembly positions the seal units in the polished bore of the packer at the bottom of the available stroke. With a slight amount of set-down weight, the anchor latch will snap into the top thread of the packer mandrel or polished bore receptacle. This feature allows an upward pull to be applied to the tubing string to positively confirm proper location and operation.

Applications

- Single or multiple Zone completions

To release the anchor latch, an upward pull combined with right-hand rotation of the tubing at the latch, release the anchor from the packer bore. The releasing mechanism of the anchor makes it ideal for completions where tubing movement is not desirable.

Features and Benefits

- Field proven design.
- Easy string-in and release procedure.
- Available in Bonded, and V-type chevron seal units
- Debris-tolerant standard bonded seal unit.
- Prevention of Seal movement.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections



CPS- Anchor Latch Seal Assembly specification guide

Size (mm)	Max OD(In.)	Min Id (In.)	Standard Top Connection
5.000 x 2.688"	3.500	1.950	2-3/8" EUE
5.500" x 3.000	3.820	2.350	2-7/8" EUE
7.000, 7.625 x3.250"	4.630	2.410	2-7/8" EUE
7.000, 7.625 x4.000"	5.290	3.040	3-1/2" EUE
9.625 x 4.750	7.000	3.280	3-1/2" EUE
9.625 x 6.000	7.000	4.870	4-1/2" EUE

CPS-LOCATOR TUBING SEAL ASSEMBLY

The CPS Locator Tubing Seal assemblies are used with Seal Bore packer to provide leak-proof seal

between the Packer Bore and production tubing string.

Seal Type

The Bonded Seal is tolerant to damage from debris, tubing movement and unloading of seals under pressure. Standard Seal material is nitrile which is recommended for non H₂S environments. For H₂S

environment Viton, HNBR and Aflas sealingsystem can be supply on request

LTSA have No Go locator Sub which allow the LTSA to land over the top of the packer. The LTSA supplied standard length 6, 10, 15 feet can be vary on request.

Features and Benefits

- Seal are debris-and movement-tolerant
- Bonded seals can be unloaded under differential pressure.
- Seal unit used with anchors and Locators optimize seal placement in polished bores.
- Provides with Concentric coupling and Bottom Sub to connect with Bottom tail pipe.
- Provides with one feet seal length.
- Provides necessary ID for other Wireline Tool.
- Available in All API and premium Top connection.
- Can be supply with the Blank, Half Mule, Locator latch type, and Threaded type Bottom Sub.
- Available in all metallurgical and Elastomers conforming to
- NACE MR 0175 or H₂S, and suitable for standard normal/H₂S,
- CO₂ well services requirement.
- Have same pressure and temperature rating with tubing.



Recommended Min Seal bore ID of Packer (in.)	OD (In.) of seal unit	Min ID thru Seals Assy. (In.)	Pressure Rating (Psi)	Tubing Thread Connection
1.968	1.875	1	9,000	2-3/8" EU
2.687	2.673	1.963	9,000	2-3/8" EU
3	2.985	2.250	12,000	2-7/8" EU
3.250	3.234	2.375	10,000	2-7/8" EU
3.875	3.859	2.875	10,000	2-7/8" EU
4	3.984	3.030	10,000	3-1/2"EU
4.750	4.734	3.875	9,500	3-1/2"EU
6	5.984	4.875	9,200	4-1/2"EU

CPS-AUTO ORIENTING BOTTOM SUB WITH HALF MULE SHOE

The bottom sub of LTSA is provided with double-start helical groove and two Guide Pins. Half Mule Shoe as shown in the accompanying illustration. The double start helix provides for uniform self-orienting action of the Half Mule Shoe to permit easy entry in the Packer bore.

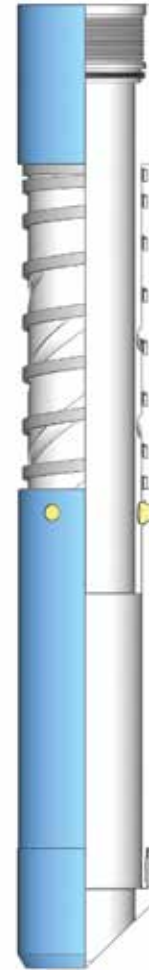
Muleshoe guides provide a means to guide the end of the tubing away from the casing wall, and then enter liner tops or the packer bores. The

length of the muleshoe varies with the application, from centralization, to seal guide and protection, to flow isolation sleeve.

Self-aligning muleshoe guides allow the end of the guide to rotate and orient with the liner top without rotation of the tubing. This tool is especially useful in dual wellbore or horizontal completions where control of tubing rotation downhole is difficult.

Features & Benefits

- Can be supply with the Blank, Half Mule, Locater latch type, and Threaded type Bottom Sub.
- Available in all metallurgical and Elastomers conforming to
- NACE MR 0175 or H2S, and suitable for standard normal/H2S,
- CO2 well services requirement.
- Have same pressure and temperature rating with tubing.



SEAL BORE EXTENSION

Seal Bore Extension can be run below Seal Bore Packer. A Sealbore extension is run to provide additional sealing bore when a long seal assembly is run to accommodate considerable tubing movement.

The Seal Bore Extension has the same ID as corresponding Packer seal bore

it is run with. Thus all seals of a long seal assembly seal off in the Seal Bore Extension. If the top set seals, normally sealing in the packer bore should get damaged, the seal bore extension still get provide sealing surfaces for the lower seals

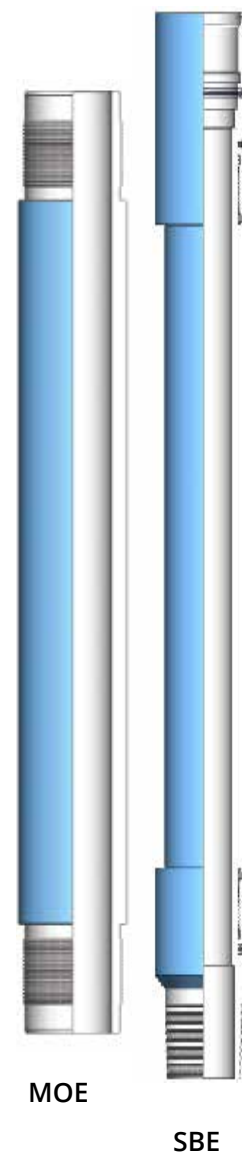
MILL OUT EXTENSION

Mill Out Extension can directly run directly below model Seal Bore production Packers when a Seal Bore Extension or other tailpipe is run below the Packer. Mill out Extension has ID slightly more than the seal bore id of Packer and Seal Bore Extension. The mill Out Extension is required to

accommodate the Mandrel and catch the Sleeve of the Packer Milling Tool when the Packer milled up. The Mill out extensions should always be run directly below the Packe.

Features and Benefits

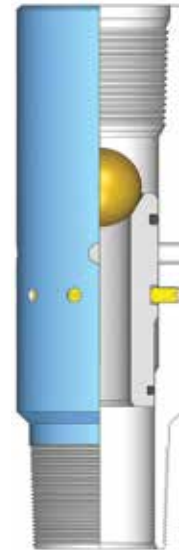
- Connects below the Seal Bore Packer.
- Having smooth ID equals to the Seal Bore of Packer provide better sealing.
- Provide with Concentric coupling and Bottom
- Sub to connect with Bottom tail pipe.
- O-ring with Teflon Back up Ring provides high pressure and temperature.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for stand ard normal/H2S, CO2 well services requirement.
- Have same pressure and temperature rating with Packer Body.



CPS-BALL ACTUATING CIRCULATING VALVE

The circulating valve was designed as a means of opening the tubing above a packer to permit reversing, equalizing, circulating, and spotting of acids or other fluids. The Shear

pins prevent premature opening while running in the hole. The CPS Ball actuated circulating sleeve is used as a means of opening the tubing to the annulus.



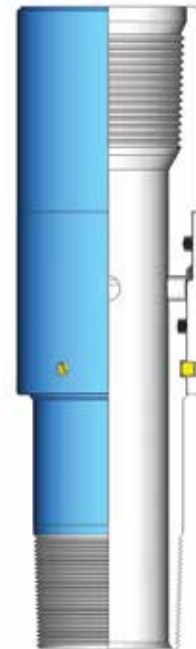
PRESURE ACTUATED CIRCULATING VALVE

The pressure-actuated circulating sleeve is used as a means of opening the tubing to the annulus. The shear pinned outer sleeve is displaced once

the predetermined opening pressure is applied. The sleeve does not require the aid of a wireline sinker bar or ball such as the B bar/ball sleeve does.

Features and Benefits

- Rugged heavy duty collet allows repeated use.
- Large by-pass area.
- Full bore I.D. matching the packer bore.
- Remains open when running or retrieving thus minimizing swabbing tendencies.
- Available in all metallurgical and Elastomers conforming to
- NACE MR 0175 or H2S, and suitable for standard
- Normal / H2S, CO2 well services requirement.
- Have same pressure and temperature rating with Packer Body.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard and normal/H2S, CO2 well services requirement.
- Have same pressure and temperature rating with Packer Body.



