



Silver Fox

RETRIEVABLE PACKERS

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Packers form the basis of the cased-hole completion design. The packer is a sealing device that isolates and contains produced fluids and pressures within the wellbore to protect the casing and other formation above or below the producing zone. This is essential to the basic function of most wells.

APPLICATIONS

- *Prevent downhole movement of the tubing string*
- *Support some of the weight of the tubing*
- *Often improve well flow and production rate*
- *Protect the annular casing from corrosion due to produced fluids and high pressures*
- *Provide a means of separation of multiple producing zones*
- *Limit well control to the tubing at the surface for safety purposes*
- *Hold well-servicing fluid (kill fluids, packer fluids) in the casing annulus*

LOCATIONS

229 CLEARVIEW DRIVE,
RED DEER COUNTY, ALBERTA, CANADA
403-342-1640

5820 FM 455
SANGER, TEXAS, USA
940-458-3550

2101 W 37TH ST
ODESSA, TEXAS, USA
432-363-5569



RETRIEVABLE PACKERS



AS1-X MECHANICAL SET

The AS1-X Mechanical set single string is a retrievable, double-grip compression or tension-set production packer that holds pressure from above or below. Once set, the tubing string can be left in tension, compression, or in a neutral position. These flexible features allow the AS1-X to be run in a variety of applications ranging from Production Packer to Bridge Plug to Service Packer.

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 pulled from the casing.

The AS1-X is a field proven design, that is very versatile, with ratings up to 10K (69MPa) pressure differential.

To Set the Packer: Run the packer to setting depth, apply 1/4 right hand rotation at the tool. Set down sufficient weight to set slips and pack off elements. Pull packer into tension to set upper slips into casing.

To Release the Packer: Place packer into compression, apply 1/4 right hand rotation at the tool. Pickup tubing while holding right hand torque and apply enough tension to release upper slips and unset packer, allow elements to relax. Pull packer from wellbore.

FEATURES:

- Holds up to 10K PSI (69MPa) differentials from above or below
- 1/4 right hand rotation at the tool to set and release
- Upper slip releasing system that reduces the force required to release the packer
- Internal bypass reduces swabbing
- Tubing can be held in tension, compression or neutral set
- Bypass valve is below upper slips allowing debris to be washed from slips when valve is opened

OPTIONAL:

- Element options available for various well bore conditions
- TefCote™, NickelCote™, Nylon
- Protective coatings available
- Carbide Slips and Drag Blocks
- 1/4 left hand rotation to set
- Emergency shear release

