

Packer Systems



**PetroForge
Technology**



Table of Contents

PFT-IX Mechanical Production packer	2
PFT-R3S Single Grip Mechanical Production packer	3
PFT-R3D Double Grip Mechanical Production packer.....	4
PFT-LS Lok-Set Packer	5
PFT-H1 Hydraulic Production packer	7
PFT-H6 Hydraulic Production packer	9
PFT-H2 Hydraulic-Set Dual String Production Packer.....	10
PFT-H4 hydraulic/hydrostatic Single String Production Packer	11
PFT-SBP Permanent Seal Bore Packer	13
PFT-SBP-U Permanent Dual Seal Bore Packer	15
PFT-TAC Tubing Anchor Catcher	16
Seal Bore Tubing Accessories	17
Seal Bore Packer Accessories	17
Accessories.....	18
PFT-2 On/Off Tool.....	18
PFT-SSJ Shear Safety joint	19
PFT-RSJ Rotational Safety joint.....	20
PFT-HTS Hydro-Trip Sub.....	21
PFT-POP Pump Out Plug	22

PFT-IX Mechanical Production packer

PFT-IX Mechanical Set Retrievable Production Packer is a versatile, field proven, double grip tubing retrievable packer. The Packer can be set in tension or compression. The release mechanism of this packer incorporates an internal by-pass which opens to equalize pressure before the upper slips are released from the casing wall by means of a sequential release system.

Applications

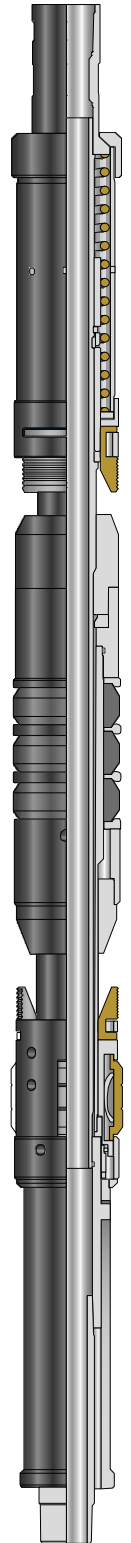
- Production, injection
- Zonal isolation.

Features, Advantages, and Benefits

- The packer can be set with compression or tension, enabling deployment in shallow and deep applications.
- 1/4 turn right hand rotation to set and release.
- Bypass valve below upper slips for easy wash out of debris when valve is opened, helps to release and retrieve the packer.
- Can handle high differential pressure from above and below.

Specifications

OD in/mm	Weight lb./ft.	Casing		Packer		
		Min. I.D. in/mm	Max ID in/mm	Max OD in/mm	Min ID in/mm	Standard Thread Connections
4-1/2 114.3	9.5 - 13.5	3.920 99.57	4.090 103.89	3.750 95.25	1.922 48.82	2-3/8" EU 8 RD
	13.5 - 15.1	3.826 97.18	3.920 99.57	3.680 93.47	1.922 48.82	2-3/8" EU 8 RD
5 127.0	18.0 - 20.8	4.156 105.56	4.276 108.61	4.000 101.60	1.922 48.82	2-3/8" EU 8 RD
	11.5 - 15.0	4.408 111.96	4.560 115.82	4.125 104.78	1.922 48.82	2-3/8" EU 8 RD
5-1/2 139.7	20.0 - 23.0	4.670 118.62	4.778 121.36	4.516 114.71	1.938 49.23	2-3/8" EU 8 RD
	13.0 - 17.0	4.892 124.26	5.044 128.12	4.641 117.88	1.938 49.23	2-3/8" EU 8 RD
	20.0 - 23.0	4.670 118.62	4.778 121.36	4.516 114.71	2.484 63.09	2-7/8" EU 8 RD
	15.5 - 17.0	4.778 121.36	4.950 125.73	4.640 117.86	2.484 63.09	2-7/8" EU 8 RD
7 177.8	26.0 - 32.0	6.094 154.79	6.276 159.41	5.891 149.63	2.441 62.00	2-7/8" EU 8 RD
	17.0 - 26.0	6.276 159.41	6.538 166.07	6.000 152.40	2.441 62.00	2-7/8" EU 8 RD
7-5/8 193.7	33.7 - 39.0	6.625 168.28	6.765 171.83	6.458 164.03	2.441 62.00	2-7/8" EU 8 RD
9-5/8 244.5	43.5 - 53.5	8.535 216.79	8.755 222.38	8.281 210.34	3.937 100.00	4-1/2" EU 8 RD



PFT-R3S Single Grip Mechanical Production packer

PFT-R3S Single Grip Packer is compression-set, retrievable mechanical production packer. Packer is designed for use in wells where minimal differential pressure from below is anticipated so that a hold down device is not needed.

Applications

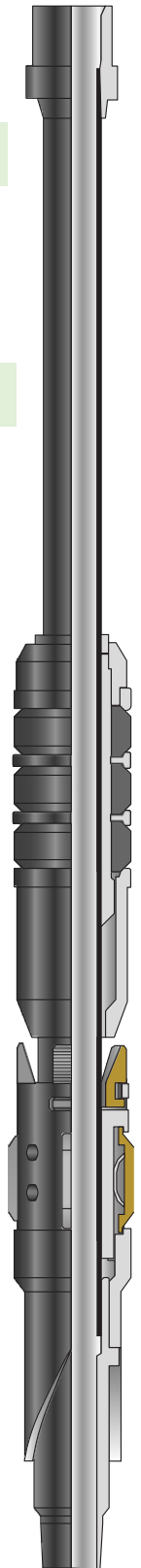
- Production, injection
- Zonal isolation
- Testing operations

Features, Advantages, and Benefits

- The packer can be set with 1/4 turn right hand rotation and set down weight.
- Straight Pick-up release.
- Rocker type slips
- Repositionable, automatically returns to the run-in hole position when moved up the hole.