CPS-Circulating Valve specification guide

Tubing size	Tool OD(In.)	Tool Id (In.)
2-3/8"	3.750	1.985
2-7/8"	4.515	2.485
3-1/2"	4.500	2.985
4-1/2"	5.563	3.985

CPS-E HYDROTRIP PRESSURE SUB

The CPS Model E Hydro-Trip Sub is used to hydraulically set tools, such as hydraulic packers with the application of tubing pressure. Setting is achieved by circulating a ball to a seat in the sub, and applying sufficient pressure to activate the setting mechanism in the tool below.

When further pressure is applied to the ball, the mechanism shears, allowing the ball to pass down the tubing string. After the Hydro-Trip Sub has been set, the tool provides an open bore for passage of drop balls or wireline equipment.

Operation To set a hydraulic packer, drop or circulate a ball down the tubing to the seat in the HydroTrip Sub. Apply sufficient tubing pressure to activate the setting mechanism in the packer. After the packer is set, a pressure increase shears the shear screws in the shear ring, to allow the ball seat to move down until the fingers snap back into a groove. The sub is then fully open with no restrictions to productions, and the ball passes on down the tubing.



Applications

- Temporary plug in tubing for setting hydraulically actuated packers.

Features & Benefits

- Works in single and dual completions.
- Can be run in any location in the tubing string.
- Single body joint with anti-torque lock screws full tubing ID post shear.
- Shear value can be adjusted Circulation available prior to ball drop.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections.
- Have same pressure and temperature rating with Packer Body.

CPS-E Hydrotrip Pressure Sub specification guide

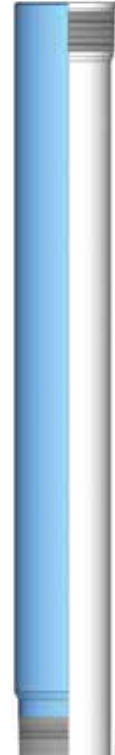
Tubing size	Tool OD(In.)	Tool Id (In.)
2-3/8"	3.750	1.985
2-7/8"	4.515	2.485
3-1/2"	4.500	2.985
4-1/2"	5.563	3.985

CPS-BLAST JOINT

Flow couplings / Blast joints are installed in the tubing opposite perforations in wells with two or more zones. These are heavy walled and are sized to help prevent tubing damage from the jetting action of the zone perforations. It should be installed above and below landing nipples or other restrictions that may cause turbulent flow. Help to extend the life of the well completion.

* Blast joint are available in all apigrade material and api threads other theard & material is available up on request

Basic applications are to help inhibit erosion caused by jetting action near perforations, installed opposite perforations in one or more zones. Furnished in various grades of materials with requiredend connections and different lengths to meet our customer's as well as API standard requirements.



CPS-PERFORATED / NON - PERFORATED SPACER TUBE

The Perforated Spacer Tube is used at the end of a tubing string to provide an alternate flow path in cases where wire line measuring devices are used. The Perforated Spacer Tube is made of low grade material and its assembly consists of a perforated nipple with standard tubing thread, a crossover coupling up, and a crossover sub down. Perforated Spacer Tube are

available with special box thread up and pin thread down, upon request.

The Non-Perforated Production Tube is made-up at the bottom of the production string. Its basic purpose is to act as a stinger (or extension) to keep the packer flapper valve open when producing or when working below the packer.

* Perforated / Non Perforated spacer tube are available in all API Grade Material & API threads. Other Material & threads are also available upon request.



CPSC-1 TUBING ANCHOR CATCHER

The CPS MODEL C-1 Tubing Anchor Catcher is a retrievable Double Grip Tubing Anchor designed to anchor the tubing string in tension or compression. When installed with the proper amount of tubing tension, this anchor prevents movement of the tubing string during rod pumping operations. This results in more oil production per pump stroke and in turn extends the life of the pump, rods and tubing decreases pumping costs.

The CPSC-1 Anchor Catcher incorporates an emergency shear release which is easily adjustable in the field. Unless otherwise specified, anchors are furnished with a total of 50,000 lbs secondary release shears.

The SC-1 Anchor utilizes drag block backed up by Inconel leaf springs which results in more positive drag, thus reducing repair costs by at least 50% of the cost for repairing older drag spring designs.



Features & Benefits

- Increase Pump efficiency.
- Left hand rotation to set and right hand to release.
- Straight pull emergency release mechanism.
- Field adjustable shear release value.
- Improve operating costs by reducing maintenance and down time cost by tubing or sucker rod wear
- Case hardened double grip Slips having 50-56 HRc Hardness are suitable to set inside all API casing grade
- Drag Blocks are for setting and releasing control.
- When the anchor catcher has been sheared the slips are completely retracted, permitting the slips to move up or down thus eliminating the potential damage on anchor catcher, tubing or casing.

Model CPSC-1 Tubing Anchor Catcher Technical information

Casing		Recommended casing ID size	Gauge OD of Packer (In.)	Min. ID of Packer	**Thread connection
Size	Weight(lbs/ft)				
4-1/2"	9.5-13.5	3.910" - 4.090"	3.75"	1.9	2-3/8" EU
5"	11.5-18	4.276" - 4.560"	4.12"	1.9	
5-1/2"	13.0-15.5	4.950" - 5.190"	4.62"	2" or 2.42"	2-3/8" or 2-7/8" EU
	20.0-26.0	4.548" - 4.778"	4.50"		
6-5/8"	20.0 - 32.0	5.675" - 6.049"	5.50"	2" or 2.42"	2-3/8" or 2-7/8" EU
7"	17.0-20.0	6.456" - 6.538"	6.25"	2.42" or 3.00"	2-7/8" or 3-1/2" EU
	20.0-38.0	5.920" - 6.456"	5.55"		
7-5/8"	24.0-39.0	6.625" - 7.025"	6.25"		
8-5/8"	24.0-49.0	7.511" - 8.079"	7.00"	3.00"	3-1/2" EU
9-5/8"	32.3-47	8.681" - 9.001"	8.25"		

BRIDGE PLUG

A downhole tool that is located and set to isolate the lower part of the wellbore. Bridge plugs may be permanent or retrievable, enabling the lower wellbore to be permanently sealed from production or temporarily isolated from a treatment conducted on an upper zone.

We deal in Wireline/Hydraulic type bridge plug which we supply in two designs:

- **Big Boy bridge plug**
- **Midget bridge plug**

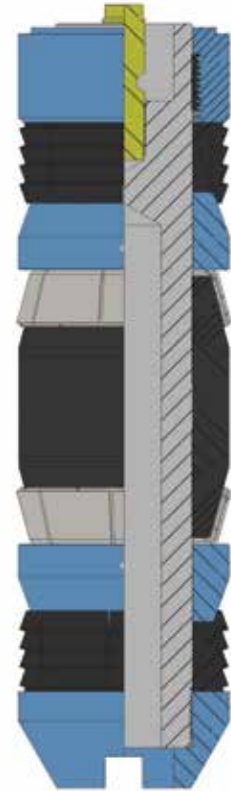
CPS- BIG BOY BRIDGE PLUG

The Big Boy Bridge Plug has proven to be a product that can be depended on. It has excellent running characteristics and secure sets. The plug can be set on different types of wireline pressure

setting tools. The Big Boy is designed for rapid drill-out while maintaining sufficient strength during the set. This plug sustains high pressures and temperatures.

Features & Benefits

- Electric wireline set
- Drillable
- Cast iron construction
- One piece slips - hardened to depth of wicker only
- Sets in any grade casing including P-110
- Form-fitting metal back-ups prevent rubber extrusion
- For temporary or permanent service
- Ratcheting lock ring holds setting force



CPS- MIDGET BRIDGE PLUG

The Midget Bridge Plug Series provides an economical means of zone isolation for fracturing or other treatments. The plugs are compact and require less drilling time when being removed. The

plug can be set on different types of wireline pressure setting tools. This plug sustains moderate pressures and temperatures.

