

# Gas Lift Equipment



**PetroForge  
Technology**



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## Introduction

PetroForge Technology Gas Lift systems offers exceptional economic value and flexibility in all gas-lift applications.

PetroForge offers an extensive range of wireline-retrievable side-pocket mandrels, tubing-retrievable mandrel. Every mandrel series features 1" and 1 1/2" inside diameter (ID) pocket profiles and includes both oval and round body designs. Configurations and models are available, ranging from forged and machined pocket designs, high-pressure solid- body designs with full-length machined grooves to facilitate control lines, and special-clearance designs. Every model can be configured with various porting options, including tubing flow, annular flow, side-string, bypass, and chemical-treating injection systems.

## PFT-RM Series Tubing Retrievable Mandrel

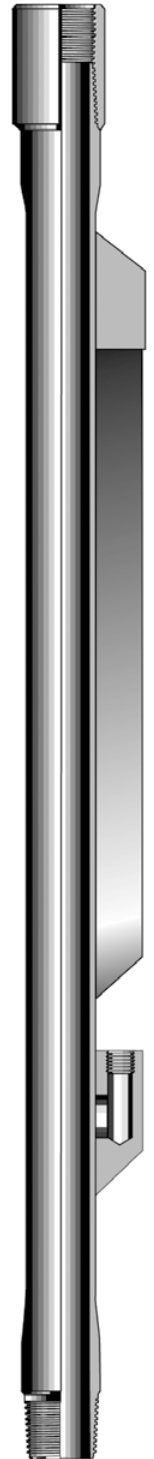
PFT-RM series gas-lift mandrels are equipped with external lugs to receive tubing-retrievable gas-lift and orifice valves. RM series mandrels are available in standard and heavyweight tubing sizes. A full-bore drift inside diameter (ID) enables wellbore intervention through the production tubing. External guards are attached to the outside diameter (OD) of the mandrels, surrounding the valves and providing protection during tubing running and pulling operations.

### Features, Advantages, and Benefits

- Full-bore drift ID enables wellbore intervention through the production tubing, reducing maintenance costs.
- Guard plates on the sides of the mandrels protect gas-lift valves from damage as they are run in the hole, reducing the need for costly replacements.
- Various ported-lug configurations allow use of the mandrels in tubing or annular-flow applications, providing system design flexibility for individual applications.
- Concentric ID makes these mandrels suitable for use in combination.
- Gas-lift/plunger-lift applications, enhancing operational flexibility.

### Applications

- RM series mandrels are installed as part of the tubing string to carry tubing-retrievable gas-lift equipment, in single- or dual-string completions.
- The RM-I and RM-II mandrels are used for 1 and 1 1/2-in. OD gas-lift valves, respectively.



## Specifications

Tubing Size (in.)	Mandrel Lug ID		Dimension OD	Mandrel OD		Drift ID		Mandrel Length		Test Pressure Rating psi (bar)
	(in.)	(mm)		(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	
2.375	1.0	25.4	A	3.783	96.0882	1.901	48.285	51	1295	5000 (344.70)
			B	3.706	94.1324					
			A	4.096	104.0384					
			B	4.019	102.0826					
	1.5	38.1	A	4.283	108.7882					
			B	4.206	106.8324					
2.875	1.0	25.4	A	4.335	110.109	2.347	59.614	51	1295	
			B	4.231	107.4674					
			A	4.648	118.0592					
			B	4.544	115.4176					
	1.5	38.1	A	4.835	122.809					
			B	4.731	120.1674					
3.500	1.0	25.4	A	5.063	128.6002	2.867	72.822	51	1295	
			B	4.903	124.5362					
	1.5	38.1	A	5.562	141.2748					
			B	5.427	137.8458					