Specifications

Casing				Packer	
O.D. (in./mm)	Weight (lb./ft - kg/m)	Min. I.D. (in./mm)	Max. O.D. (in./mm)	Max. O.D. (in./mm)	Thread Connection Box Up / Pin Down
4.500 114,30	9.5 - 13.5 14,14 - 20,09	3.920 99,57	4.090 103,89	3.771 95,78	2-3/8" EU 8 RD
5.500 139,70	20.0 - 23.0 29,76 - 34,22	4.670 118,62	4.778 121,36	4.500 114,30	2-3/8" EU 8 RD
	17.0 - 20.0 25,30 - 29,76	4.778 121,36	4.892 124,26	4.641 117,88	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
	13.0 - 15.5 19,34 - 23,06	4.950 125,73	5.044 128,12	4.781 121,44	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
	38.0 56,54	5.920 150,37	5.920 150,37	5.656 143,66	2-7/8" EU 8 RD
7.000 177,80	32.0 - 35.0 47,62 - 52,08	6.004 152,50	6.094 154,79	5.812 147,62	2-7/8" EU 8 RD
	26.0 - 29.0 38,69 - 43,15	6.184 157,07	6.276 159,41	5.968 151,59	2-7/8" EU 8 RD
	20.0 - 26.0 29,76 - 38,69	6.276 159,41	6.456 163,98	6.078 154,38	2-7/8" EU 8 RD
	17.0 - 20.0 25,30 - 29,76	6.456 163,98	6.538 166,07	6.281 159,54	2-7/8" EU 8 RD
	47.0 - 53.5 69,94 - 79,61	8.535 216,79	8.681 220,50	8.218 208,74	3-1/2" EU 8 RD
9.625 244,48	40.0 - 47.0 59,52 - 69,94	8.681 220,50	8.835 224,41	8.437 214,30	3-1/2" EU 8 RD
	29.3 - 36.0 43,60 - 53,57	8.921 226,59	9.063 230,20	8.593 218,26	3-1/2" EU 8 RD



PFT-R3D Double Grip Mechanical Production packer

PFT-R3D Double Grip Packer is compression-set, retrievable mechanical production packer. Packer is designed for use in wells where differential pressure from below is anticipated, Hydraulic hold down anchors the casing in such cases keeping bypass to the mandrel closed and locked during high pressure operations.

Applications

- Production, injection
- Zonal isolation
- Testing operations

Features, Advantages, and Benefits

- The packer can be set with 1/4 turn right hand rotation and set down weight.
- Straight Pick-up release.
- Rocker type slips
- Repositionable, automatically returns to the run-in hole position when moved up the hole.

Specifications

Casing				Packer	
O.D. (in./mm)	Weight (lb./ft - kg/m)	Min. I.D. (in./mm)	Max. O.D. (in./mm)	Max. O.D. (in./mm)	Thread Connection Box Up / Pin Down
4.500 114,30	9.5 - 13.5 14,14 - 20,09	3.920 99,57	4.090 103,89	3.771 95,78	2-3/8" EU 8 RD
5.500 139,70	20.0 - 23.0 29,76 - 34,22	4.670 118,62	4.778 121,36	4.500 114,30	2-3/8" EU 8 RD
	17.0 - 20.0 25,30 - 29,76	4.778 121,36	4.892 124,26	4.641 117,88	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
	13.0 - 15.5 19,34 - 23,06	4.950 125,73	5.044 128,12	4.781 121,44	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
7.000 177,80	38.0 56,54	5.920 150,37	5.920 150,37	5.656 143,66	2-7/8" EU 8 RD
	32.0 - 35.0 47,62 - 52,08	6.004 152,50	6.094 154,79	5.812 147,62	2-7/8" EU 8 RD
	26.0 - 29.0 38,69 - 43,15	6.184 157,07	6.276 159,41	5.968 151,59	2-7/8" EU 8 RD
	20.0 - 26.0 29,76 - 38,69	6.276 159,41	6.456 163,98	6.078 154,38	2-7/8" EU 8 RD
	17.0 - 20.0 25,30 - 29,76	6.456 163,98	6.538 166,07	6.281 159,54	2-7/8" EU 8 RD
	47.0 - 53.5 69,94 - 79,61	8.535 216,79	8.681 220,50	8.218 208,74	3-1/2" EU 8 RD
9.625 244,48	40.0 - 47.0 59,52 - 69,94	8.681 220,50	8.835 224,41	8.437 214,30	3-1/2" EU 8 RD
	29.3 - 36.0 43,60 - 53,57	8.921 226,59	9.063 230,20	8.593 218,26	3-1/2" EU 8 RD



PFT-LS Lok-Set Packer

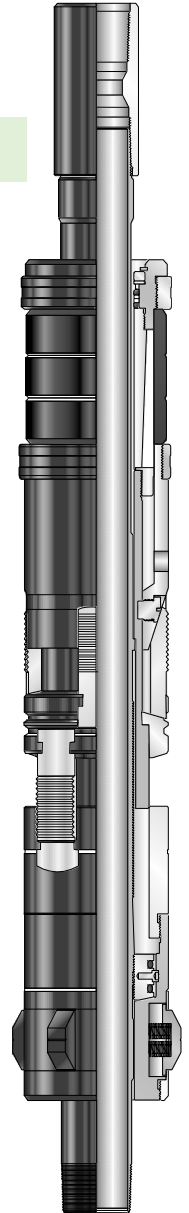
The Lok-Set is a compression set, retrievable packer that allows the tubing to be left in a tension, compression, or neutral condition. Application is mostly production, injection and zone isolation operations.