RETRIEVABLE PACKERS



AS 1-X MECHANICAL SET



PACKER		CASING		TOOL SIZE				
SIZE	THREAD	WT (T&C)	RANGE	OD* GAGE	BLOCKS	ID	PRESSURE RATING	
MM IN	MM IN	KG/M LBS/FT	MM IN	MM IN	MM IN	MM IN	MPA KSI	
101.6 4	60.3 2-3/8	14.14 - 16.37 9.5 - 11.0	88.39 - 90.12 3.480 - 3.548	82.55 3.250	-	48.3 1.90	48 7	-
114.3 4-1/2	60.3 2-3/8	14.14 - 20.09 9.5 - 13.5	99.57 - 103.89 3.920 - 4.090	95.25 3.750	-	49.3 1.94	48 7	69 10
		20.09 - 22.47 13.5 - 15.1	97.18 - 99.57 3.826 - 3.920	92.71 3.650	92.76 3.652	49.3 1.94	48 7	69 10
		17.11 - 22.32 11.5 - 15.0	111.96 - 115.82 4.408 - 4.560	104.78 4.125	106.43 4.190	49.3 1.94	48 7	69 10
127 5	60.3 2-3/8	26.78 - 31.25 18.0 - 21.0	105.51 - 108.61 4.154 - 4.276	101.60 4.000	-	49.3 1.94	48 7	69 10
		20.83 - 29.76 14.0 - 20.0	121.36 - 127.30 4.778 - 5.012	117.48 4.625	-	50.0 1.97	48 7	69 10
		29.76 - 34.23 20.0 - 23.0	118.62 - 121.36 4.670 - 4.778	114.30 4.500	-	50.0 1.97	48 7	69 10
139.7 5-1/2	60.3 2-3/8	34.23 - 38.69 23.0 - 26.0	115.52 - 118.62 4.548 - 4.670	111.76 4.400	-	50.0 1.97	-	69 10
		19.34 - 23.06 13.0 - 15.5	125.73 - 128.12 4.950 - 5.044	121.44 4.781	123.06 4.845	60.2 2.37	48 7	69 10
		23.06 - 25.30 15.5 - 17.0	124.26 - 125.73 4.892 - 4.950	117.48 4.625	120.52 4.745	60.2 2.37	48 7	69 10
		29.76 - 34.23 20.0 - 23.0	118.62 - 121.36 4.670 - 4.778	114.30 4.500	-	60.2 2.37	48 7	69 10
	73.0 2-7/8	34.22 - 38.69 23.0 - 26.0	115.52 - 118.62 4.548 - 4.670	111.76 4.400	-	60.2 2.37	48 7	69 10
		152.4 6	73.0 2-7/8	34.22 - 38.69 23.0 - 26.0	130.35 - 133.10 5.132 - 5.240	124.46 4.900	-	60.2 2.37
168.3 6-5/8	73.0 2-7/8	29.76 - 35.71 20.0 - 24.0	150.39 - 153.64 5.921 - 6.049	146.05 5.750	-	60.2 2.37	48 7	-
		35.71 - 47.62 24.0 - 32.0	144.15 - 150.39 5.675 - 5.921	139.70 5.500	140.59 5.535	60.2 2.37	48 7	-
		25.30 - 38.68 17.0 - 26.0	159.41 - 166.07 6.276 - 6.538	153.97 6.062	-	60.2 2.37	48 7	69 10
177.8 7	73.0 2-7/8	38.68 - 47.61 26.0 - 32.0	154.79 - 159.41 6.094 - 6.276	149.23 5.875	-	60.2 2.37	48 7	69 10
		25.30 - 38.68 17.0 - 26.0	159.41 - 166.07 6.276 - 6.538	153.97 6.062	157.35 6.195	73.9 2.91	48 7	69 10
		38.68 - 47.61 26.0 - 32.0	154.79 - 159.41 6.094 - 6.276	149.23 5.875	150.75 5.935	73.9 2.91	48 7	69 10
	88.9 3-1/2	35.71 - 44.19 24.0 - 29.7	174.63 - 178.44 6.875 - 7.025	169.47 6.672	-	60.2 2.37	48 7	69 10
193.7 7-5/8	73.0 2-7/8	50.15 - 58.03 33.7 - 39.0	168.28 - 171.83 6.625 - 6.765	163.91 6.453	-	60.2 2.37	48 7	69 10
		35.71 - 59.51 24.0 - 40.0	196.22 - 205.66 7.725 - 8.097	190.50 7.500	-	73.9 2.91	48 7	-
		219.1 8-5/8	88.9 3-1/2	48.07 - 64.74 32.3 - 43.5	222.38 - 228.63 8.755 - 9.001	215.90 8.500	-	100.3 3.95
244.5 9-5/8	114.3 4-1/2	64.74 - 79.61 43.5 - 53.5	216.79 - 222.38 8.535 - 8.755	209.55 8.250	-	100.3 3.95	41 6	-
		48.74 - 75.90 32.7 - 51.0	250.19 - 258.88 9.850 - 10.192	245.87 9.680	-	100.3 3.95	41 6	-
		273.1 10-3/4	114.3 4-1/2	48.74 - 75.90 32.7 - 51.0	250.19 - 258.88 9.850 - 10.192	245.87 9.680	100.3 3.95	41 6

* WHEN COLLAPSED DRAG BLOCK OD IS LARGER THAN GAGE OD



RETRIEVABLE PACKERS



AS1-X WIRELINE SET

The AS1-X Wireline set single string is a retrievable, double-grip compression or tension-set production packer that holds pressure from above or below. Once set the tubing string can be left in tension, compression, or in a neutral position. These flexible features allow the AS1-X to be run in a variety of applications ranging from Production Packer to Bridge Plug to Service Packer.

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 pulled from the casing.

The AS1-X is a field proven design, that is very versatile, with ratings up to 10K (69MPa) pressure differential.

To Set the Packer: Install appropriate sized WLAK (wireline adaptor kit) onto packer. Run packer assembly into the wellbore to desired setting depth. Activate setting tool to fully set packer and shear the shear screws from the T-2 stinger. Pull setting assemble from the wellbore. Run T-2 Overshot on the tubing and latch onto stinger.

To Release the Packer: Place packer into compression, apply $\frac{1}{4}$ right hand rotation at the tool. Pickup tubing while holding right hand torque and apply enough tension to release upper slips and unset packer, allow elements to relax. Pull packer from wellbore.