Features & Benefits

- Electric wireline set
- Drillable
- Cast iron construction
- One piece slips - hardened to depth of wicker only
- Sets in any grade casing including P-110
- For temporary or permanent service
- Ratcheting lock ring holds setting force
- Small O.D.'s for speed and safety when running
- For temporary or permanent service
- Ratcheting lock ring holds setting force
- Small O.D.'s for speed and safety when running



Casing		Plug	Setting Range	Setting Tool	Elastomer
O.D.	PPF	O.D.			
2-3/8	3.3-5.9	1.71	1.867-2.107	B05	NITRILE/HNBR/ VITON/AFLAS
3-1/2	5.7-10.2	2.75	2.867-3.258	B10	
4-1/2	9.5-15.1	3.50	3.826-4.090	B10	
5-1/2	13.0-25.0	4.24	4.580-5.047	B20	
7.0	17.0-35.0	5.61	5.989-6.655	B20	
9-5/8	29.3-53.5	7.71	8.435-9.063	B20	
13-3/8	48.0-72.0	12.0	12.347-12.715	B20	

CPS-WIRELINE SET RETRIEVABLE BRIDGE PLUG

The CPS WR Retrievable Bridge Plug is a premium quality high performance WR style bridge plug. The WR Retrievable Bridge Plug is a product designed to isolate the wellbore when performing treatments such as fracturing, acidizing, surface equipment maintenance or temporary suspension of a producing formation. The WR is generally set using electric line wireline. This allows the plug to be logged on depth and accurately placed in the well. With the use of the CPS "H" Hydraulic Setting Tool the WR can also be conveyed into the well by Jointed or Coiled Tubing. This method allows

the operator to place the plug in a deviated well where wireline is not an option. The WR can be retrieved using Tubing, Coiled Tubing or in some cases Wireline by using the WR Retrieving Head. To retrieve the WR simply requires a set down force then pull tension to release there is not rotation required to pull the plug. Our WR Bridge Plugs are pressure tested by top quality third party consultants to the most exacting standards of the industry to ensure reliability for your operation.

Features and Benefits

- Can be set by hydraulic setting Tool/Wireline set
- Bidirectional Slip
- Three element sealing system to provide superior pressure containment
- Built in differential pressure equalizing system
- WR will not release unless equalizing sleeve has been shifted
- Ability to hang pressure recorders
- One piece double acting slips to prevent movement in the casing
- Multiple retrieving option



CPS-WR Bridge Plug technical specification

Casing		Setting Range	Plug O.d.(Inch)	Setting Tool	Elastomer
O.D.	PPF				
3-1/2	7.7 - 10.2	2.922 - 3.068	2.700	B05	NITRILE/HNBR/ VITON/AFLAS
4	9.5 - 11.0	3.476 - 3.548		B10	
	10.46 - 12.95	3.340 - 3.476	3.187		
s4-1/2	9.5 - 13.5	3.920 - 4.090	3.750		
	13.5 - 15.1	3.826 - 3.920	3.650		
	15.1 - 16.6	3.754 - 3.826	3.625		
5	11.5 - 15.0	4.408 - 4.560	4.125	B20	
	18.0 - 21.0	4.154 - 4.276	3.969		
5-1/2	13.0 - 20.0	4.778 - 5.156	4.625		
	20.0 - 23.0	4.670 - 4.778	4.500		
	23.0 - 26.0	4.548 - 4.670	4.406		
7	17.0 - 26.0	6.276 - 6.538	5.969		
	26.0 - 32.0	6.094 - 6.276	5.875		

CPS - CEMENT RETAINER

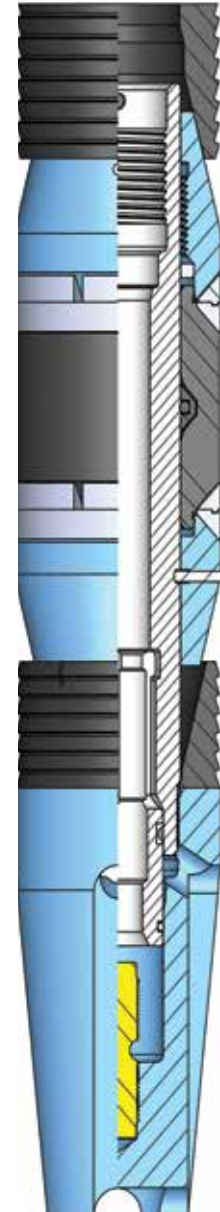
Wireline/Hydraulic set cement retainer is a high quality tool for squeeze cementing. The sleeve valve is controlled from the surface by simply picking up to close and setting d o w n to open. The valve is automatically closed when the stinger is removed

from the retainer. This retainer plug sustains high pressure and temperature. It may be set on a Wireline/Hydraulic setting tool or mechanically by changing the top slips. It can also convert to a bridge plug by replacing the sliding sleeve by solid plug.

Features

- Electric Wireline/Hydraulic set / Mechanical set.
- Drillable.
- Cast iron construction.
- One piece slips - hardened to depth of wicker only.
- Sets in any grade casing including P-110.
- Metal back-up rings prevent rubber extrusion
- For temporary or permanent service
- Ratcheting lock ring holds setting force.
- Temperature rating 325°F.
- Differential pressure 10000 psi

Casing		Plug / Retainer	Setting Range	Setting Tool	Elastomer
O.D.	PPF	O.D.			
4-1/2	9.5-15.1	3.593	3.826-4.090	B10	NITRILE/HNBR/ VITON/AFLAS
5-1/2	13.0-23.0	4.312	4.670-5.118	B20	
6-5/8	17.0-34.0	5.375	5.959-6.135	B20	
7.0	32.0-38.0	5.375	5.959-6.135	B20	
7.0	17.0-35.0	5.687	6.004-6.538	B20	
9-5/8	29.3-53.3	8.125	8.435-9.063	B20	
10-3/4	32.7-51.0	9.437	9.660-10.192	B20	
13-3/8	48.0-72.0	12.000	12.175-12.715	B20	



LINER HANGER EQUIPMENT

We Know Your Well Very Well..

CPS DOVETAIL SLIP TYPE HYDRAULIC SET LINER HANGER

Hydraulic Liner Hanger is used to hang a liner in the well. It is set hydraulically by applied pressure through the run-in-string, and is designed to support medium to heavy liner loads. The hanger is widely used in deep and high angle wells, where actuation of mechanical-set hangers may not be preferred. A setting ball is dropped and/or circulated to a ball seat in the landing collar or running string. Differential pressure acts on the hydraulic cylinder, moving slips up to the set position.

Applications

- Offshore and Deviated Wells with tight turns.
- High pressure and High temperature wells.
- Well application requiring hanging heavy liners.
- Drill down applications.
- Vertical and horizontal wells.

Features & Benefits

- No tubing manipulation required during setting.
- Large multi slot design provides excellent bypass area for proper cementing.
- Available in Single Cone, Double Cone, and multi cone Dovetail type.
- Available in Rotating Non Rotating type design.
- High performance Roller bearing enables rotation during running and Cementing for proper cementing operation.
- Faster Running speed with Dovetail design.
- Dovetail Slip cone Design delivers lower and more uniform stresses on Casing and mandrel enhance hanging capacity.
- Manufactured from a heavy walled integral Tube which eliminates the no. of internal connections and provide maximum differential pressure rating and liner hanging capacity.
- Case hardened Slips having 50-56 HRc hardness are suitable to set inside all API casing grade.
- Protected type Slips are suitable for highly deviated well operations.
- Available in all metallurgical conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections and type.
- High Burst and Collapse pressure ratings.



Model CPS-HD Hydraulic set Rotating Liner hanger Technical specification guide

Liner x Casing Size	Casing Weight (lbs/ft)	Liner Hanger Max OD	**Liner Thread connection
4-1/2" x 7"	17-26	6.21"	4-1/2", 9.5-15.10# casing thread
	29-38	5.680"	
5" x 7"	23-26	6.050"	5", 11.5-24.1# casing thread
	29-32	5.780"	
	35-38	5.680"	
5-1/2" x 7"	17-26	4.781"	5-1/2", 14-23# casing thread
	29-32	4.641"	
5" x 7-5/8"	33.7 - 39	6.250"	5", 11.5-24.1# casing thread
5-1/2" x 7-5/8"	24.0-29.70	6.620"	5-1/2", 14-23# casing thread
	33.70-39	6.370"	
7"x 9-5/8"	36-43.5	8.430"	7", 17-35# casing thread
	40-47	8.380"	
	47-53.5	8.250"	
	58.40	8.120"	
7-5/8" x 9-5/8"	36-43.50	8.5"	7-5/8", 24-47.10# casing thread
	47-53.50	8.310"	
9-5/8" x 13-3/8"	54.50-68	12.00	9-5/8", 32.30-58.40# casing thread

** Threads shown above are standard for the respective Liner Hanger Mandrel sizes
other threads Can be supply on request when ordering.

CPS-“HS”SINGLE / DOUBLE CORE HYDRAULIC SET LINER HANGER

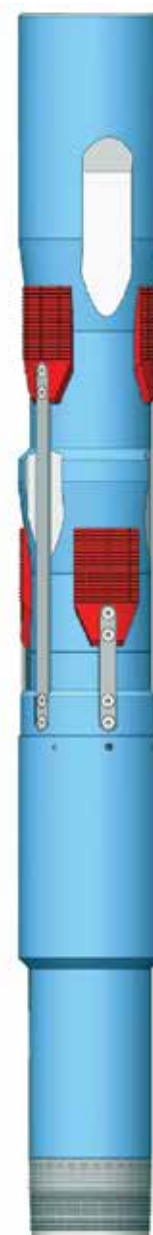
Hydraulic Liner Hanger is used to hang a liner in the well. It is set hydraulically by applied pressure through the run-in-string, and is designed to support medium to heavy liner loads. The hanger is widely used in deep and high angle wells, where actuation of mechanical-set hangers may not be preferred. A setting ball is dropped and/or circulated to a ball seat in the landing collar or running string. Differential pressure acts on the hydraulic cylinder, moving slips up to the set position.