Applications

- Production, injection
- Zonal isolation
- Remedial operations

Features, Advantages, and Benefits

- Internal by-pass
- Opposed dovetail slips for positive set
- Holds pressure from above or below
- Can set in a tension, compression, or neutral condition
- Right-hand rotation sets and releases the packer
- Retracted dovetail slips



Specifications

Casing				Packer	
O.D. (in./mm)	Weight (lb./ft - kg/m)	Min. I.D. (in./mm)	Max. O.D. (in./mm)	Max. O.D. (in./mm)	Thread Connection Box Up / Pin Down
4.500 114,30	11.6 - 13.5 17,30 - 20,09	3.920 99,57	4.000 101,60	3.771 95,78	2-3/8" EU 8 RD
	9.5 - 10.5 14,1 - 15,6	4.052 102,92	4.090 103,89		
5.000 127,0	15.0 - 18.0 22,3 - 26,8	4.250 107,95	4.408 111,96	4.125 104,78	2-3/8" EU 8 RD
	11.5 - 15.0 17,1 - 22,3	4.408 111,96	4.560 115,82	4.250 107,95	
5.500 139,70	26.0 38,7	4.408 111,96	4.560 115,82	4.250 107,95	2-3/8" EU 8 RD
	20.0 - 23.0 29,76 - 34,22	4.670 118,62	4.778 121,36	4.500 114,30	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
	15.5 - 20.0 23,10 - 29,76	4.778 121,36	4.892 124,26	4.641 117,88	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
	13.0 - 15.5 19,34 - 23,06	4.950 125,73	5.044 128,12	4.781 121,44	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
7.000 177,80	38.0 56,54	5.920 150,37	5.920 150,37	5.656 143,66	2-7/8" EU 8 RD
	32.0 - 35.0 47,62 - 52,08	6.004 152,50	6.094 154,79	5.812 147,62	2-7/8" EU 8 RD
	26.0 - 29.0 38,69 - 43,15	6.184 157,07	6.276 159,41	5.968 151,59	2-7/8" EU 8 RD
	23.0 - 26.0 34,20 - 38,69	6.276 159,41	6.366 161,70	6.078 154,38	2-7/8" EU 8 RD
	17.0 - 20.0 25,30 - 29,76	6.456 163,98	6.538 166,07	6.281 159,54	2-7/8" EU 8 RD
9.625 244,48	47.0 - 53.5 69,94 - 79,61	8.535 216,79	8.681 220,50	8.218 208,74	3-1/2" EU 8 RD
	40.0 - 47.0 59,52 - 69,94	8.681 220,50	8.835 224,41	8.437 214,30	3-1/2" EU 8 RD
	29.3 - 36.0 43,60 - 53,57	8.921 226,59	9.063 230,20	8.593 218,26	3-1/2" EU 8 RD

PFT-H1 Hydraulic Production packer

The PFT-H1 is a high-pressure, double-grip, retrievable hydraulic- set production packer. The Packer is released by the straight pull of the tubing string. It features a unique upper-slip releasing system that reduces the strain required to release the slips. Dislocating a key non-directional slip first triggers an automatic release of the other slips.

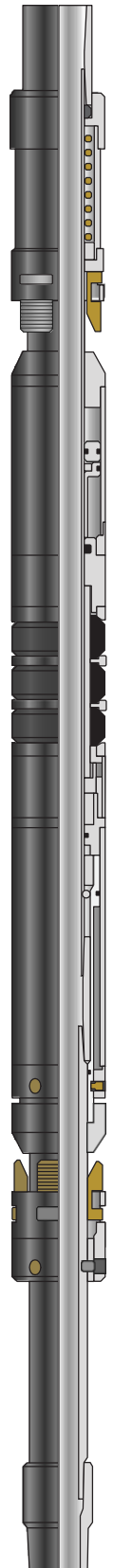
The production packer is recommended for use in well completions where the packer will be set after the well has been flanged up, as well as in deviated holes, gas-lift installations, and other completions where a mechanical- set packer is not suitable. Packer is ideal for stacked installations because the built-in zone-activated pressure-balance system offsets pressure differentials across the packer.

Applications

- Highly deviated wells, doglegs
- Stacked completions
- Coiled tubing completions
- Offshore applications

Features, Advantages, and Benefits

- Unique upper-slip releasing system
- Tension force to release packer easily adjusted before running
- All components locked to prevent pre-set
- Release shear pins not affected by differential pressures
- Tension force to release the packer is easily adjusted in the field.