FEATURES:

- Holds up to 10K PSI (69MPa) differentials from above or below
- Wireline set using AS1-X wireline adaptor kit on standard Baker setting tools
- Mechanically released with $\frac{1}{4}$ right hand rotation at the tool
- Upper slip releasing system that reduces the force required to release the packer
- Internal bypass reduces swabbing
- Tubing can be held in tension, compression or neutral set
- Bypass valve is below upper slips allowing debris to be washed from slips when valve is opened

OPTIONAL:

- Element options available for various well bore conditions
- TefCote™, NickelCote™, Nylon
- Protective coatings available
- Carbide Slips and Drag Blocks
- Emergency shear release

RETRIEVABLE PACKERS



AS 1-X WIRELINE SET



PACKER		CASING		TOOL SIZE		PRESSURE RATING	
SIZE	THREAD	WT (T&C)	RANGE	OD	ID	MPA	
MM	MM	KG/M	MM	MM	MM	KSI	
IN	IN	LBS/FT	IN	IN	IN		
114.3 4-1/2	60.3 2-3/8	14.14 - 20.09	99.57 - 103.89	95.25	49.3	48	69
		9.5 - 13.5	3.920 - 4.090	3.750	1.94	7	10
		20.09 - 22.47	97.18 - 99.57	92.71	49.3	48	69
127 5	60.3 2-3/8	13.5 - 15.1	3.826 - 3.920	3.650	1.94	7	10
		17.11 - 22.32	111.96 - 115.82	104.78	49.3	48	69
		11.5 - 15.0	4.408 - 4.560	4.125	1.94	7	10
	60.3 2-3/8	26.78 - 31.25	105.51 - 108.61	101.60	49.3	48	69
		18.0 - 21.0	4.154 - 4.276	4.000	1.94	7	10
		20.83 - 29.76	121.36 - 127.30	117.48	50.0	48	69
139.7 5-1/2	60.3 2-3/8	14.0 - 20.0	4.778 - 5.012	4.625	1.97	7	10
		29.76 - 34.23	118.62 - 121.36	114.30	50.0	48	69
		20.0 - 23.0	4.670 - 4.778	4.500	1.97	7	10
		34.23 - 38.69	115.52 - 118.62	111.76	50.0	-	69
	73.0 2-7/8	23.0 - 26.0	4.548 - 4.670	4.400	1.97	7	10
		19.34 - 23.06	125.73 - 128.12	121.44	60.2	48	69
		13.0 - 15.5	4.950 - 5.044	4.781	2.37	7	10
		23.06 - 25.30	124.26 - 125.73	117.48	60.2	48	69
		15.5 - 17.0	4.892 - 4.950	4.625	2.37	7	10
		29.76 - 34.23	118.62 - 121.36	114.30	60.2	48	69
		20.0 - 23.0	4.670 - 4.778	4.500	2.37	7	10
		34.22 - 38.69	115.52 - 118.62	111.76	60.2	48	69
		23.0 - 26.0	4.548 - 4.670	4.400	2.37	7	10
		34.22 - 38.69	130.35 - 133.10	124.46	60.2	48	69
		23.0 - 26.0	5.132 - 5.240	4.900	2.37	7	10
		29.76 - 35.71	150.39 - 153.64	146.05	60.2	48	-
168.3 6-5/8	73.0 2-7/8	20.0 - 24.0	5.921 - 6.049	5.750	2.37	7	-
		35.71 - 47.62	144.15 - 150.39	139.70	60.2	48	-
		24.0 - 32.0	5.675 - 5.921	5.500	2.37	7	-
177.8 7	73.0 2-7/8	25.30 - 38.68	159.41 - 166.07	153.97	60.2	48	69
		17.0 - 26.0	6.276 - 6.538	6.062	2.37	7	10
		38.68 - 47.61	154.79 - 159.41	149.23	60.2	48	69
	88.9 3-1/2	26.0 - 32.0	6.094 - 6.276	5.875	2.37	7	10
		25.30 - 38.68	159.41 - 166.07	153.97	73.9	48	69
		17.0 - 26.0	6.276 - 6.538	6.062	2.91	7	10
		38.68 - 47.61	154.79 - 159.41	149.23	73.9	48	69
		26.0 - 32.0	6.094 - 6.276	5.875	2.91	7	10
		35.71 - 44.19	174.63 - 178.44	169.47	60.2	48	69
193.7 7-5/8	73.0 2-7/8	24.0 - 29.7	6.875 - 7.025	6.672	2.37	7	10
		50.15 - 58.03	168.28 - 171.83	163.91	60.2	48	69
		33.7 - 39.0	6.625 - 6.765	6.453	2.37	7	10
219.1 8-5/8	88.9 3-1/2	35.71 - 59.51	196.22 - 205.66	190.50	73.9	48	-
		24.0 - 40.0	7.725 - 8.097	7.500	2.91	7	-