Applications

- Offshore and Deviated Wells with tight turns.
- High pressure and High temperature wells.
- Well application requiring hanging heavy liners.
- Drill down applications.
- Vertical and horizontal wells.

Features & Benefits

- No tubing manipulation required during setting.
- Large bypass area for proper cementing.
- Available in Single Cone, Double Cone.
- Available in Rotating Non Rotating type design.
- High performance Roller bearing enables rotation during running and Cementing for proper cementing operation.
- Manufactured from a heavy walled integral Tube which eliminates the no. of internal connections and provide maximum differential pressure rating and liner hanging capacity.
- Case hardened Slips having 50-56 HRC hardness are suitable to set inside all API casing grade.
- Slips are protected with Split rings suitable for highly deviated well operations.
- Available in all metallurgical conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections and type.
- High Burst and Collapse pressure ratings.



Model CPS-HD Hydraulic set Liner hanger Technical specification guide

Liner x Casing Size	Casing Weight (lbs/ft)	Liner Hanger Max OD	**Liner Thread connection
4-1/2" x 7"	17-26	6.21"	4-1/2", 9.5-15.10# casing thread
	29-38	5.680"	
5" x 7"	23-26	6.050"	5", 11.5-24.1# casing thread
	29-32	5.780"	
	35-38	5.680"	
5-1/2" x 7"	17-26	4.781"	5-1/2", 14-23# casing thread
	29-32	4.641"	
5" x 7-5/8"	33.7 - 39	6.250"	5", 11.5-24.1# casing thread
5-1/2" x 7-5/8"	24.0-29.70	6.620"	5-1/2", 14-23# casing thread
	33.70-39	6.370"	
7"x 9-5/8"	36-43.5	8.430"	7", 17-35# casing thread
	40-47	8.380"	
	47-53.5	8.250"	
	58.40	8.120"	
7-5/8" x 9-5/8"	36-43.50	8.5"	7-5/8", 24-47.10# casing thread
	47-53.50	8.310"	
9-5/8" x 13-3/8"	54.50-68	12.00	9-5/8", 32.30-58.40# casing thread

** Threads shown above are standard for the respective Liner Hanger Mandrel sizes
other threads can be supply on request when ordering.

CPS-MS MECHANICAL SET LINER HANGER

CPS-MS Liner Hanger is set mechanically with either right or left-hand rotation, depending on the type of setting tool or design. Staggered cone design gives maximum bypass area to ease running in and circulation. Automatic J-cage allows hanger to return to the run-in position, should the hanger set prematurely while running in the well. The slip cage contains a "J" slot and high strength drag springs to manage the movement of the slips into contact with the cones. Mechanical Set Liner Hanger are set through

manipulation of the work string (pick-up & 1/4 right hand turn) line up the cones and the slips, and a further slack off sets the slips onto the casing wall.

This LH has two types Single cone / Double cone type with rotating or non-Rotating mechanism. Hydraulic liner hanger is couple with running tools, pack off bushing, float collar (if required), and float shoe and other tools.

Features & Benefits

- Automatic J-cage, allows hanger to return to run-in position constraining hanger preset while running in.
- Open-bottom J-cage, available in right or left-hand set.
- Large bypass area in run-in and set position.
- Slips profile provide more biting area to increase hanging capacity and reduce the possibility of damage while running in.
- Single or multiple cone designs available to match hanging capacity with liner strength, minimizing stress in supporting casing.
- Complete wells with less weight landed on wellheads.
- Give rise to improved cementing jobs.
- Prevent lost circulation.
- Provide good well control while drilling and completing.
- Impart more completion flexibility.
- Afford low-cost liner on appraisal wells.
- Liner Hangers are available with all API and premium thread connections.
- Case hardened Slips having 50-56 HRC hardness are suitable to set inside all API casing grade.
- Slips are protected with Split rings suitable for highly deviated well operations.
- Available in all metallurgical conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections and type.
- High Burst and Collapse pressure ratings.



Model CPS-MS Mechanical set Liner Hanger Technical specification guide

Liner x Casing Size	Casing Weight (lbs/ft)	Liner Hanger Max OD	**Liner Thread connection
4-1/2" x 7"	17-26	6.21"	4-1/2", 9.5-15.10# casing thread
	29-38	5.680"	
5" x 7"	23-26	6.050"	5", 11.5-24.1# casing thread
	29-32	5.780"	
	35-38	5.680"	
5-1/2" x 7"	17-26	4.781"	5-1/2", 14-23# casing thread
	29-32	4.641"	
5" x 7-5/8"	33.7 - 39	6.250"	5", 11.5-24.1# casing thread
5-1/2" x 7-5/8"	24.0-29.70	6.620"	5-1/2", 14-23# casing thread
	33.70-39	6.370"	
7"x 9-5/8"	36-43.5	8.430"	7", 17-35# casing thread
	40-47	8.380"	
	47-53.5	8.250"	
	58.40	8.120"	
7-5/8" x 9-5/8"	36-43.50	8.5"	7-5/8", 24-47.10# casing thread
	47-53.50	8.310"	
9-5/8" x 13-3/8"	54.50-68	12.00	9-5/8", 32.30-58.40# casing thread

** Threads shown above are standard for the respective Liner Hanger Mandrel sizes other threads can be supply on request when ordering.

CPS LINER TOP PACKER

The CPS Liner top Packer is used to prevent gas migration through the cement as it begins to set stopping any micro-annulus that may form without the packer in the well bore. It is run as an integral part of the original liner string. Designed to be set after the liner is cemented, the packer is set by picking up the running string, placing the setting dogs in the setting

tool assembly above the liner top/TBR and slacking off weight. Excess cement above the liner top packer can be circulated out after the packer is set.

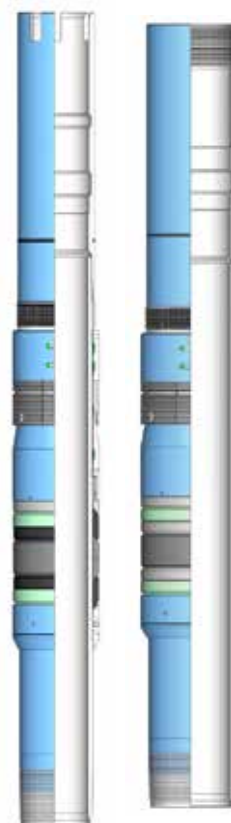
CPS LTP is available with or without hold down slips and with or without clutch profile on the top of the packer used with Rotating or Non rotating Liner Hanger

Applications

- Offshore and Deviated Wells with tight turns.
- High pressure and High temperature wells.
- Well application requiring hanging heavy liners.
- Liner Hanger application requiring Drill down Capabilities.
- Vertical and horizontal wells.

Features & Benefits

- Can be rotated during run-in and cementing operation.
- Available with or without hold down slips and can be pulled if needed in heavy oil applications.
- Optimizes chemical resistance to completion and production fluids with a variety of elastomer options for packer element and seal assemblies.
- Maintains element setting with mandrel lock ring.
- Facilitates high circulating rates with enhanced packer element design without risk of element washout.
- Anti-swab while running or reciprocating allows to achieve high running speeds.
- Eliminates extra components and connections with integral retrievable cementing bushing profile.
- Available in Rotating Non Rotating Clutch type design features.
- Manufactured from a heavy walled integral Tube which eliminates the no. of internal connections and provide maximum differential pressure rating and liner hanging capacity.
- Case hardened Slips having 50-56 HRC hardness are suitable to set inside all API casing grade.
- Hold down Slips prevents upward movement against differential pressure.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.
- Available in All API & Premium thread connections and type.
- High Burst and Collapse pressure ratings.