Specifications

Size in / mm	Weight lb/ft kg/m	Max OD in / mm	Min ID in / mm	Standard Thread
4.500 / 114,30	5.10 / 22,47	3.656 / 92,86	1.984 / 50,39	2.375 EU 8RD
	9.5 - 13.5 / 14,1 - 20,1	3.766 / 95,66	1.984 / 50,39	2.375 EU 8RD
5.000 / 127,00	15.0 - 18.0 / 22,32 - 26,78	4.125 / 104,78	1.984 / 50,39	2.375 EU 8RD
	11.5 - 15.0 / 17,11 - 29,76	4.250 / 107,95	1.985 / 50,42	2.375 EU 8RD
5.500 / 139,70	20.0 - 23.0 / 29,8 - 29,8	4.500 / 114,30	1.985 / 50,42	2.375 EU 8RD
	14.0 - 20.0 / 20,8 - 29,8	4.625 / 117,48	1.985 / 50,42	2.375 EU 8RD
5.750 / 146,05	20.4 - 14.8 / 30,36 - 36,90	4.744 / 120,50	1.985 / 50,42	2.375" EU 8RD
6.000 / 152,40	15.0 - 18.0 / 22,32 - 26,78	5.188 / 131,78	1.985 / 50,42	2.375 EU 8RD
6.625 / 168,28	24.0 - 32.0 / 35,7 - 47,6	5.500 / 139,70	2.484 / 63,09	2.875 EU 8RD
7.000 / 177,80	26.0 - 32.0 / 38,7 - 47,6	5.875 / 149,23	2.484 / 63,09	2.875 EU 8RD
	17.0 - 26.0 / 25,3 - 38,7	6.000 / 152,40	2.484 / 63,09	2.875 EU 8RD
	26.0 - 32.0 / 38,7 - 47,6	5.875 / 149,23	2.984 / 75,79	3.500 EU 8RD
	17.0 - 26.0 / 25,3 - 38,7	6.000 / 152,40	2.984 / 75,79	3.500 EU 8RD
7.625 / 193.65	33.7 - 39.0 / 50,15 - 28,03	6.453 / 163,91	2.984 / 75,79	3.500 EU 8RD
	20.0 - 33.7 / 29,76 - 50,15	6.625 / 168,28	2.984 / 75,79	3.500 EU 8RD
9.625 / 244.48	40.0 - 53.5 / 59,52 - 79,62	8.250 / 209,55	2.984 / 75,79	3.500 EU 8RD
	32.3 - 43.5 / 48,06 - 42,01	8.500 / 215.90	2.984 / 75,79	3.500 EU 8RD
	40.0 - 53.5 / 59,52 - 79,62	8.250 / 209,55	3.938 / 100,03	4.500 EU 8RD

PFT-H6 Hydraulic Production packer

PFT-H6 Hydraulic-Set Retrievable Packer is a compact, economical, packer designed for low-to-medium pressure applications. The short body length makes it ideal for tight radius deviations and horizontal applications. The packer requires no downward mandrel movement for setting, allowing stacked applications. Straight pull releases the packer, and built-in bypass ports equalize pressure across the packer for ease in retrieval. The shear-release mechanism is isolated from the packer hydraulics to allow low release forces, even at full pressure differential.

Applications

- Highly deviated wells, doglegs
- Stacked completions
- Coiled tubing completions

Features, Advantages, and Benefits

- Compact overall length
- Field adjustable releasing force
- Stacked completion applications'
- Straight pull release

Specifications

Size in / mm	Weight lb/ft kg/m	Max OD in / mm	Min ID in / mm	Standard Thread
5.000 / 127,00	18.0 - 20.8 / 26,78 - 30,95	4.000 / 101,60	1.938 / 49,23	1.938 / 49,23
	11.5 - 15.0 / 17,11 - 22,32	4.125 / 104,78	1.938 / 49,23	1.938 / 49,23
5.500 / 139,70	17.0 - 23.0 / 25,30 - 34,22	4.500 / 114,30	2.000 / 50,80	2.000 / 50,80
	14.0 - 17.0 / 20,83 - 25,30	4.625 / 117,48	2.000 / 50,80	2.000 / 50,80
6.625 / 168,28	24.0 - 32.0 / 35,71 - 47,62	5.500 / 139,70	2.441 / 62,00	2.441 / 62,00
	17.0 - 24.0 / 25,30 - 35,71	5.781 / 146,84	2.441 / 62,00	2.441 / 62,00
7.000 / 177,80	26.0 - 32.0 / 38,69 - 47,62	5.875 / 149,23	2.441 / 62,00	2.441 / 62,00
	17.0 - 26.0 / 25,30 - 38,69	6.000 / 152,40	2.441 / 62,00	2.441 / 62,00
	26.0 - 32.0 / 38,69 - 47,62	5.875 / 149,23	2.984 / 75,79	2.984 / 75,79
	17.0 - 26.0 / 25,30 - 38,69	6.000 / 152,40	2.984 / 75,79	2.984 / 75,79
9.625 / 244,48	40.0 - 53.5 / 59,52 - 79,61	8.266 / 209,96	2.984 / 75,79	2.984 / 75,79
	29.3 - 43.5 / 43,60 - 64,73	8.516 / 216,31	2.984 / 75,79	2.984 / 75,79



PFT-H2 Hydraulic-Set Dual String Production Packer

The PFT-H2 is a dual-string, hydraulic-set, double-grip retrievable production packer. It is usually run above a single string hydraulic or wireline set single string packer in a dual completion. The PFT-H2 can also be readily modified for use as a low-pressure packer in a submersible pump completion. Its compact length makes it ideal for use in deviated wells or in applications where doglegs are anticipated. The PFT-H2 is available with additional bores for ESP cable, chemical-injection lines, control lines, and well-monitoring devices.

The PFT-H2 has a sequential upper-slip releasing system that is designed to release each slip individually to reduce the pull required to release the packer. The angles on the slips, cone, and upper-slip body results in release forces that allow the penetration of the slips to be released smoothly from the casing.