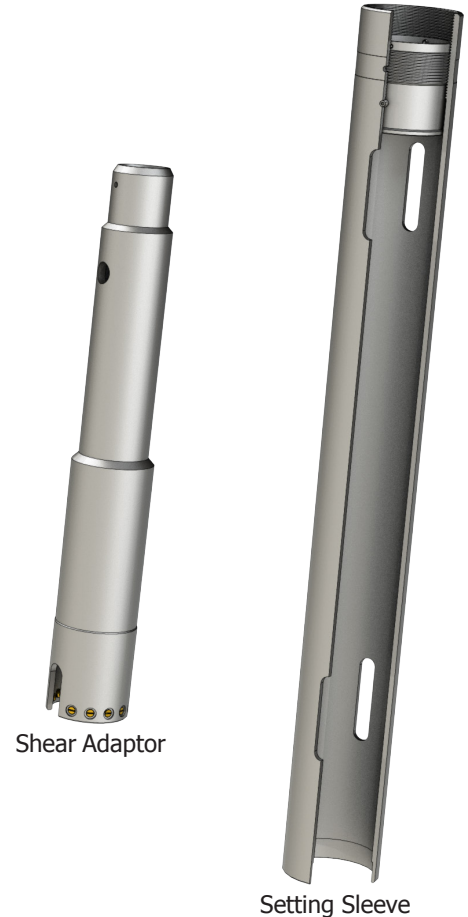
RETRIEVABLE PACKERS

WIRELINE ADAPTOR KIT

The Model "AS1-X" Wireline Adaptor Kit is used in the running and setting of the AS1-X single string wireline production packer. It allows the packer to be run in the wellbore in the set position and be logged into place for sensitive setting depths.

The adaptor kits connects to the standard Baker E-4 setting tools as well as the B110-120 Hydraulic Setting Tool. The adaptor kit attaches to a standard T-2 Stinger and uses brass shear screws that achieve a precise setting force.

Extended length adaptor kits, upon special request, are available to set packers with extended stingers or extended slick line plugs set in stinger.



Shear Adaptor

Setting Sleeve

WLAK		CASING		SLEEVE SIZE	
OD	THREAD	WT (T&C)	SETTING RANGE	OD	OAL
MM	MM	KG/M	MM	MM	MM
IN	IN	LBS/FT	IN	IN	IN
114.3 4-1/2	60.3 2-3/8	14.14 - 20.09	99.57 - 103.89	95.25	106.68
		9.5 - 13.5	3.920 - 4.090	3.750	42.0
		20.09 - 22.47	97.18 - 99.57	92.71	106.68
139.7 5-1/2	60.3 2-3/8	20.83 - 34.23	118.62 - 127.30	114.30	101.60
		14.0 - 23.0	4.670 - 5.012	4.500	40.0
	73.0 2-7/8	20.83 - 34.23	118.62 - 127.30	114.30	101.60
177.8 7	73.0 2-7/8	25.30 - 47.61	154.79 - 166.07	114.30	101.60
		17.0 - 32.0	6.094 - 6.538	4.500	40.0
	88.9 3-1/2	25.30 - 47.61	154.79 - 166.07	139.70	119.38
219.1 8-5/8	88.9 3-1/2	17.0 - 32.0	6.094 - 6.538	5.500	47.0
		35.71 - 59.51	196.22 - 205.66	139.70	119.38
		24.0 - 40.0	7.725 - 8.097	5.500	47.0



SHP HYDRAULIC SET

The SHP Packer is a hydraulic set single-string retrievable packer and may be used in any production application.

Tubing pump pressure is used to set the packer and the setting force is locked into the packer by a body lock ring. A large internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set, and opens during the releasing process to allow pressure equalization. Shear screws are used to control the release of the packer.

The SHP is a simple, robust design that does not require tubing movement to set. It allows the user to run to setting depth and simply apply pressure to set packer. SHP are rated up to 7.5K (52MPa) pressure differential.

To Set the Packer: Attach SHP packer to tubing and run into wellbore. Once packer is at setting depth, pressure up tubing to a predetermined differential setting pressure. Set down weight to confirm set.

To Release the Packer: Pull tubing into tension to overcome the predetermined shear release value. Pull packer up 1 stand and allow elements time to relax. Pull SHP hydraulic packer from the wellbore.

FEATURES:

- Holds up to 7.5K PSI (52MPa) differentials from above or below
- Field adjustable initiation pressure setting
- Field adjustable shear release
- Straight pull release
- Virtually unlimited number of packers can be run in a single trip

OPTIONAL:

- Element options available for various well bore conditions
- TefCote™, NickelCote™, Nylon Protective coatings available
- Carbide Slips available