Model CPS Liner Top Packer Technical specification guide

Liner x Casing Size	Casing Weight (lbs/ft)	Liner Hanger Max OD	Liner Top Packer Min ID*	**Liner Thread connection
4-1/2" x 7"	17-26	6.21"	3.826	4-1/2", 9.5-15.10# casing thread
	29-38	5.680"		
5" x 7"	23-26	6.050"	4(24.1ppf)	5", 11.5-24.1# casing thread
	29-32	5.780"		
	35-38	5.680"		
5-1/2" x 7"	17-26	4.781"	4.670(23ppf)	5-1/2", 14-23# casing thread
	29-32	4.641"		
5" x 7-5/8"	33.7 - 39	6.250"	4(24.1ppf)	5", 11.5-24.1# casing thread
5-1/2" x 7-5/8"	24.0-29.70	6.620"	4.670(23ppf)	5-1/2", 14-23# casing thread
	33.70-39	6.370"		
7"x 9-5/8"	36-43.5	8.430"	6.276(26ppf) 6.184(29ppf)	7", 17-35# casing thread
	40-47	8.380"		
	47-53.5	8.250"		
	58.40	8.120"		
7-5/8" x 9-5/8"	36-43.50	8.5"	6.875(29.7ppf) 6.375(47.10ppf)	7-5/8", 24-47.10# casing thread
	47-53.50	8.310"		
9-5/8" x 13-3/8"	54.50-68	12.00	(8.435ppf)	9-5/8", 32.30-58.40# casing thread

CPS-HS HYDRAULIC RELEASE RUNNING TOOL

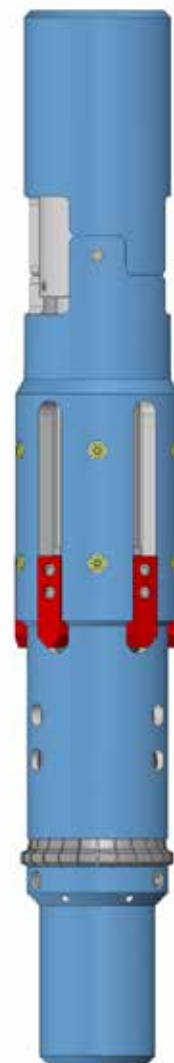
CPS-HR Running Tool connects with the HR Liner Setting sleeve and provides a means to carry a Liner Down hole, set a Liner Hanger and release from the liner prior to or, if desired after cementing. The primary releasing mechanism is hydraulic with an emergency mechanical back-up release system.

Applications

- Offshore and Deviated Wells with tight turns.
- High pressure and High temperature wells.
- Well application requiring hanging heavy liners.
- Vertical and horizontal wells.

Features & Benefits

- Push Pull and rotate while running the liner down hole. The design of this tool allows right hand rotation of the work string and liner with the tool in tension, compression or neutral.
- Rotation after release when running a rotating liner hanger. Multiple torque fingers permit rotation of the liner during cementing after the hanger is set and the running tool released from the liner.
- Easy stub-up to load the HR setting tool into the HR liner Setting sleeve. Simply push straight in and setting tool automatically latches into the profile. Maximum 1/3 turn engages the torque fingers.
- No Rotation to release after actuating the hydraulic cylinder, the tool is retrieved by straight pick-up. The collet is retained in the released position by an internal body lock ring to prevent re-engagement into the setting sleeve profile.
- Emergency mechanical release in the event the primary hydraulic releasing mechanism fails to operate, the setting tool may be released mechanically by 1/4 turn to left.



CPS-MECHANICAL RELEASE RUNNING TOOL

Mechanical release setting tool is a full feature, mechanical release running tool and packer setting assembly. With no rotational drive capability, this simply conveys the liner assembly and then is released with right-hand rotation after the hanger has been set. Designed to release in compression, this tool may be run in vertical, high-angle or horizontal wells with a high degree of confidence. The bearing system facilitates both easy release of the liner, and also aids in the setting of weight set, liner top packer assemblies by allowing the weight to be applied

under a rotational load, more evenly distributing weight and ensuring that maximum setting force reaches the packer assembly.

As a service tool, the mechanical release setting tool features heavy-duty design and construction for a long, usable service life. Standard configuration is with API drill pipe box for direct connection to a retrievable seal joint, drillable seal joint, solid bushing or inverted cup tool.



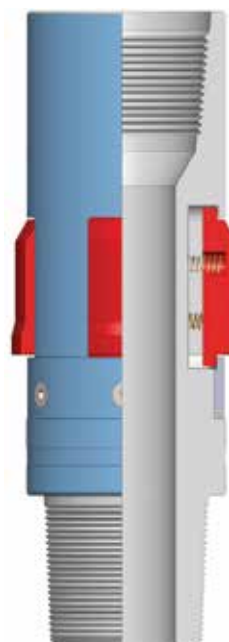
CPS-PACKER SETTING TOOL

The CPS-Packer setting tool is used to set the Liner top Packer after setting of Liner Hanger. Setting Dog

Section is spring loaded to set on top of the Packer to allow setting force to be transmitted to the Packer.

Features & Benefits

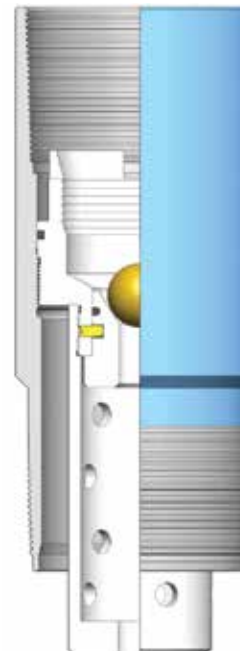
- High strength Spring loaded Dogs Apply set down weight to set Liner Top Packer.
- Available in all API material grades.
- Available in all API Drill Pipe Threads.
- Suitable for H2S & CO2 service



CPS - LANDING COLLAR

Landing Collar is used when setting liner hanger prior to cementing. A setting ball seat in the shear seat allowing pressure to be applied to the hanger to set the slips. Increasing the pressure after setting the hanger shears the ball seat allowing full circulation for cementing operations. The shear rating of the ball seat is adjustable to meet the requirements of the hanger. It incorporates a latch with Non-rotational Mechanism to accept, lock and seal the Liner Wiper Plug upon completion of cementing.

Internal components are manufacture from PDC drillable Material and are compatible for drill out. We retained ball seat design prevents the sheared out cage and ball assembly from interfering with float equipment run below the landing collar. Large, milled slots provide an unrestricted flow area while cementing. Shears/setting balls are available in bronze, aluminum or phenolic materials of varying specific gravity for use in vertical, high angle or horizontal wells or for specific cement weights. All seals are of standard



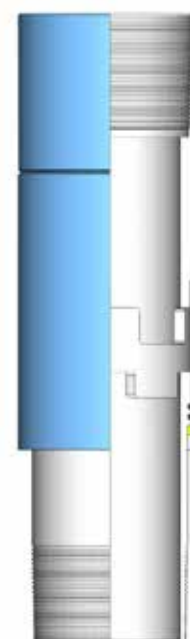
Features & Benefits

- Anti-rotation feature for wiper plugs.
- Available in thread connection per ordered.
- Available in all API material grades.
- PDC drillable material use for drill out items.
- Brass shear pins loaded Ball seat.
- Suitable for H2S & CO2 service.
- High Burst and collapse pressure

CPS - LINER SWIVEL SUB

The liner Swivel Sub is normally used when running mechanical set liners in highly deviated wells in which rotating to set the liner may be a problem. The swivel allows rotation of the hanger without rotating the total liner. A clutch system in the swivel (feature may be detected if required) allows easy release of running nut from the liner, if the liner has to be set on bottom.

- The Liner Swivel allows rotation of the angar without having to rotate the total Liner.
- A clutch system in the swivel allows easy release of the running nut from the liner, if the liner has to be set on bottom.
- Available in all metallurgical con forming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections and type.
- High Burst and Collapse pressure ratings.



CPS-RETRIEVABLE PACK OFF BUSHING

The CPS Retrievable Packoff Bushing provides a positive seal between the setting tool and the liner, securely holding all cementing and plugs bumping pressures. It features temperature and pressure resistant seals which are designed to hold differential pressure from either direction. It also reduces piston force on the drill pipe during cementing operations. After the completion of the cementing, it is retrieved

with the setting tool, leaving the liner top unrestricted. The Retrievable Packoff Bushing with polished nipple is installed in the setting collar and then the setting tool can be made up. When installed, the polished extension nipple locks the retaining dogs into the RPOB Profile. When the setting tool is retrieved, a recessed/undercut section on the bottom of the



Features & Benefits

- Eliminates reverse differential failures.
- Redressable in the field.
- Reduces the piston effect due to the small cross sectional area of the Polished Nipple end.
- Provides a positive seal for high pressure and/or for high temperature.

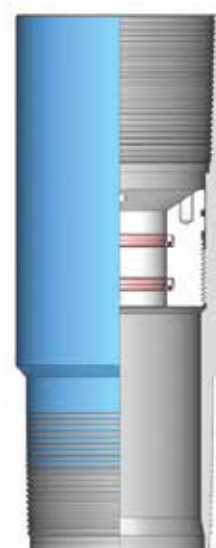
CPS-DRILLABLE PACK OFF BUSHING SUB

Drillable Pack Off Bushing Sub Provide the seal between stinger and Liner

Hanger body to set the liner Hanger.