A = Mandrel maximum running OD, standard collar

B = Mandrel maximum running OD, special-clearance collar

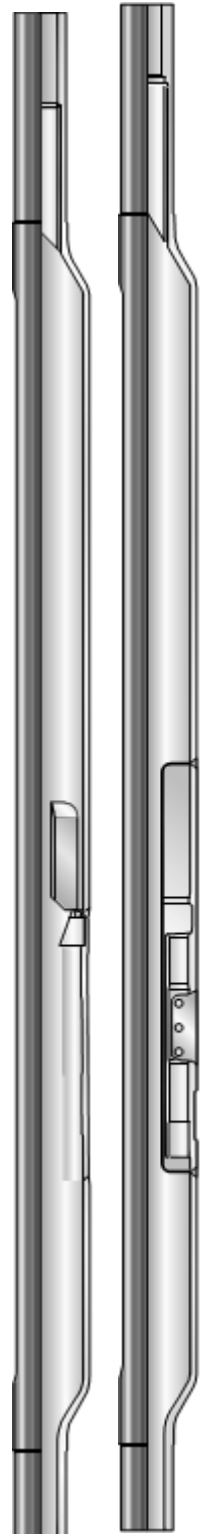
## Options

- RM Series Mandrels are available in various materials for standard, corrosive hydrogen sulfide (H<sub>2</sub>S), high-temperature, and high-pressure well environments.
- RM Series Mandrels are available in standard and heavyweight tubing sizes and connections to suit specific completion designs.
- RM Series Mandrels are available in pup-joint grades J-55, N/L-80, P-110, 13 CHROME.

## PFT-P Series Side Pocket Mandrel (Oval Shaped Forged/Machined)

PFT-P Forged-Pocket and machined-pocket side-pocket mandrels feature an oval-body design and threaded connections for installation in the tubing string. The side pocket is offset from the bore of the tubing, which allows full tubing drift, through the mandrel and without restriction, for well-servicing operations. The side pocket contains profiles and seal bores to land gas-lift and other flow-control devices.

Flow-control devices are installed in the side pocket using a kickover tool, which is run into the well using standard wireline techniques. PFT-P Side Pocket Mandrels include an integral orienting sleeve that aligns the kickover tool and flow control devices with the pocket for precise installation in straight and deviated wellbores. The Side Pocket Mandrels have a one-piece forged pocket/deflector, which guides the flow-control device into the pocket and deflects tools larger than the pulling/running tool back into the tubing bore of the mandrel. The PFT-P Side Pocket Mandrels have a machined pocket and tool guard to perform the same function.



### Applications

- PF-I Side Pocket Mandrel has a one-piece forged pocket/deflector and a 1" inside diameter (ID) pocket for installation in straight wellbores.
- PFO-I Side Pocket Mandrel has a one-piece forged pocket/deflector, a 1" ID pocket, and an integral orienting sleeve for installing gas-lift devices in deviated wellbores. The Side Pocket Mandrel contains integrally forged swaged end connections.
- PM-I and PM-II Side Pocket Mandrel have machined pockets and tool guards and 1" and 1 1/2" ID pockets for installing gas-lift devices in straight wellbores.
- PMO-I and PMO-II Side Pocket Mandrels have machined pockets and tool guards: 1" and 1 1/2" ID pockets and integral orienting sleeves for installing gas-lift devices in straight and deviated wellbores.
- PMO-2 with RA Latch Side Pocket Mandrel has machined pockets and tool guards and a 1 1/2" ID pocket with a 360(degree) latch profile for use with the RA-type latch.

### Features, Advantages, and Benefits

- Side-pocket design eliminates the need to pull or rerun the tubing string to install or replace gas-lift valves.
- Side pocket is offset from the tubing bore, which maximizes the flow area and allows full tubing drift for well servicing operations through the mandrel, without restriction.
- Oval-body mandrel design is ideal for dual-completion applications and reduces overall running clearances.
- Slotted orienting sleeve in select models enables precise installation and retrieval of gas-lift equipment in straight and deviated wellbores.
- Tool guard protects gas-lift equipment from damage by deflecting tools larger than the pulling/running tool from the flow-control device.
- The forged pocket has recessed opposing ports that prevent flow erosion and port blockage if the mandrel pocket is positioned against the casing wall.
- The mandrel material is fully heat-treated to provide the best combination of strength and corrosion resistance for its intended use.
- The one-piece forged pocket/deflector provides a smooth internal profile to enhance the passage of wireline tools and reduce flow turbulence around the pocket section.