RETRIEVABLE PACKERS

SHP HYDRAULIC SET



PACKER		CASING		TOOL SIZE		PRESSURE
SIZE	THREAD	WT (T&C)	RANGE	OD	ID	RATING
MM	MM	KG/M	MM	MM	MM	MPA
IN	IN	LBS/FT	IN	IN	IN	KSI
114.3 4-1/2	60.3 2-3/8	14.14 - 20.09	99.57 - 103.89	95.25	49.3	52
		9.5 - 13.5	3.920 - 4.090	3.750	1.94	7.5
		20.09 - 22.47	97.18 - 99.57	92.71	49.3	52
127 5	60.3 2-3/8	13.5 - 15.1	3.826 - 3.920	3.650	1.94	7.5
		17.11 - 22.32	111.96 - 115.82	104.78	49.3	52
		11.5 - 15.0	4.408 - 4.560	4.125	1.94	7.5
139.7 5-1/2	60.3 2-3/8	26.78 - 31.25	105.51 - 108.61	101.60	49.3	52
		18.0 - 21.0	4.154 - 4.276	4.000	1.94	7.5
		20.83 - 29.76	121.36 - 127.30	117.48	49.3	52
	73.0 2-7/8	14.0 - 20.0	4.778 - 5.012	4.625	1.94	7.5
		29.76 - 34.23	118.62 - 121.36	114.30	49.3	52
		20.0 - 23.0	4.670 - 4.778	4.500	1.94	7.5
177.8 7	73.0 2-7/8	20.83 - 29.76	121.36 - 127.30	117.48	60.2	52
		14.0 - 20.0	4.778 - 5.012	4.625	2.37	7.5
		29.76 - 34.23	118.62 - 121.36	114.30	60.2	52
	88.9 3-1/2	20.0 - 23.0	4.670 - 4.778	4.500	2.37	7.5
		25.30 - 38.68	159.41 - 166.07	152.40	63.2	52
		17.0 - 26.0	6.276 - 6.538	6.000	2.49	7.5
244.5 9-5/8	114.3 4-1/2	38.68 - 47.61	154.79 - 159.41	149.23	63.2	52
		26.0 - 32.0	6.094 - 6.276	5.875	2.49	7.5
		25.30 - 38.68	159.41 - 166.07	152.40	76.2	52
	88.9 3-1/2	17.0 - 26.0	6.276 - 6.538	6.000	3.00	7.5
		38.68 - 47.61	154.79 - 159.41	149.23	76.2	52
		26.0 - 32.0	6.094 - 6.276	5.875	3.00	7.5
244.5 9-5/8	114.3 4-1/2	48.07 - 64.74	222.38 - 228.63	215.90	100.3	52
		32.3 - 43.5	8.755 - 9.001	8.500	3.95	7.5
		64.74 - 79.61	216.79 - 222.38	209.55	100.3	52
		43.5 - 53.5	8.535 - 8.755	8.250	3.95	7.5



R-3 SINGLE GRIP

The R-3 single-grip compression set retrievable packers are used in wells where excessive bottom-hole pressure is not expected. It is primarily used as a conventional long stroke production packer.

The R-3 have been used around the world due to its simple design and straight forward running and retrieving procedures.

To Set the Packer: Run packer to setting depth, pick up 3ft / 1m at setting depth. Rotate ¼ right hand rotation at the tool, set down sufficient length to set packer and apply recommended compression.

To Release the Packer: Pull tubing up and packer will release with overpull. Pull packer up 1 stand and allow elements time to relax. Pull packer from the wellbore.

FEATURES:

- Large by-pass area
- Surface controlled combination bypass and equalizing valve
- Rocker type Slips
- Parts interchangeable with other manufacturers
- Three piece packing element system

PACKER		CASING		TOOL SIZE	
SIZE	THREAD	WT (T&C)	RANGE	OD	ID
MM	MM	KG/M	MM	MM	MM
IN	IN	LBS/FT	IN	IN	IN
114.3	60.3	14.14 - 20.09	99.57 - 103.89	95.25	49.3
4-1/2	2-3/8	9.5 - 13.5	3.920 - 4.090	3.750	1.94
139.7	60.3	19.35 - 23.07	125.73 - 128.12	121.44	49.3
		13.0 - 15.5	4.950 - 5.044	4.781	1.94
		19.35 - 25.30	124.26 - 128.12	119.86	49.3
		13.0 - 17.0	4.892 - 5.044	4.719	1.94
		23.07 - 29.76	121.36 - 125.73	117.88	49.3
		15.5 - 20.0	4.778 - 4.950	4.641	1.94
	73.0	29.76 - 34.23	118.62 - 121.36	114.30	49.3
		20.0 - 23.0	4.670 - 4.778	4.500	1.94
		19.35 - 23.07	125.73 - 128.12	121.44	60.2
		13.0 - 15.5	4.950 - 5.044	4.781	2.37
		25.30 - 29.76	121.36 - 124.26	117.88	60.2
		17.0 - 20.0	4.778 - 4.892	4.641	2.37
		29.76 - 34.23	118.62 - 121.36	114.30	60.2
		20.0 - 23.0	4.670 - 4.778	4.500	2.37