Applications

- Submersible pump installations
- Monitoring, gas venting, chemical injection, and hydraulic-line access
- Multi-zone isolation
- Deviated or horizontal wells

Features, Advantages, and Benefits

- Field adjustable release
- All components locked to prevent preset
- Release shear pins not affected by differential pressures Short and compact, ideal for doglegs and deviated wells Setting cylinder below elements eliminates all of the critical O-rings after setting
- Straight-pull release
- Can be pressure-tested on location
- Available in long or short sting set configuration. Multiple bores available
- Cost effective
- Can be easily modified into an ESP Packer Available with a wide variety of accessories

Specifications

Size in / mm	Weight lb/ft kg/m	Max OD in / mm	Long String Min ID in / mm	Short String Min ID in / mm	Long String Standard Thread	Short String Standard Thread
7.000 177,80	23.0 - 32.0 34,2 - 47,6	5.938 150,83	1.938 49,23	1.938 49,23	2.375 EU 8RD BOX	2.375 EU 8RD BOX
	17.0 - 29.0 25,3 - 43,2	6.000 152,40	1.938 49,23	1.938 49,23	2.375 EU 8RD BOX	2.375 EU 8RD BOX
9.625 244,48	47.0 - 53.5 21,32 - 79,62	8.313 211,12	2.919 74,14	2.919 74,14	3.500 NU 10 RD BOX	3.500 NU 10 RD BOX

PFT-H4 hydraulic/hydrostatic Single String Production Packer

hydraulic/hydrostatic packers are hydraulically set, single-string packers using hydrostatic pressure to provide additional packoff force in the setting mechanism to isolate the annulus from the production conduit. The hydrostatic pressure reduces the surface pressure required for setting. The packers require no downward mandrel movement for setting, enabling reliable, simultaneous setting in stacked-packer installations. The start-to-set shear screws may be adjusted to set multiple packers sequentially.

The PFT-H4L packer has the same features as the PFT-H4L and a larger bore

Applications

- Deviated wells
- Onshore or offshore completions
- Multiple-zone selective completions

Features, Advantages, and Benefits

- The hydraulic packer setting and straight-pull release without tubing rotation simplify deployment and retrieval in deviated and flanged wells.
- Setting the packer with hydrostatic pressure reduces the applied surface pressure, lowering rig costs.
- The soft center element in the packing system packs off first, and the two hard end elements back up the center for reliability.



Specifications

Casing				Packer	
O.D.	WEIGHT	MIN. I.D.	MAX I.D.	MAX O.D.	Standard Thread Connections
(IN./mm)	(LBS./FT. - kg/m)	(IN./mm)	(IN./mm)	(IN./mm)	
5-1/2 139.70	20.0 - 23.0 29.76 - 34.22	4.670 118,62	4.778 121,36	4.500 114,30	2-3/8 EU 8RD
	15.5 - 20.0 23.06 - 29.76	4.778 121,36	4.950 125,73	4.641 117,88	2-3/8 EU 8RD
	13.0 - 15.5 19.34 - 23.06	4.950 125,73	5.044 128,12	4.781 121,44	2-3/8 EU 8RD
6 152.40	26.0 38.69	4.950 125,73	5.044 128,12	4.781 121,44	2-3/8 EU 8RD
6-5/8 168.28	24.0 35.71	5.830 148,08	5.937 150,80	5.656 143,66	2-7/8 EU 8RD
	17.0 - 20.0 25.30 - 29.76	6.049 153,64	6.135 155,83	5.812 147,62	2-7/8 EU 8RD
7 177.80	38.0 56.54	5.830 148,08	5.920 150,37	5.656 143,66	2-7/8 EU 8RD
	32.0 - 35.0 47.62 - 52.08	6.004 152,50	6.094 154,79	5.812 147,62	2-7/8 EU 8RD
	26.0 - 29.0 38.69 - 43.15	6.184 157,07	6.276 159,41	5.968 151,59	2-7/8 EU 8RD
	26.0 - 29.0 38.69 - 43.15	6.184 157,07	6.276 159,41	5.968 151,59	3-1/2 EU 8RD
	20.0 - 26.0 29.76 - 38.69	6.276 159,41	6.366 161,70	6.078 154,38	2-7/8 EU 8RD
	20.0 - 26.0 29.76 - 38.69	6.276 159,41	6.366 161,70	6.078 154,38	3-1/2 EU 8RD
7-5/8 193.68	33.7 - 39.0 50.15 - 58.03	6.625 168,28	6.765 171,83	6.453 163,91	2-7/8 EU 8RD
	24.0 - 29.7 35.71 - 44.19	6.875 174,63	7.025 178,44	6.672 169,47	2-7/8 EU 8RD
	33.7 - 39.0 50,15 - 58,03	6.625 168,28	6.765 171,83	6.453 163,91	3-1/2" EU 8RD

PFT-SBP Permanent Seal Bore Packer

The PFT-SBP Permanent Seal Bore Production Packers are versatile high-performance permanent packers designed for high differential pressure and hostile environment applications. The Packer may be set on wireline or hydraulically. One-piece slips eliminate premature setting. Element metal back-up rings provide 360° casing contact to prevent rubber extrusion at high temperature and pressure.

Applications

- Fracture stimulations with anchored or floating tubing strings
- Production and testing

Features, Advantages, and Benefits

- Tubing string removal without unseating the packer
- One-piece slip eliminates premature setting.