## Specifications

Size	Pocket Size (in., mm)	Pocket Type	Pocket Latch Configuration	Orienting Sleeve	Major OD in (mm)	Minor OD in (mm)	Drift* in (mm)
2.375	1.000 (25.4)	Forged	180°	NO	4.25 (107.95)	2.91 (73.91)	1.901 (48.29)
		Machined		YES			
	1.5 (38.1)	Machined	360° A-type	NO	4.75 (120.65)	4.000 (101.60)	
			180°	YES			
2.875	1.000 (25.4)	Forged	180°	NO	4.75 (120.65)	4.00 (101.6)	2.347 (59.61)
		Machined	180°	YES			
				NO	3.98 (101.09)		
				YES	4.00 (101.6)		
	1.500 (38.1)	Forged	180°	YES	5.4 (137.16)	4.62 (117.42)	
		Machined	360° A-type	NO	5.43 (137.92)		
			180°	YES	5.4 (137.16)		

## PFT-P Series Side Pocket Mandrel Pressure Rating

Mandrel Model	Tubing Size (in.)	Test Pressure*							
		Standard Service				Sour Service			
		Internal		External		Internal		External	
		(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)
PM-1	2 3/8	8,000	551	6,000	413.4	6,000	413.4	4,000	275.6
	2 7/8								
	3 1/2								
PIM-1	2 3/8	8,000	551	6,000	413.4	6,000	413.4	5,000	344.5
	2 7/8								
	3 1/2	7,000	482.6	5,500	379.2	Special Request			
PMO-1	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	4,000	275.6
	2 7/8								
	3 1/2								
	4 1/2	7,000	482.3	5,000	379				
PIMO-1	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	5,000	344.5
	2 7/8								
	3 1/2	7,000	482.3	5,500	379			4,500	310.1
PF-1	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	5,000	344.5
	2 7/8								
PIF-1	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	5,000	344.5
	2 7/8								
PFO-1	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	5,000	344.5
	2 7/8								
	3 1/2	7,000	482.3	5,500	379			4,500	310.1
PIFO-1	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	5,000	344.5
	2 7/8								
	3 1/2	7,000	482.3	5,500	379			4,500	310.1
PM-2	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	4,500	310.1
	2 7/8								
	3 1/2								
PIM-2	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	4,000	344.5
PMO-2	2 3/8	8,000	551.2	6,000	413.4	6,000	413.4	5,000	275.6
	2 7/8								
	3 1/2								
PFO-2	2 3/8	7,500	516.8	6,000	413.4	6,000	413.4	5,000	344.5
	2 7/8	8,000	551.2	6,500	447.9	7,000	482.3	5,500	379
	3 1/2	7,500	516.8	6,000	413.4	6,000	413.4	5,000	344.5
	4 1/2	8,500	585.6	7,000	482.3	6,500	447.9	5,500	379

### Options:

- All oval-body side-pocket mandrels are available in AISI 4130 alloy material, which can be heat-treated specifically for corrosive hydrogen sulfide (H<sub>2</sub>S) service. High-alloy materials such as 13-chrome (13-Cr) and 9-chrome (9-Cr) are also available.
- For specialized applications such as chemical injection, waterflood, bypass injection, and pressure-gauge monitoring, multiple mandrel configurations with a variety of features available.



## PFT-POR Side Pocket Mandrel (Machined Round Body)

PFT- POR Round Body Machined Side-Pocket Mandrels feature a round cross-sectional profile with machined swages, pocket, and tool guards. The mandrels have threaded connections for installation in the tubing string. The robust design enables installation of these mandrels in applications where premium alloy, special dimensional requirements, and/or increased pressure and tensile-strength capabilities are required.

The side pocket is offset from the bore of the tubing, allowing full tubing drift for well-servicing operations through the mandrel, without restriction. The side pocket contains profiles and sealed bores to land appropriate flow-control devices. Gas-lift valves and other appropriate flow-control devices are installed in the side pocket using a kickover tool, which is run into the well using standard wireline techniques.

PFT-POR Mandrels include an integral orienting sleeve that aligns the kickover tool and flow-control device above with the pocket for precise installation in straight and deviated wellbores. POR Series Mandrels do not have orienting sleeves and should only be installed in straight wellbores.

These mandrels feature a tool guard at the top of the pocket, which deflects tools larger than the pulling/running tool back into the tubing bore to prevent damage to the valve latch.