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RETRIEVABLE PACKERS

R-3 SINGLE GRIP



PACKER		CASING		TOOL SIZE	
OD	THREAD	WT (T&C)	SETTING RANGE	OD	ID
MM	MM	KG/M	MM	MM	MM
IN	IN	LBS/FT	IN	IN	IN
146.1	60.3	29.02 - 33.48	126.75 - 129.29	121.44	49.3
5-3/4	2-3/8	19.5 - 22.5	4.990 - 5.090	4.781	1.94
152.4	60.3	38.69	130.35	121.44	49.3
6	2-3/8	26.0	5.132	4.781	1.94
168.3	73.0	25.30	155.83	147.62	60.5
		17.0	6.135	5.812	2.38
		29.76	153.64	146.84	60.5
		20.0	6.049	5.781	2.38
6-5/8	2-7/8	35.72	150.39	143.66	60.5
		24.0	5.921	5.656	2.38
		25.30 - 29.76	163.98 - 166.07	159.16	60.5
		17.0 - 20.0	6.456 - 6.538	6.266	2.38
177.8	73.0	29.76 - 38.69	159.41 - 163.98	154.38	60.5
		20.0 - 26.0	6.276 - 6.456	6.078	2.38
		38.69 - 43.16	157.07 - 159.41	151.59	60.5
		26.0 - 29.0	6.184 - 6.276	5.968	2.38
		47.62 - 52.09	152.50 - 154.79	147.62	60.5
		32.0 - 35.0	6.004 - 6.094	5.812	2.38
	88.9	56.55	150.37	146.84	60.5
		38	5.920	5.781	2.38
		25.30 - 29.76	163.98 - 166.07	159.16	73.9
		17.0 - 20.0	6.456 - 6.538	6.266	2.91
7	3-1/2	29.76 - 38.69	159.41 - 163.98	154.38	73.9
		20.0 - 26.0	6.276 - 6.456	6.078	2.91
		38.69 - 43.16	157.07 - 159.41	151.59	73.9
		26.0 - 29.0	6.184 - 6.276	5.968	2.91
		47.62 - 52.09	152.50 - 154.79	147.62	73.9
		32.0 - 35.0	6.004 - 6.094	5.812	2.91
	73.0	59.53 - 69.94	220.50 - 224.41	214.30	60.5
		40.0 - 47.0	8.681 - 8.835	8.437	2.38
	88.9	59.53 - 69.94	220.50 - 224.41	214.30	76.2
		40.0 - 47.0	8.681 - 8.835	8.437	3.00
244.5	9-5/8	69.94 - 79.62	216.79 - 220.50	208.74	76.2
		47.0 - 53.5	8.535 - 8.681	8.218	3.00



R-3 DOUBLE GRIP

The R-3 double-grip compression set retrievable packer can be used in production, stimulation and testing operations.

The R-3 is a very versatile set-down packer, and performs reliably due to its simple design and straight forward running and retrieving procedures.

To Set the Packer: Run packer to setting depth, pick up 3ft / 1m at setting depth. Rotate ¼ right hand rotation at the tool, set down sufficient length to set packer and apply recommended compression.

To Release the Packer: Pull tubing up and packer will release with overpull. Pull packer up 1 stand and allow elements time to relax. Pull packer from the wellbore.

FEATURES:

- Three piece packing element system
- Hydraulic hold down button unit with large internal flow path located below the bypass valve to reduce element swabbing and button wicker dulling
- Surface controlled combination bypass and equalizing valve
- Tubing pressure actuated collet lock to eliminate excessive set down weight requirements
- Rocker type Slips
- Parts interchangeable with other manufacturers

PACKER		CASING		TOOL SIZE	
SIZE	THREAD	WT (T&C)	RANGE	OD	ID
MM	MM	KG/M	MM	MM	MM
IN	IN	LBS/FT	IN	IN	IN
114.3	60.3	14.14 - 20.09	99.57 - 103.89	95.25	49.3
4-1/2	2-3/8	9.5 - 13.5	3.920 - 4.090	3.750	1.94
139.7	60.3	19.35 - 23.07	125.73 - 128.12	121.44	49.3
		13.0 - 15.5	4.950 - 5.044	4.781	1.94
		19.35 - 25.30	124.26 - 128.12	119.86	49.3
		13.0 - 17.0	4.892 - 5.044	4.719	1.94
		23.07 - 29.76	121.36 - 125.73	117.88	49.3
		15.5 - 20.0	4.778 - 4.950	4.641	1.94
	73.0	29.76 - 34.23	118.62 - 121.36	114.30	49.3
		20.0 - 23.0	4.670 - 4.778	4.500	1.94
		19.35 - 23.07	125.73 - 128.12	121.44	60.2
		13.0 - 15.5	4.950 - 5.044	4.781	2.37
		25.30 - 29.76	121.36 - 124.26	117.88	60.2
		17.0 - 20.0	4.778 - 4.892	4.641	2.37
		29.76 - 34.23	118.62 - 121.36	114.30	60.2
		20.0 - 23.0	4.670 - 4.778	4.500	2.37