Specifications

Size in / mm	Weight lb/ft kg/m	Max OD in / mm	Bore ID in / mm	Min Bore ThruSeals in / mm
4.500 114,30	13.5 - 15.1 20,09 - 22,47	3.600 91,44	2.500 63,50	1.910 48,51
	9.5 - 13.5 14,14 - 20,09	3.750 95,25	2.688 68,28	1.938 49,23
5.000 127,00	18.0 - 23.2 26,78 - 34,52	3.968 100,79	2.688 68,28	1.938 49,23
	15.0 - 18.0 22,32 - 26,78	3.968 100,79	2.390 60,71	1.703 43,26
5.500 139,70	17.0 - 23.0 25,30 - 34,22	4.437 112,70	2.688 68,28	1.938 49,23
	13.0 - 17.0 19,34 - 25,30	4.563 115,90	2.688 68,28	1.938 49,23
	17.0 - 23.0 25,30 - 34,22	4.437 112,70	3.000 76,20	2.375 / 2.270 60,33 / 57,66
	13.0 - 17.0 19,34 - 25,30	4.563 115,90	3.000 76,20	2.375 / 2.270 60,33 / 57,66
7.000 177,80	32.0 - 38.0 47,62 - 56,54	5.473 139,01	3.250 82,55	2.406 61,11
	23.0 - 32.0 34,22 - 47,62	5.692 144,58	3.250 82,55	2.406 61,11
	17.0 - 20.0 25,30 - 29,76	6.187 157,15	3.250 82,55	2.406 61,11
	32.0 - 38.0 47,62 - 56,54	5.687 144,45	4.000 101,60	3.000 76,20
	26.0 - 29.0 38,69 - 43,15	5.875 149,23	4.000 101,60	3.000 76,20
	20.0 - 23.0 29,76 - 34,22	6.000 152,40	4.000 101,60	3.000 76,20
7.625 193,68	24.0 - 39.0 35,71 - 58,03	6.255 158,88	3.250 82,55	2.406 61,11
	24.0 - 33.7 35,71 - 50,15	6.500 165,10	4.000 101,60	3.000 76,20
	33.7 - 39.0 50,15 - 58,03	6.250 158,75	4.000 101,60	3.000 76,20
9.625 244,48	29.3 - 58.4 43,60 - 86,90	8.125 206,38	3.250 82,55	2.406 61,11
	29.3 - 58.4 43,60 - 86,90	8.125 206,38	4.000 101,60	3.000 76,20
	29.3 - 58.4 43,60 - 86,90	8.125 206,38	4.750 120,65	3.750 95,25
	29.3 - 58.4 43,60 - 86,90	8.125 206,38	6.000 152,40	4.875 123,82

PFT-SBP-U Permanent Dual Seal Bore Packer

The PFT-SBP-U packer features a large upper bore that permits completions with large-ID tubing in wells with high production rates. This packer can be run with tubing anchored in the upper bore or with a polished bore receptacle (PBR) above the packer for completions requiring tubing movement compensation.

Features, Advantages, and Benefits

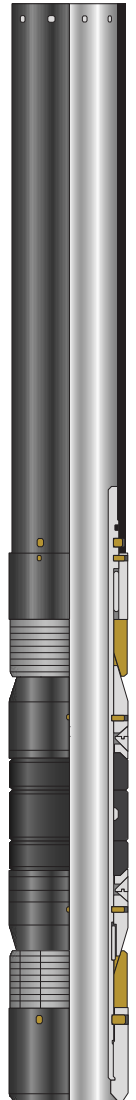
- Tubing string removal without unseating the packer
- One piece slip eliminates premature setting.

Applications

- Fracture stimulations with anchored or floating tubing strings
- Production and testing

Specifications

Size in / mm	Weight lb/ft kg/m	Max OD in / mm	Upper Bore ID in / mm	Lower Bore ID in / mm	Min Seal BoreThru Seals in / mm
7.000 177,80	32.0 - 38.0 47,62 - 56,54	5.687 144,45	4.750 120,65	4.000 101,60	3.870 98,30
	26.0 - 29.0 38,69 - 43,15	5.875 149,23	4.750 120,65	4.000 101,60	3.870 98,30
	20.0 - 23.0 29,76 - 34,22	6.000 152,40	4.750 120,65	4.000 101,60	3.870 98,30



PFT-TAC Tubing Anchor Catcher

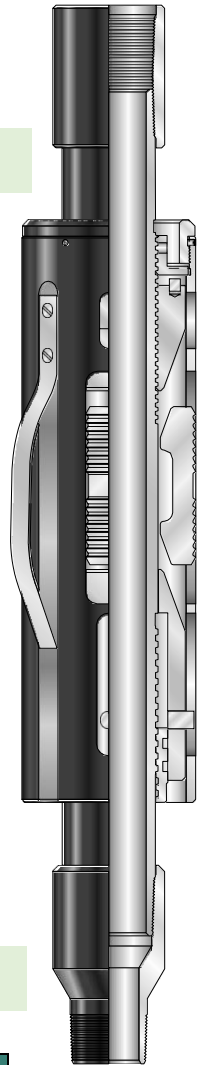
PFT-TBA tubing anchor catcher is run below a sucker-rod pump to anchor the lower end of the tubing string. Then the string can be landed in tension, reducing the tubing tendency to corkscrew from cyclical loading during pump operation. By eliminating tubing movement, the catcher improves pump efficiency and reduces tubing and rod wear.

Applications

- Sucker-rod pumping applications
- Single-string, non sealing anchored completions

Features, Advantages, and Benefits

- The left rotation to set the catcher and right rotation to release it provide simple operation on the rig.
- The double-grip slip anchors the tubing to prevent upward and downward movements, increasing pump efficiency by lengthening the stroke and lowering operating costs by reducing maintenance and downtime from tubing and sucker-rod wear.
- The double-grip slip catches parted tubing, reducing fishing costs.
- The full bore-through catcher provides access for wireline tools and other equipment.
- The straight-pull emergency shear release provides release-force adjustment with shear pins if the catcher cannot be retrieved normally.
- The catcher has few parts to take apart, making it easy and inexpensive to redress.