Features & Benefits

- Available in thread connection on order
- Available in all API material grades
- PDC drillable material use for drill out items
- Suitable for H₂S & CO₂ service
- High Burst and collapse pressure



SWAB CUP ASSEMBLY

CPS Swab Cup Assembly Run together with a hanger setting ball seat, the swab cup packoff assembly allows for a hanger to be set and Release Running Tool without increasing the risk of formation damage which occurs when pressuring the entire liner for setting the hanger and expending the setting ball. The ball seat in the running tool string, in concert with the swab cup packoff assembly, allows for pressure to be maintained only in the work-string, therefore decreasing surge on

the formation when the setting ball is expended

The Ball Seat assembly consist of Ball seat which is supported by Shear Pins. The shear value of Seat sub is always keep higher than the Setting pressure of Liner hanger and releasing pressure of Running Tool by changing the No. of shear pins. After shearing of Ball seat the Flo rate can be establish for cementing or wash over operation.

Features & Benefits

- Available in NBR, HNBR, Viton elastomers
- All Rubber cup designed for maximum lifting capacity and extra-long life.
- Abrasion resistant
- High swabbing speeds, Deep wells, rough tubing.
- Ball seat catcher hold the Ball seat and Ball no need to left in well
- Setting Ball is available in Steel and Brass material.
- Available in all metallurgical conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API thread connections and type.
- High Burst and Collapse pressure ratings.



CPS PUMP DOWN PLUG (PDP)

CPS inner-string Pump Down Plug is pumped behind cement and wipes the inside of drill pipe or tubing strings, providing a mechanical barrier between cement and spacer fluids or between mud and cement.

It wipes cement from the drill pipe and lands in Liner Wiper Plug. When this happens the pressure increases and shears the LWP. Allowing both plug to

be displaced as an unit to the Landing Collar.

The “PDP” is designed for use with CPS inner-string stab-in float equipment to cement large-diameter casing strings. The stinger dart is launched from cementing head, displacing fluids through the drillpipe or tubing string while preventing cement contamination.



CPS LINER WIPER PLUG (LWP)

The Liner Wiper Plug, commonly shear pinned to the Liner setting Tool, has a hollow internal diameter that allows fluids and cement to pass through the plug until the PDP latches into the Upper part of the LWP.

The PDP is then mechanically and hydraulically sealed to the LWP, and the two plugs are sheared from the Liner setting Tool. After wiping the liner, the LWP is latched and sealed to the landing collar preventing the back flow of cement.



Applications

- Wiping drillpipe or tubing in conjunction with CPS inner-string float equipment.
- Large-diameter casing strings requiring inner-string cementing Features

Features and Benefits

- Composed entirely of PDC- (polycrystalline diamond composite) drillable materials, the stinger dart enables trouble-free drillout, conserving rig time.
- Seal ring provides a positive bidirectional seal when latched into float equipment with the corresponding aluminum snap ring, enabling the device to withstand exceptionally high backpressures.
- PDP acts as a mechanical barrier between displacement fluids to prevent cement contamination, resulting in a clean pipe ID.
- Angled, aluminum nose prevents the dart from hanging up in the drillpipe or tubing string, ensuring proper functionality of the device.
- Polyurethane fins offer superior abrasion resistance and excellent wiping action, resulting in a clean casing ID after passage.
- Fin design enables versatility, stability, and superior wiping action for drillpipe and tubing strings, providing operational flexibility.

CPS-POLISHED BORE RECEPTACLE

The Polished Bore Receptacle (PBR) is run as a part of the liner. This PBR comes as a means to tie-back to and existing liner with either a seal assemble or tie-back packer for remedial work.

This PBR is a means to Tie-Back to the liner system should it be needed. This can be accomplished with a seal nipple or with a Tie-Back packer



CPS-HANDLING NIPPLE

The Handling Nipple is a heavy weight Drill Pipe Pup Joint for handling the Liner Hanger assembly and for using the Slips and elevator once the assembly below table. It is located above Packer Setting Tool usually the Handling Nipple is equipped with Junk Bonnet

- Available in all API drill pipe thread connections
- Available in different lengths from 10 feet to 20 feet
- Suitable for H₂S & CO₂ service
- Better Cementing wiping



CPS - JUNK SCREEN

The Junk Bonnet Sub consists of two metal cups installed around Lifting Sub with two bolts.

The Liner Hanger junk screen should be run as part of the setting tool

assembly to prevent debris from damaging the polished bore of Tieback Receptacle.



CPS - SEAL STINGER

Seal stinger with grounded ODs is to provide a sealing surface for the retrievable/drillable Pack-off Bushing. These are manufactured from higher group of API 5CT standard materials as well as furnished with end connections in compliance to API standard and CRA materials suited for H₂S or CO₂ service are available on request.

A groove is provided at the bottom end to attach the Liner Wiper Plug. Our seal joint manufactured from high grade alloy material and surface would be chrome plated so as to possess resistance for corrosive environments.



Features and Benefits

- Available in all API thread connections
- Available in different lengths from 10 feet to 20 feet
- Polished Bore high finished OD for better sealing with Pack Of Bushing Seals
- Suitable for H₂S & CO₂ service
- Better Cementing wiping

CPS-TIEBACK SEAL NIPPLE

The Tieback Seal Nipple with Chevron seal is designed for high pressure liner tieback completions. This honed bore, Tieback seal nipple allows for future extension of the liner casing string to surface for production, testing or remedial operations during the life of the well. This provides mono bore access to the reservoir.

It may be used temporarily or permanently. To facilitate both ease

of entry and cementing operations. It is equipped with a standard mule guide nose with circulations ports. Standard seal configurations is four units in fabric reinforced NBR with optional seals in HNBR. Nipples are designed with ODs compatible for Liner Tieback Packers and Tieback Receptacles with varying in lengths form 6 feet to 40 feet depending on the applications.

Features and Benefits

- One-piece mandrel for high burst and collapse properties.
- Glass filled chevron seals rated at 10,000 PSI at 400 F
- Available in lengths from 6 ft to 40 ft.
- Optional seal packages available for severe well conditions.
- Available in all metallurgical conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API thread connections and type.
- High Burst and Collapse pressure ratings.



CPS - FLOAT COLLAR

The optional Float Collar acts as an extra back pressure valve sealing against pressure from below when floating in a liner or casing. The positive action, back pressure ball and seat valve constructed of thermal plastic ensures

a secure seal. The Float Collar has no internal connections and is highly resistant to abrasive fluids, corrosion, and temperature.



Features and Benefits

- Available in all thread connection as per ordered from 4-1/2" to 20"
- Available in all API material grades
- PDC drillable material use for drill out items
- Suitable for H2S & CO2 service
- High Burst and collapse pressure

CPS-FLOAT SHOE

The Poppet Valve Float Shoe features back pressure valves and a spaded nose with circulating side ports.

The side ports are used when liners are

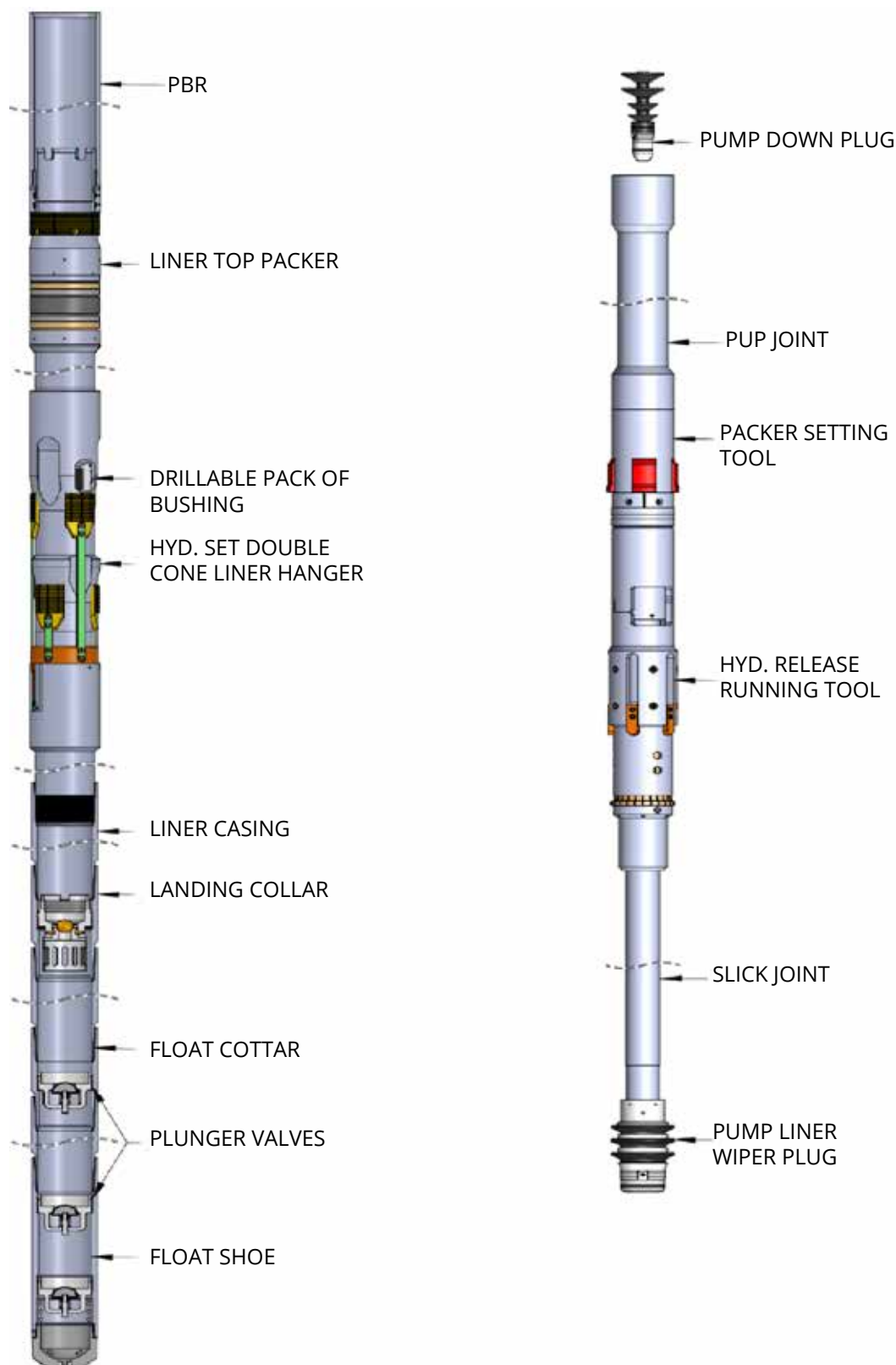
set on bottom and improve cementing operations, The Double Valve Float Shoe, Poppet valve is PDC drillable.