PFT-POR Mandrels have 1" and 1 ½" inside diameter (ID) pockets and are designed for installation in straight wellbores.

PFT-POR Mandrels have 1" and 1 ½" ID pockets and integral orienting sleeves and tool guards for installation in straight and deviated wellbores.



## Applications

- POMR and PMR series mandrels are used as internal receivers for gas-lift valves and other flow-control devices in standard, high-pressure, and corrosive service, primarily in single completions.
- POMR and PMR series mandrels are available with a variety of features for specialized applications such as chemical injection, waterflood, bypass injection, and pressure-gauge monitoring.

## Features, Advantages, and Benefits

- The high-pressure design enables use of these mandrels in deep applications requiring high-pressure and/or tensile ratings, providing options for use in demanding environments.
- The side pocket is offset from the tubing bore, maximizing the flow area, and allowing full tubing drift for well-servicing operations through the mandrel without restriction.
- The side pocket eliminates the need to pull or rerun the tubing string to install or replace gas-lift equipment, reducing operating costs.
- The machined pocket and tool guard prevent tools larger than the pulling/running tool from damaging the valve latch, protecting gas-lift equipment.
- The slotted orienting sleeve provides positive alignment of the kickover tool, ensuring reliable running and pulling of gas-lift equipment in deviated wellbores.
- The mandrel material is fully heat-treated, providing the best combination of strength and corrosion resistance for its intended use.
- POR-A and PMR-A series mandrel configurations are available with a special-clearance outside diameter (OD) for installation in smaller-diameter casing, where standard-diameter mandrels may not be practical, providing operational flexibility.
- Ratcheting lock ring holds setting force.



## Specifications

Model	Tubing Size (in.)	Pocket Size (in., mm)	Pocket Latch Configuration	Orienting Sleeve	Major OD (in., mm)	Drift* (in., mm)
POMR-1	2 3/8	1.0 (25.4)	180°	Yes	4.5 (114.3)	1.901 (48.29)
POMR-1A					3.85 (97.79)	
PMR-1B				No	3.75 (95.25)	
POMR-1	2 7/8	1.0 (25.4)	180°	Yes	5.00 (127)	2.347 (59.61)
POMR-2		1.5 (38.1)		Yes	5.44 (138.18)	
PMR-2		No				
POMR-1	3 1/2	1.0 (25.4)	180°	Yes	5.75 (146.05)	2.867 (72.82)
POMR-2		1.5 (38.1)		Yes	6 (152.4)	
PMR-2		No				
POMR-2	4 1/2	1.5 (38.1)		Yes	7.07 (146.05)	3.833 (97.36)

\*1.901-in. drift is for 2 3/8-in. 4.7 lb-ft tubing

\*2.347-in. drift is for 2 7/8-in. 6.5 lb-ft tubing

\*2.867-in. drift is for 3 1/5-in. 9.3 lb-ft tubing

\*3.833-in. drift is for 4 1/2-in. 12.60 lb-ft tubing

All dimensions and ratings for round-body side-pocket mandrels represent the standard (average) for the tubing and pocket-size configuration. Slight differences in OD, ID, metallurgy, thread weight, thread, etc., will result in variations to the specifications listed above.

## Options

- POMR and PMR series mandrels are available in AISI 4130 alloy material, which can be heat-treated specifically for corrosive hydrogen sulfide (H<sub>2</sub>S) service. Other materials are available on request.
- POMR and PMR series mandrels are available with a variety of features for specialized applications such as chemical injection, waterflood, bypass injection, and pressure-gauge monitoring.
- PMR-2 With RA latch and POMR-2 with RA mandrels have a 1 1/2-in. ID pocket and a 360° latch-lug profile. The PMR-2RA mandrel is designed for installation in straight wellbores. The POMR-2RA mandrel includes an orienting sleeve for installation in straight and deviated wellbores.

## PFT-POBR Series Side Pocket Mandrel (Round Body Machined)

PFT-POBR Side Pocket Mandrels feature a round cross-sectional profile, an integral orienting sleeve, and a unique bat-wing tool guard for 1" and 1 ½" outside diameter (OD) flow-control devices. These mandrels have a pocket-and-deflector section, which is machined from solid-bar stock. This design eliminates all longitudinal welds, providing an extremely strong mandrel for the most demanding environments. Internal profiles, including the bat-wing profile located at the tool guard and the upper and lower swages, are designed, and tested to provide smooth passage of wireline tools in highly deviated wellbores, ensuring trouble-free operation during the life of the well. These mandrels can be custom-built for specific applications to facilitate control lines with either full-length machined grooves or rails. The POBR Mandrels are ideal for applications in which superior strength and increased pressure capabilities are required.