Specifications

Casing				Packer	
O.D. (in./mm)	Weight (lb./ft - kg/m)	Min. I.D. (in./mm)	Max. O.D. (in./mm)	Max. O.D. (in./mm)	Thread Connection Box Up / Pin Down
4.500 114,30	9.5 – 13.5 14,1 – 20,1	3.920 99,57	4.090 103,89	3.755 95,38	2-3/8" EU 8 RD 2-7/8" EU 8 RD
5.000 127,0	15.0 - 18.0 22,3 - 26,8	4.250 107,95	4.408 111,96	4.000 101,60	2-3/8" EU 8 RD 2-7/8" EU 8 RD
5.500 139,70	13.0 – 23.0 19,3 – 34,2	4.670 118,62	5.044 128,12	4.510 114,55	2-3/8" EU 8 RD/ 2-7/8" EU 8 RD
6.625 168,3	28.0 – 32.0 41,7 – 47,6	5.675 114,15	5.791 147,09	5.530 140,46	2-3/8" EU 8 RD 2-7/8" EU 8 RD
7.000 177,80	20.0 – 38.0 29.8 – 56.6	5.920 150,37	6.456 163,98	5.530 140,46	2-3/8" EU 8 RD 2-7/8" EU 8 RD
	17.0 – 20.0 25,3 – 29.8	6.456 163,98	6.538 166,07		
	17.0 – 38.0 25,3 - 56.6	5.920 150,37		5.510 139,95	
	9.625 244,48	32.3 – 47.0 48.1 – 69.9	8.535 216,79	9.001 228,63	

Seal Bore Tubing Accessories

Seal Bore Tubing Accessories are offered in a variety of alloy materials and seal systems to allow the operator to design a well system compatible with well conditions. Well bore temperature, pressure differential, concentration of hostile elements (CO₂, H₂S, oil concentration, etc.) and seal movement must be considered to determine metallic material and seal type best suited for best performance.

Seals come in two basic types:

- Molded or bonded seals where the elastomer is bonded to a metal ring and the internal seal is provided by an O-ring. This type of seal can be used in applications where they may need to move into and out of the seal bore. Readily available in Nitrile, HNBR, Viton and other specialty elements on request.
- Chevron or Vee Seals should be used in applications where the seals will remain in the seal bore. Some of the available materials available are Nitrile, HNBR, Viton and other specialty elements on request.

Features, Advantages, and Benefits

- Thread connections are API as a standard, but premium threads can be supplied upon request
- Available in materials suitable for hostile environments
- Pressure rating up to 10,000-psi
- Wide range of seal materials available to suit any well conditions
- For use with CMS DSB and CMS RSB seal bore packers based on seal bore size

Seal Bore Packer Accessories

The CMS Seal Bore Packer accessories are available in standard AISI 4130-4145, 80 - 105 KSI material. Other materials are available on request. Listed below are suggested materials for various well applications.

- AISI 4130-4145, L80 KSI Minimum for use in sour service.
- AISI 4130-4145, 110 KSI Minimum for use in high pressure applications. 9 Cr 1 Mo or 13 Cr alloy steel for use in H₂S and CO₂ applications.
- Inconels or Incoloy 925 alloy steel for use in sever corrosion applications.

Features, Advantages, and Benefits

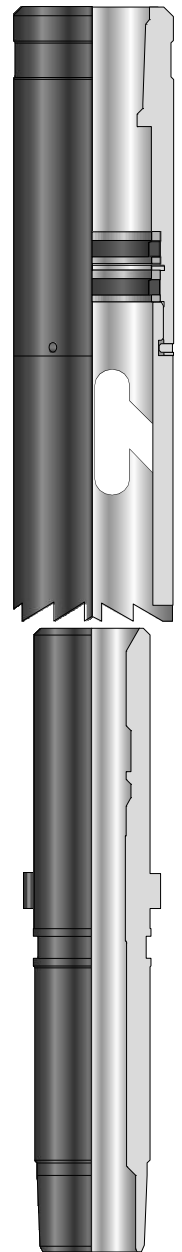
- Available in standard or premium materials
- Available with standard API thread connections or with premium threads upon request
- Additional sizes and lengths are available upon request to custom fit well application.

Accessories

PFT-2 On/Off Tool

PFT-2 on-off tool enables the tubing string to be disconnected above a packer without the need to unset the packer for tubing retrieval, and temporary zone abandonment. The tool has an internal lock profile for landing a wireline plug sit and isolate lower zone.

The tool comprises of two basic components, the overshot mounted on the tubing string and the stinger mounted on the packer. The overshot disengages with either a standard left release or an optional right quarter-turn release. The washover shoe on the overshot cuts through debris allowing easy engagement of the stinger.



Features, Advantages, and Benefits

- Tool can be used as a bridge plug for zonal isolation or temporary abandonment of lower zones. Nipple sizes are available on request.
- Simple standard left or optional right quarter turn release.
- The washover shoe cuts through debris to release stuck equipment in the wellbore.