Features and Benefits

- Jet swirl features for better cementing.
- Available in all thread connection as per ordered from 4-1/2" to 20"
- Available in Slip on and Butt weld type
- Available in all API material grades
- PDC drillable material use for drill out items
- Suitable for H2S & CO2 service
- High Burst and collapse pressure

LINER HANGER HOOK - UP



CEMENTING EQUIPMENT

We Know Your Well Very Well..

CEMENTING PLUG

Cementing plug is used to separate the cement slurry from other fluids, reducing contamination and maintaining expected slurry performance. CPS provides two types of cementing plug which are generally used on a cementing operation.

- Conventional(Rotating)Type Cementing Plug
(Product Code: CPS17)
- Non-Rotating Type Cementing Plug
(Product Code: CPS18)

The bottom plug(In Red) is launched ahead of the cement slurry to minimize contamination by fluids inside the casing prior to cementing. A rupture disk in the plug body ruptures to allow the cement slurry to pass through after the plug reaches the Float Collar.

The Top Plug(In Black) has a solid body that provides positive indication of contact with the Float Collar and Bottom Plug through an increase in pump pressure.



Features and Benefits

- Five fins design.
- Internal core is available in Phenolic as well as aluminium.
- Oil Resistant.
- Five Fins provides greater wiping area.
- Plugs are available in Nitrile, Viton, Aflas and other elastomers.
- Plugs are available in conventional and Non Rotating Design.
- One plug can be used in range of PPF for same size of casing.
- Plugs are PDC drillable.
- Maximum temperature rating 400°F.
- Non Rotating profile reduces the drilling time.



Specification Table

Cementing Plug Specification					Conventional Plug Product Number	Non Rotating Plug Product Number
Size	PPF	OD	Bottom Plug Rating	Top Plug Bump Rating		
4 1/2"	9.5-13.5	4.33"	300-400 PSI	4000 PSI	CPS17-0412	CPS18-0412
5 1/2"	14.0-23.0	5.31"	300-400 PSI	4000 PSI	CPS17-0512	CPS18-0512
6 5/8"	20.0-32.0	6.46"	300-400 PSI	4000 PSI	CPS17-0658	CPS18-0658
7.0"	17.0-38.0	6.69"	300-400 PSI	5000 PSI	CPS17-0700	CPS18-0700
7 5/8	24.0-39.0	7.28"	300-400 PSI	5000 PSI	CPS17-0758	CPS18-0758
8 5/8	24.0-39.0	8.27"	300-400 PSI	7000 PSI	CPS17-0858	CPS18-0858
9 5/8	36.0-53.5	9.25"	300-400 PSI	7000 PSI	CPS17-0958	CPS18-0958
13-3/8	48.0-72.0	13.11"	300-400 PSI	6000 PSI	CPS17-1338	CPS18-1338

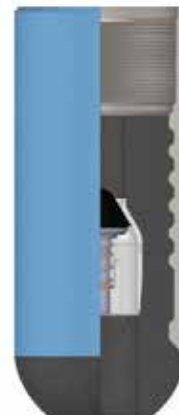
FLOAT SHOE

Float Shoe is a cylindrical steel section with a rounded nose which guides the casing toward the that is attached to the bottom of the casing

string towards the centre of the hole. It contains a check valve to permit fluid to pass downward but not upward through the casing.

Features

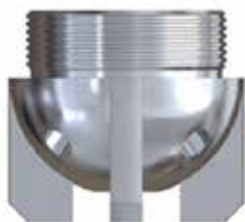
- Fast Drill Out.
- Internal Parts are PDC drillable.
- Float Shoe is available in all API grade material.
- Float shoe can be furnished in API threads as well as in Premium threads.
- Jet port/Nose configuration is available upon request. CPS offers Side Jet Ports, Down Jet Ports and Up Jet Ports.
- Valve is tested as per API RP 10F Category III C.
- Float Shoe is available in Single and Double valve Configuration.
- Maximum Back Pressure rating: 5000 psi @400°F.
- Tubing Float Shoe for high pressure up to 10000 PSI.
- Float Shoe is available in different type of nose as per the application.
- Chip breaker features are in all type of aluminium nose as well as Phenolic nose.



Float Shoe



Bullet Nose



Spade Nose



Eccentric Nose



Phenolic Nose

Specification Table

Cementing Plug Specification				Product Number	Connection
OD	PPF	ID	Coupling OD		
4 1/2"	12.6	3.958"	5.000"	CPS15-0412	API/Premium Threads
5.0"	11.5	4.560"	5.563"	CPS15-0500	
5 1/2"	14.0	5.012"	6.050"	CPS15-0512	
6 5/8"	20.0	6.049"	7.390"	CPS15-0658	
7.0"	17.0	6.538"	7.656"	CPS15-0700	
7 5/8"	24.0	7.025"	8.500"	CPS15-0758	
8 5/8"	24.0	8.097"	9.625"	CPS15-0858	
9 5/8"	36.0	8.921"	10.625"	CPS15-0958	
10-3/4"	40.5	9.950"	11.750"	CPS15-1034	
11 3/4"	42.0	11.084"	12.750"	CPS15-1134	API/Premium Threads
13 3/8"	48.0	12.715"	14.375"	CPS15-1338	
16.0"	65.0	15.250"	17.000"	CPS15-1600	
18-5/8"	87.5	17.755"	20.000"	CPS15-1858	
20.0"	94.0	19.124"	21.000"	CPS15-2000	

Tubing Float Shoe Specification				Product Number	Connection
OD	PPF	ID	Coupling OD		
4 1/2"	12.6	3.958"	5.563"	CPS15-0412	API/Premium Threads
3-1/2"	9.2	2.992"	4.500"	CPS15-0312	
2-7/8"	6.4	2.441"	3.688"	CPS15-0278	

Down Jet
Float ShoeSide Jet
Float ShoeUp Jet
Float ShoeTubing
Float ShoeStab in
Float Shoe

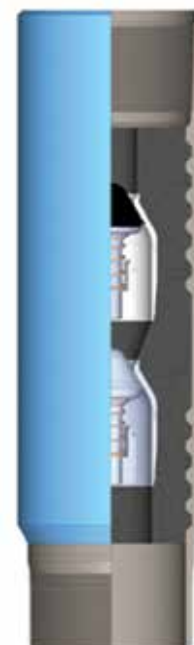
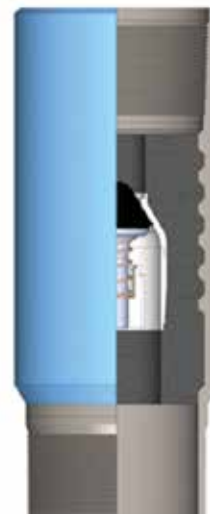
FLOAT COLLAR

Float Collar is a cylindrical steel section with box and pin threads. Float Collar generally uses one string above the Float Shoe. It contains a check valve

to permit fluid to pass downward but not upward through the casing and provides a flat landing surface for cementing plugs.