CONTINUED >



RETRIEVABLE PACKERS

R-3 DOUBLE GRIP



PACKER		CASING		TOOL SIZE	
SIZE	THREAD	WT (T&C)	RANGE	OD	ID
MM	MM	KG/M	MM	MM	MM
IN	IN	LBS/FT	IN	IN	IN
146.1	60.3	29.02 - 33.48	126.75 - 129.29	121.44	49.3
5-3/4	2-3/8	19.5 - 22.5	4.990 - 5.090	4.781	1.94
152.4	60.3	38.69	130.35	121.44	49.3
6	2-3/8	26.0	5.132	4.781	1.94
168.3	73.0	25.30	155.83	147.62	60.5
		17.0	6.135	5.812	2.38
		29.76	153.64	146.84	60.5
		20.0	6.049	5.781	2.38
177.8	73.0	35.72	150.39	143.66	60.5
		24.0	5.921	5.656	2.38
		25.30 - 29.76	163.98 - 166.07	159.16	60.5
		17.0 - 20.0	6.456 - 6.538	6.266	2.38
	73.0	29.76 - 38.69	159.41 - 163.98	154.38	60.5
		20.0 - 26.0	6.276 - 6.456	6.078	2.38
		38.69 - 43.16	157.07 - 159.41	151.59	60.5
		26.0 - 29.0	6.184 - 6.276	5.968	2.38
	88.9	47.62 - 52.09	152.50 - 154.79	147.62	60.5
		32.0 - 35.0	6.004 - 6.094	5.812	2.38
		56.55	150.37	146.84	60.5
		38	5.920	5.656	2.38
244.5	73.0	25.30 - 29.76	163.98 - 166.07	159.16	73.9
		17.0 - 20.0	6.456 - 6.538	6.266	2.91
		29.76 - 38.69	159.41 - 163.98	154.38	73.9
		20.0 - 26.0	6.276 - 6.456	6.078	2.91
	88.9	38.69 - 43.16	157.07 - 159.41	151.59	73.9
		26.0 - 29.0	6.184 - 6.276	5.968	2.91
		47.62 - 52.09	152.50 - 154.79	147.62	73.9
		32.0 - 35.0	6.004 - 6.094	5.812	2.91
9-5/8	73.0	59.53 - 69.94	220.50 - 224.41	214.30	60.5
		40.0 - 47.0	8.681 - 8.835	8.437	2.38
	88.9	59.53 - 69.94	220.50 - 224.41	214.30	76.2
		40.0 - 47.0	8.681 - 8.835	8.437	3.00
9-5/8	88.9	69.94 - 79.62	216.79 - 220.50	208.74	76.2
		47.0 - 53.5	8.535 - 8.681	8.218	3.00



LOK-SET PACKER

The Lok-Set single string mechanical production packer is a retrievable, double-grip compression or tension-set production packer that holds pressure from above or below. The Lok-Set packer features opposed non-transferring dove tail slips that prevent movement of the packer in either direction. These flexible features allow the Lok-Set packer to be run in a variety of applications ranging from Production Packer to Bridge Plug to Service Packer.

To Set the Packer: Run packer to setting depth, slacking off during right hand rotation to initiate setting steps. Set down weight to engage upper slips, pick up tubing to engage lower slips. Set down weight moves the mandrel through lock ring to complete and lock in the packoff.

To Release the Packer: Place packer into slight tension, rotate tubing 5-10 right hand rotations holding tension. Pull packer up to fully stretch out packer, let elements relax. Pull packer from wellbore.

FEATURES:

- Holds up to 8K PSI differentials from above and 6K PSI differential from below
- Right hand tubing rotation controls the setting and releasing
- Tubing can be held in tension, compression or neutral set while the packer remains engaged
- Internal bypass reduces swabbing while running
- Can be run in shallow well conditions and packed off with left hand rotations

OPTIONAL:

- Packing element options are available for hostile environment
- TefCote™, NickelCote™, Nylon
- Protective coatings available