Specifications

SIZE (in./mm)	MAX. O.D. OF TOOL (in./mm)	THREAD CONNECTION BOX UP	
3.500 88,90	2.766 70,26	1.900" EU 10 RD	
4.000 101,60	3.260 82,80	2.375" EU 8 RD	
4.500 114,30	3.680 93,47		
4-1/2 114,30	3.750 95,25		
5.000 127,00	3.750 95,25		
5.500 139,70	4.515 114,68		
5.500 139,70	4.515 114,68		
7.000 177,80	5.880 149,35		
7.000 177,80	5.880 149,35		2.875" EU 8 RD
7.000 177,80	5.891 149,63		3.500" EU 8 RD
7.625 193,68	6.390 162,31		2.875" EU 8 RD
8.625 219,08	7.500 190,50	4.500" EU 8 RD	
9.625 244,48	8.265 209,93	4.500" EU 8 RD	

PFT-SSJ Shear Safety joint

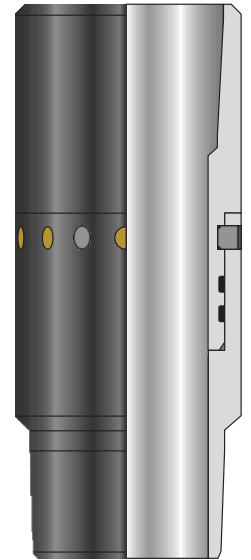
The PFT-SSJ Shear Safety Joint provides a means of releasing the tubing string from the rest of the completion in an emergency. A straight pull separates the tool at a predetermined shear value. The Shear Safety Joint allows torque to be transmitted through the tool without affecting the shear screws.

Features, Advantages, and Benefits

- Field adjusted shear release.
- Simple design.
- Torque transmitted without shearing shear screws.

Specifications

Tubing (in./mm)	Tool		
	MAX O.D (in./mm)	MIN I.D. (in./mm)	STANDARD THREAD CONNECTION BOX x PIN
1-1/4 31.8	2.250 57.15	1.250 31.75	1.660" NU 10RD
2-3/8 60.3	3.063 77.80	2.000 50.80	2-3/8" EU 8RD
2-7/8 73.0	3.688 93.68	2.500 63.50	2-7/8" EU 8RD
3-1/2 88.90	4.500 114.30	3.000 76.20	3-1/2" EU 8RD
4-1/2 114.3	5.562 141.27	4.000 101.60	4-1/2" EU 8RD



PFT-RSJ Rotational Safety joint

The PFT-RSJ Rotational Safety Joint provides a means of releasing the tubing string from the rest of the completion in an emergency. Rotational safety joint is used between packers in single, dual or triple completions. Safety joint is release with left or right hand rotation depending on the requirement.

Features, Advantages, and Benefits

- Left or right hand release.
- Simple design.
- Allows removal of tubing string when retrieval problems are anticipated.

Specifications

Tubing (in./mm)	Tool		
	MAX O.D (in./mm)	MIN I.D. (in./mm)	STANDARD THREAD CONNECTION BOX x PIN
1-1/4 31.8	2.255 57.28	1.234 31.34	1.660" NU 10RD
2-3/8 60.3	3.078 78.18	1.984 50.39	2-3/8" EU 8RD
2-7/8 73.0	3.703 94.06	2.484 63.09	2-7/8" EU 8RD
3-1/2 88.90	4.516 114.71	2.984 75.79	3-1/2" EU 8RD
3-1/2 88.9	4.760 120.90	2.680 68.07	3-1/2" IF
4-1/2 114.3	6.140 155.96	3.740 95.00	4-1/2" IF



PFT-HTS Hydro-Trip Sub

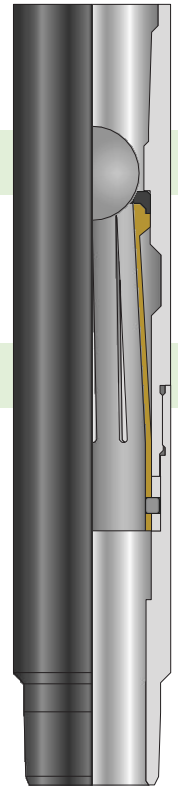
The PFT-HTS Hydro Trip Sub is a pressure actuated device installed in tubing string below a hydraulic actuated tool such as Hydraulic packers to provide a method of applying tubing pressure required to activate the tool.

Features, Advantages, and Benefits

- Full bore after shearing out.
- Circulation before ball drop.
- Field adjusted shear value.

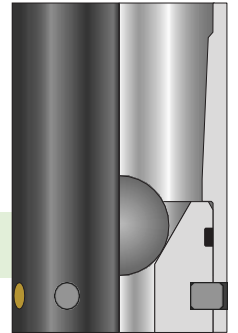
Specifications

Size in / mm	Max OD in / mm	Min ID (Before Shift)in / mm	Min ID (After Shift)in / mm	Standard Thread
2.375 60,33	3.030 76,96	1.625 41,28	1.901 48,29	2.375 EU 8RD Box x Pin
2.875 73,03	3.717 94,41	2.000 50,80	2.370 60,20	2.875 EU 8RD Box x Pin
3.500 88,90	4.500 114,30	2.312 58,72	2.776 70,51	3.500 EU 8RD Box x Pin



PFT-POP Pump Out Plug

The Pump Out Plug is used as a temporary plug to seal off pressure below the packer. The pump out plug is removed by the application of pump pressure to the tubing string and when sheared out allows the tubing to be full opening below the packer. The pump out plug may be ordered with flat bottom, bullet nose or a threaded bottom to allow tubing or a plug catcher sub to be run below the pump out plug.



Features, Advantages, and Benefits

- Full bore after shearing out.
- Circulation before ball drop.
- Field adjusted shear value.

Specifications

Size in / mm	Max OD in / mm	Seat ID in / mm	Body ID in / mm
2.375 60,33	3.250 82,55	1.000 25,00	2.000 50,80
2.875 73,03	4.250 107,95	1.187 30,00	2.500 63,50
3.500 88,90	4.500 114,30	1.187 30,00	3.000 76,20