Flow-control devices are installed in the side pocket using a kickover tool, which is run into the well using standard wireline techniques. The upper swage section contains an orienting sleeve that aligns the kickover tool with the side pocket for precise installation of flow-control devices in straight and deviated wellbores. The special bat-wing tool guard at the top of the pocket captures and guides the flow-control device into the pocket and deflects tools larger than the pulling/running tool back into the tubing bore of the mandrel.

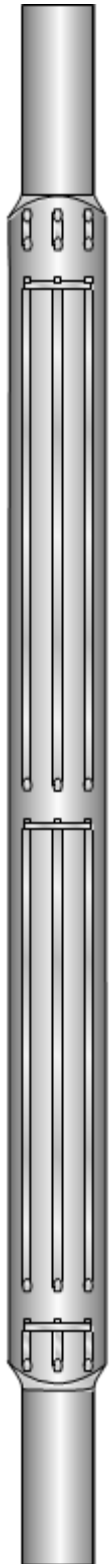
The side pocket consists of a latch lug, two polished bores, and recessed inlet ports that provide communication between the casing annulus and the tubing. In gas-lift operations, flow from the casing enters the opposing mandrel ports, travels through the flow-control device, and enters the tubing string. The packing on the flow-control device seals the bore above and below the ports and isolates the tubing-injection pressure from the formation pressure.

### Applications

- Used as internal receivers for the installation and retrieval of flow-control devices for gas-lift, chemical-injection, and waterflood applications, primarily in single completions.
- Can be custom-built for specific applications to facilitate control lines with
- Either full-length machined grooves or rails
- Can be installed in deviated and straight wellbores.

### Features, Advantages, and Benefits

- Solid-body design eliminates longitudinal welds, providing superior strength and increased pressure capabilities.
- Swages bat-wing profile tool guard have smooth and tapered surfaces specifically designed to avoid wireline snags and corrosion traps, preventing shielded areas that can inhibit application of the proper protective coating.
- The bat-wing tool-guard profile ensures that flow-control devices are guided into the pocket while larger tools are deflected back into the tubing bore of the mandrel, preventing damage to the valve latch.
- The solid pocket has recessed opposing ports, preventing flow erosion or blockage of ports if the mandrel pocket is positioned against the casing wall.



- Mandrel material is fully heat-treated, providing the best combination of strength and corrosion resistance for its intended use.
- The slotted orienting sleeve enables positive alignment of the kickover tool, ensuring reliable running and pulling of gas-lift equipment in deviated wellbores.
- High-pressure design enables use of these mandrels in deep applications that require high pressure and tensile ratings.
- POBR mandrel configurations are available with a special-clearance OD for installation in smaller-diameter casing, where standard-diameter mandrels may not be practical.

## Specifications

Model	Tubing Size (in.)	Pocket Size in. (mm)	Body Configuration	Pocket Type	Orienting Sleeve	Major OD in. (mm)	Drift in. (mm)
POBR-1	2 3/8	1 (25.4)	Round	Solid machined	Yes	4.6 (116.84)	1.9 (48.26)
POBR-1A						3.85 (97.79)	1.9 (48.26)
POBR-1	2 7/8					5.00 (127.00)	2.354 (59.61)
POBR-1A						4.50 (114.30)	2.35 (59.61)
POBR-1	3 1/2					5.50 (139.70)	2.87 (72.82)
POBR-1	4 1/2					6.38 (161.93)	3.83 (97.36)
POBR-1A						5.98 (151.97)	3.83 (97.36)
POBR-2	2 7/8					1.5 (38.1)	Round
	3 1/2	5.97 (151.59)	2.87 (72.82)				
	4 1/2	7.06 (179.37)	3.83 (97.36)				
	5 1/2	8 (203.2)	4.65 (118.19)				
	7	9.25 (234.95)	5.8 (147.19)				

All dimensions and ratings for round, solid-body, side-pocket mandrels represent the standard (average) for the tubing and pocket size configuration. Slight differences in OD, ID, metallurgy, thread weight, thread, etc., will result in variations to the specifications listed above.