RETRIEVABLE PACKERS

LOK-SET PACKER



PACKER		CASING		TOOL SIZE	
SIZE	THREAD	WT (T&C)	RANGE	OD	ID
MM	MM	KG/M	MM	MM	MM
IN	IN	LBS/FT	IN	IN	IN
114.3	60.3	14.14 - 20.09	99.57 - 103.89	95.78	50.2
4-1/2	2-3/8	9.5 - 13.5	3.920 - 4.090	3.771	1.98
139.7	60.3	19.35 - 23.07	125.73 - 128.12	121.44	50.2
		13.0 - 15.5	4.950 - 5.044	4.781	1.98
		23.07 - 29.76	121.36 - 125.73	117.88	50.2
		15.5 - 20.0	4.778 - 4.950	4.641	1.98
146.1	60.3	29.76 - 34.23	118.62 - 121.36	114.30	50.2
		20.0 - 23.0	4.670 - 4.778	4.500	1.98
		29.02 - 33.48	126.75 - 129.29	121.44	50.2
5-3/4	2-3/8	19.5 - 22.5	4.990 - 5.090	4.781	1.98
152.4	60.3	38.69	130.35	121.44	50.2
6	2-3/8	26.0	5.132	4.781	1.98
177.8	73.0	25.30 - 29.76	163.98 - 166.07	159.16	61.5
		17.0 - 20.0	6.456 - 6.538	6.266	2.42
		34.23 - 38.69	159.41 - 161.70	154.38	61.5
		23.0 - 26.0	6.276 - 6.366	6.078	2.42
		38.69 - 43.16	157.07 - 159.41	151.59	61.5
		26.0 - 29.0	6.184 - 6.276	5.968	2.42
7	2-7/8	47.62 - 52.09	152.50 - 154.79	147.62	61.5
		32.0 - 35.0	6.004 - 6.094	5.812	2.42



AD-1 TENSION

The AD-1 Tension Packer is a compact, economical, retrievable packer that can be used in water flood, oil production or treating applications.

The AD-1 is designed to hold pressure from below. This tension packer is ideally suited for shallow wells where sufficient set down weight is not available.

To Set the Packer: Run packer to setting depth. Rotate $\frac{1}{4}$ right hand rotation at the tool, pull tubing into sufficient amount of tension to fully set slips and packoff element.

To Release the Packer: Set down tubing to release tension. Rotate tubing $\frac{1}{4}$ turn to the left to set packer back into running position and allow packing element time to relax. Slowly pull up 1 stand to ensure packer is released. Pull packer out of the wellbore.

FEATURES:

- Sets securely in any hardness casing, including premium grades
- Compact design making it easy to transport and run
- Bore is larger than tubing drift diameter
- Easy to operate internal J-Slot Control
- Rocker type slips
- One piece packing element system
- Three release methods: Normal release, Shear release, or Safety Joint top sub
- Parts are interchangeable with other manufacturers





RETRIEVABLE PACKERS

AD-1 TENSION



PACKER		CASING		TOOL SIZE	
SIZE	THREAD	WT (T&C)	RANGE	OD	ID
MM	MM	KG/M	MM	MM	MM
IN	IN	LBS/FT	IN	IN	IN
114.3	60.3	14.14 - 20.09	99.57 - 103.89	95.78	49.3
4-1/2	2-3/8	9.5 - 13.5	3.920 - 4.090	3.771	1.94
139.7	60.3	19.35 - 23.07	125.73 - 128.12	121.44	49.3
		13.0 - 15.5	4.950 - 5.044	4.781	1.94
		23.07 - 29.76	121.36 - 125.73	117.88	49.3
		15.5 - 20.0	4.778 - 4.950	4.641	1.94
	73.0	29.76 - 34.23	118.62 - 121.36	114.30	49.3
		20.0 - 23.0	4.670 - 4.778	4.500	1.94
		19.35 - 25.30	124.26 - 128.12	120.65	63.5
		13.0 - 17.0	4.892 - 5.044	4.750	2.50
146.1	60.3	29.02 - 33.48	126.75 - 129.29	121.44	49.3
		19.5 - 22.5	4.990 - 5.090	4.781	1.94
152.4	60.3	38.69	130.35	121.44	49.3
6	2-3/8	26.0	5.132	4.781	1.94
168.3	73.0	25.30 - 29.76	153.64 - 155.83	147.62	60.5
		17.0 - 20.0	6.049 - 6.135	5.812	2.38
		35.72	150.39	143.66	60.5
177.8	73.0	24.0	5.921	5.656	2.38
		25.30 - 29.76	163.98 - 166.07	159.16	60.5
		17.0 - 20.0	6.456 - 6.538	6.266	2.38
		29.76 - 38.69	159.41 - 163.98	154.38	60.5
		20.0 - 26.0	6.276 - 6.456	6.078	2.38
		38.69 - 43.16	157.07 - 159.41	151.59	60.5
		26.0 - 29.0	6.184 - 6.276	5.968	2.38
		47.62 - 52.09	152.50 - 154.79	147.62	60.5
7	2-7/8	32.0 - 35.0	6.004 - 6.094	5.812	2.38
		56.55	150.37	143.66	60.5
		38	5.920	5.656	2.38