Features

- Fast Drill Out.
- Internal Parts are PDC drillable.
- Float Collar is available in all API grade material.
- Float Collar can be furnished in API threads as well as in Premium threads.
- Float Collar can be furnished with non rotating feature.
- Valve is tested as per API RP 10F Category III C.
- Float Collar is available in Single and Double valve Configuration.
- Maximum Back Pressure rating: 5000 psi @400°F.
- Tubing Float Collar for high pressure up to 10000 PSI.
- Orifice float collar for Tie-back application.
- Ball Catcher/Ball Deflector is available upon request.
- Flat surface provides platform to bump the bottom plug.
- Baffle plate float collar is available upon request.
- Inner String float collar is available for larger size casing.



Float Collar

Specification Table

Cementing Plug Specification				Product Number	Connection
OD	PPF	ID	Coupling OD		
4 1/2"	12.6	3.958"	5.000"	CPS16-0412	API/Premium Threads
5.0"	11.5	4.560"	5.563"	CPS16-0500	
5 1/2"	14.0	5.012"	6.050"	CPS16-0512	
6 5/8"	20.0	6.049"	7.390"	CPS16-0658	
7.0"	17.0	6.538"	7.656"	CPS16-0700	
7 5/8"	24.0	7.025"	8.500"	CPS16-0758	
8 5/8"	24.0	8.097"	9.625"	CPS16-0858	
9 5/8"	36.0	8.921"	10.625"	CPS16-0958	
10-3/4"	40.5	9.950"	11.750"	CPS16-1034	
11 3/4"	42.0	11.084"	12.750"	CPS16-1134	API/Premium Threads
13 3/8"	48.0	12.715"	14.375"	CPS16-1338	
16.0"	65.0	15.250"	17.000"	CPS16-1600	
18-5/8"	87.5	17.755"	20.000"	CPS16-1858	
20.0"	94.0	19.124"	21.000"	CPS16-2000	

Tubing Float Shoe Specification				Product Number	Connection
OD	PPF	ID	Coupling OD		
4 1/2"	12.6	3.958"	5.563"	CPS16-0412	API/Premium Threads
3-1/2"	9.2	2.992"	4.500"	CPS16-0312	
2-7/8"	6.4	2.441"	3.688"	CPS16-0278	



Non Rotating
DV Float Collar



Stab in
Float Collar



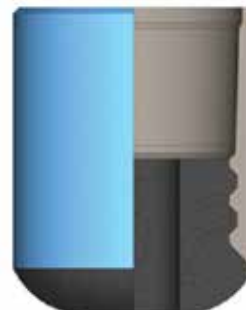
Non Rotating
SV Float Collar

GUIDE SHOE

Guide Shoe is a cylindrical steel section with a rounded nose which guides the casing toward the that is

attached to the bottom of the casing string towards the centre of the hole.

- Guide Shoe is available in all API grade material.
- Guide shoe can be furnished in API threads as well as in Premium threads.
- Jet port configuration is available upon request. CPS offers Side Jet Ports, Down Jet Ports and Up Jet Ports.



Guide Shoe

Specification Table

Cementing Plug Specification				Product Number	Connection
OD	PPF	ID	Coupling OD		
4 1/2"	12.6	3.958"	5.000"	CPS51-0412	API/Premium Threads
5.0"	11.5	4.560"	5.563"	CPS51-0500	
5 1/2"	14.0	5.012"	6.050"	CPS51-0512	
6 5/8"	20.0	6.049"	7.390"	CPS51-0658	
7.0"	17.0	6.538"	7.656"	CPS51-0700	
7 5/8"	24.0	7.025"	8.500"	CPS51-0758	
8 5/8"	24.0	8.097"	9.625"	CPS51-0858	
9 5/8"	36.0	8.921"	10.625"	CPS51-0958	
10-3/4"	40.5	9.950"	11.750"	CPS51-1034	
11 3/4"	42.0	11.084"	12.750"	CPS51-1134	API/Premium Threads
13 3/8"	48.0	12.715"	14.375"	CPS51-1338	
16.0"	65.0	15.250"	17.000"	CPS51-1600	
18-5/8"	87.5	17.755"	20.000"	CPS51-1858	
20.0"	94.0	19.124"	21.000"	CPS51-2000	

Tubing Float Shoe Specification				Product Number	Connection
OD	PPF	ID	Coupling OD		
4 1/2"	12.6	3.958"	5.563"	CPS51-0412	API/Premium Threads
3-1/2"	9.2	2.992"	4.500"	CPS51-0312	
2-7/8"	6.4	2.441"	3.688"	CPS51-0278	



Down Jet
Float Shoe



Side Jet Float
Shoe



Up Jet Float
Shoe

REAMER SHOE

Reamer Shoe is a cylindrical steel section with an eccentric nose which guides the casing toward the that is attached to the bottom of the casing

- Carbide spiral vanes and diamond shapes structure provides full-bore coverage in rotating and reciprocating applications, which provides easy passage to total depth.
- The eccentric nose can climb ledges and negotiate other well bore obstructions while the cutting structure reams out tight spots.
- Reamer shoe enables both rotating and reciprocating reaming action while running casing and liners.
- Flow ports provide full-bore coverage while rotating and reaming, and they prevent channeling while cement is pumped.

string towards the centre of the hole. It contains a check valve to permit fluid to pass downward but not upward through the casing.

- All internal parts and standard aluminum alloy nose are PDC drillable.
- Reamer Shoe is available in all API grade material.
- Reamer shoe can be furnished in API threads as well as in Premium threads.
- Reamer Shoe is available in Single and Double valve Configuration.
- Maximum Back Pressure rating: 5000 psi @400°F.
- Reamer shoe is available in welded design as well as single piece design.



Reamer Shoe



Specification Table

Cementing Plug Specification				Product Number	Hole Size	Reamer OD	Connection
OD	PPF	ID	Coupling OD				
4 1/2"	12.6	3.958"	5.000"	CPS46-0412	6.0"	5.875"	API/ Premium Threads
5.0"	11.5	4.560"	5.563"	CPS46-0500	6 1/2"	6.375"	
5 1/2"	14.0	5.012"	6.050"	CPS46-0512	7 7/8"	7.75"	
6 5/8"	20.0	6.049"	7.390"	CPS46-0658	8 1/2"	8.375"	
7.0"	17.0	6.538"	7.656"	CPS46-0700	8 1/2"	8.375"	
7 5/8"	24.0	7.025"	8.500"	CPS46-0758	9 7/8"	9.75"	
8 5/8"	24.0	8.097"	9.625"	CPS46-0858	11.0"	10.875"	
9 5/8"	36.0	8.921"	10.625"	CPS46-0958	12 1/4"	12.125"	
10-3/4"	40.5	9.950"	11.750"	CPS46-1034	12 1/4"	12.125"	
11 3/4"	42.0	11.084"	12.750"	CPS46-1134	15 1/2"	15.375"	API/ Premium Threads
13 3/8"	48.0	12.715"	14.375"	CPS46-1338	17 1/2"	17.375"	
16.0"	65.0	15.250"	17.000"	CPS46-1600	20.0"	19.875"	
18-5/8"	87.5	17.755"	20.000"	CPS46-1858	22.0"	21.875"	
20.0"	94.0	19.124"	21.000"	CPS46-2000	24.0"	23.875"	

CROSS COUPLING PROTECTOR

CPS manufactures the Cross Coupling Cable Protectors(Casted) to protect and support ESP cable, control lines

and injection lines in the well bore for wells completed with artificial lift.

Features

- The protector is designed and tested to support a minimum of 100 ft. of ESP cable and control/ injection line across the coupling without cable slippage and crimping.
- The protector is designed to effectively withstand high axial and rotational forces experienced while performing completion operations.
- The protector is designed to withstand axial load of 30 tons and lateral load of 20 tons without slipping on the production tubing.
- The protector is of one-piece design/assembly with captivated cap screw and pre-engaged bolts to eliminate potential for detachment of bolts from the main protector body.
- No loose parts to fall out during or after installation.
- The protector comes with an interlock feature as a standard which protects the bolts from shear stress.
- The protector is designed to have a low profile collar that gives increased clearance within casing and thus allows more standoff protection over cable.
- The protector is designed to have contoured profiles to deflect away impacts encountered while running the production string down-hole.
- All components used in the construction of the cable protector conform to NACE specifications MR-01-75 (latest edition) for sour service applications.
- All protectors are fully retrievable and reusable after minor refurbishment and replacement of few parts

SIZE	ESP Cable Type	Control Line Size	Thread Connection
2-7/8"	Flat or Round	1/4", 3/8"	API/Premium
3-1/2"	Flat or Round	1/4", 3/8"	API/Premium
4-1/2"	Flat or Round	1/4", 3/8"	API/Premium



[illegible]



For any further query please contact us on

CPS Oil and Gas Equipments Pvt. Ltd.

28, Phase V, Parmar Techno Centre, Vasai East, Western Express Highway,
Thane Dist, Maharashtra - 401208, India.

Email : sales@cpsog.com | Tel.: +91 7028971169 | Mob.: +91 9819433435