## Options

- The POBR series mandrels are available in AISI 4130 alloy material, which can be heat-treated specifically for corrosive H<sub>2</sub>S service.
- Because of their totally machined design, the POBR mandrels are available in a number of configurations and materials, including 9Cr-1Mo, 13Cr, Super 13-chrome (S13Cr), F6NM, and INCONOL 718 and 925.
- A variety of configurations are available for specialized applications such as chemical injection, waterflood, bypass injection, and pressure-gauge monitoring.
- Configurations with a special-clearance OD are available for installation in smaller-diameter casing.
- Dimensions and pressure ratings will change for custom-designed mandrels with special thread connections, special rails or grooves, and special metallurgy. Pressure ratings can be provided based on specific condition.

## PFT-CI Tubing Retrievable Chemical Injection Mandrel

PFT-CI series chemical-injection mandrels are equipped with an external lug to receive tubing-retrievable chemical-injection valves and check valves.

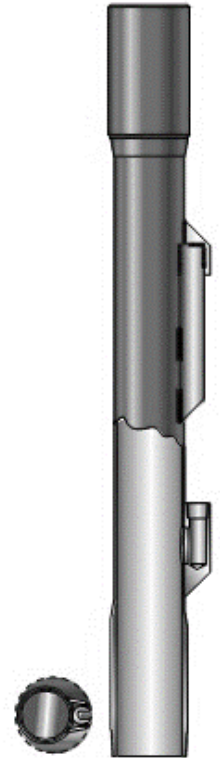
Mandrels in the CI series are available in a number of sizes and materials, and they can be custom-designed as per the well environment (high-pressure & high-temperature).

PFT-CI is divided in two types:

- A. PFT-CIS
- B. PFT-CIW

PFT-CIS is one Piece design from solid bar stock. This design eliminates all welds, resulting in an incredibly sturdy mandrel for the harshest situations. Furthermore, PFT-CIS mandrel designs with external protection for bypass cables and control lines are available. To protect the chemical-injection line and valve during tubular running and pulling operations, external guards are machined onto the outer diameter (OD) of the mandrel.

PFT-CIW is welded design of Chemical injection mandrel. PFT-CIW Mandrels in having a welded external lug for receiving tubing-retrievable chemical injection valves and check valves. PFT-CIW mandrels also have welded guards that protect the chemical-injection device and the injection line during running and pulling operations. PFT-CIW mandrels have been used where cost-effective options for less-demanding downhole injection applications are there.



## Applications

- Chemical injection mandrels are inserted as part of the tubing string to facilitate chemical injection into the tubing string via a capillary injection line or casing annulus.
- These mandrels are also used to inject water into the tubing string to prevent salt buildup.
- Chemical injection mandrels can also be used as sensing points for determining downhole pressure.
- PFT-CIS series mandrels are built to withstand the harshest conditions.
- PFT-CIW mandrels are cost-effective options for less-demanding applications.

## Features, Advantages, and Benefits

- By allowing for larger, more durable valve designs, the tubing-retrievable layout maximizes usefulness and boosts system reliability.

## Specifications

Model	Tubing Size (in.)	Mandrel Lug ID (in.)	Mandrel Lug ID (mm)	Mandrel Running OD (in.)	Mandrel Running OD (mm)	Drift ID (in.)	Drift ID (mm)	Mandrel Length (ft)	Mandrel Length (m)
PFT-CIS	2 3/8	1	25.4	4	101.6	1.9	48.29	5	1.52
	2 7/8			4.5	114.3	2.35	59.61	4.33	1.32
	3 1/2			5.29	134.37	2.87	72.82	5.17	1.57
	4			5.6	142.32	3.22	81.66		
	5 1/2			7.14	181.36	4.65	118.198		

Model	Tubing Size (in.)	Mandrel Lug ID (in.)	Mandrel Lug ID (mm)	Dimension OD Type	Mandrel Running OD (in.)	Mandrel Running OD (mm)	Drift ID (mm)	Drift ID (mm)	Mandrel Length (ft)	Mandrel Length (m)
PFT-CIW	2. 3/8	1	25.4	Standard	3.783	96.09	1.901	48.29	4.25	1.3
				Special Clearance	3.706	94.13				
	2 7/8			Standard	4.335	110.11	2.347	59.61		
				Special Clearance	4.231	107.47				
	3 1/2			Standard	5.063	128.6	2.867	72.82		
				Special Clearance	4.903	124.54				



## JD Pulling Tool

JD series pulling tools are wireline-service tools that are used to remove retrievable subsurface devices with outside fishing necks from a well. These tools are available with three various core lengths, allowing them to retrieve subsurface devices with varying reach lengths.

The JD series pulling tools employ the D sub, which serves as the tool's core. The dogs, which are mounted on the skirt, are inserted into the skirt's vertical openings. The dogs are spring-loaded and have pawls in the skirt's windows. If the subsurface device cannot be freed by continual downward jarring, the pulling instrument can be released.

There are three types of JD series tool used and differs 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.

## Specifications

Nominal Size (in.)	Upper Connection (in.)	Maximum OD (in)	To Pull Fishing Neck OD (in)	Prong Connection
1 1/4	15/16-10	1.291	0.875	1/4-20
1 1/2	15/16-10	1.422	1.187	1/2-13
1 5/8	15/16-10	1.625	1.187	1/2-13
2	15/16-10	1.859	1.375	1/2-13
2 1/2	15/16-10	2.25	1.75	1/2-13
3	15/16-10	2.812	2.312	5/8-11
4	1 1/16-10	3.75	3.125	1 1/4-12





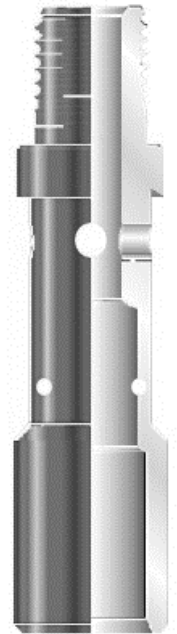
## Running Tool

Running tools are wireline-service tools used to install side-pocket subsurface control devices with outer diameters (OD) of 1 in. and 1 1/2 in. within pocket mandrels.

These running tools are made up of a fishing neck, a pin thread connection on the upper end, and a skirt on the bottom end that is attached to the side-pocket device with shear pins. To install side-pocket subsurface control devices, all side-pocket mandrel accessory running tools must be attached to the proper kickover tools.

## Specifications

Model	Upper Connection	Fishing Neck Size (in.)	Fishing Neck Size (mm)	Maximum OD (in.)	Maximum OD (mm)
JK	0.937-in. 10 UNS-2A	1.187	30.15	1.25	31.75
RK-1				1.445	36.7



## Wireline Retrievable Latches

Wireline retrievable latches are designed to secure retrieval gas lift valves and any other flow control device such as chemical injection valve and water flood valves into the appropriate side pocket mandrels equipped with 1" and 1-½" outside diameter receiver pockets. All the running post and bodies for the BK-2 and RK models latches are drilled and pinned. A ported inside diameter (ID) is included in certain models for applications that require a communication path between the latch and an attached flow-controlled device, such as a circulating valve.

### Features, Advantages, and Benefits

- Wireline-retrievable latch design allows valves to be pulled and serviced or replaced without pulling the tubing, reducing maintenance and repair costs.
- Available in SS316/SS316L, SS304 and Monel materials.
- A ported ID is included in certain models to allow flow through the latch to an attached flow-controlled device.
- Most 1 1/2-in. OD latch models 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 Colonel alloy to prevent scale build up and enhance erosion resistance.

### Specifications

Valve Pocket ID in.(mm)	Latch Pocket Profile	Latch Model	Latch Mechanism	Pulling Neck OD in.(mm)	Running Neck OD in.(mm)	Running Tool	Pulling Tool
1 (25.4)	180°	BK-2	Lock-ring	0.875 (22.23)	0.75 (19.05)	JK	1 1/4-in. JDC
1.5 (38.1)	180°	RK	Lock-ring	1.185 (30.1)	0.937 (23.88)	RK-1	1 5/8-in. JDS



BK - 2



RK