

Sure Seal Retrievable Casing Patch

WELLFIRST manufactures a Sure Seal Liner Patch Assembly using standard API casing patch pipe. The patch has bonded steel to rubber one-piece nitrile element. This allows for superior seal integrity and reliability.

The Lower Sure Seal Assembly is designed to hold the upper assemblies compression weight while setting and give a reliable seal upon packing off of both elements.

Features

- **Designed for 178 mm, 25.3 kg/m to 34.2 kg/m casing**
- **Mechanical set and mechanical release**
- **Easily retrieved**
- **Rated for 21,000 kPa differential pressures**
- **High temperature elements up to 370°C are available upon request**
- **Patch assemblies are redressable and reusable**
- **Both have dual ratchet locking pack-off systems**

Sure Seal Liner Patch Assembly					
Diameters		Grade of Material		Ratings	
Inside	125.7 mm	Mandrels	K55	Collapse Pressure	27,860 kPa
Drift	122.6 mm	Setting Sleeve	L80	Internal Yield Burst Pressure	33,160 kPa
Outside	159.0 mm	Setting Cone	4140 HT	Body Yield Strength	121,000 daN
		Molded Rings	4140 HT	Joint Yield Strength	11,200 daN



Model P Casing Patch

The Model P Casing Patch is a permanent steel-on-steel seal internal patch that is ideal for covering or repairing splits, holes, or perforations in casing. The Model P Casing Patch can be run on tubing and hydraulically set, or tubing conveyed. It can also be run and set on wireline. The large bore is good for running tools through and does not hinder fluid flow. The Casing Patch is sealed off at the top and bottom and patch pipe in between. This allows for various lengths easily changed. Long patches or short 3m patches can be run.

The casing should be properly prepared prior to running the Casing Patch. Setting process for the Casing Patch is done by applying fluid pressure down the tubing to a hydraulic tool. The hydraulic tool exerts a pushing force on the top patch end and pull force on the bottom seal end which causes the soft steel patch ends to expand against the casing wall and conform to the I.D. of the casing wall. The tool shears and releases the latch collet. At this point the cased well bore can be tested.

Retrieving the Casing Patch can be done with a small amount of milling and jarring.



Model P Casing Patch			
Description	Properties	Rockwell Hardness	Tensile Strength
Pin Element	1026 Annealed Steel	B-70	101,000 psi
Box Element	1026 Annealed Steel	B-70	71,000 psi
Patch Swage End – Bottom	304 Stainless Steel Annealed	B-80	81,000 psi
Patch Swage End – Top	304 Stainless Steel Annealed	B-80	81,000 psi
Patch 10-Foot Extension	DOM-1026 Steel	B-94	101,000 psi

Model P Casing Patch												
Casing				Product Number	Patch							
O.D.		Weight			Running Diameters				Pressure Rating			
in	mm	lb/ft	kg/m		O.D.		I.D.		Burst		Collapse	
					in	mm	in	mm	psi	Mpa	psi	Mpa
4-1/2	114.3	9.5 - 10.5	14.0 - 15.5	20-075-4510	3.880	98.6	3.375	85.7	4,000	27.6	4,990	33.4
		11.6	17.1	20-074-4511	3.845	97.7						
5-1/2	139.7	13	19.2	20-075-5513	4.862	123.5	4.250	107.9	3,870	26.7	4,840	33.4
		14 - 15.5	20.8 - 23.1	20-075-5515	4.795	121.8						
		17	25.3	20-075-5517	4.700	119.4	4.000	101.6	4,080	28.2	5,130	35.4
		20	29.8	20-075-5520	4.605	117.0						
23	34.2	20-075-5523	4.525	114.9								
7	177.8	17	25.3	20-075-7017	6.360	161.5	5.750	146.0	2,940	20.3	3,680	25.4
		20	29.7	20-075-7020	6.286	159.6						
		23	34.2	20-075-7023	6.165	156.6	5.500	139.7	3,060	21.1	3,830	26.4
		26	38.7	20-075-7026	6.115	155.3						
		29	43.2	20-075-7029	6.033	153.2						
		32	47.6	20-075-7032	5.930	150.6						



The economical mechanical Sure Seal Thermal Liner Hanger is designed primarily for hanging sand screen or slotted liner in shallow to medium depth, steam injection wells. It is normally supplied with the 370°C thermal element as standard. The Sure Seal Thermal Liner Hanger may be run and retrieved using the WELLFIRST One-Trip J System.

Features

- One-piece mandrel with ratchet under cone
- Open J
- Large clearance for sand and debris
- High temp thermal pack-off element
- Uses Logan Completion Systems' One-Trip J running and retrieving system
- Can be run with inner circulating string
- Extremely economical to service
- Retrievable and economically reusable

Sure Seal Thermal Liner Hanger					
Diameters		Grade of Material		Ratings	
Inside	125.7 mm	Mandrels	K55	Collapse Pressure	27,860 kPa
Drift	122.6 mm	Setting Sleeve	L80	Internal Yield Burst Pressure	33,160 kPa
Outside	159.0 mm	Setting Cone	4140 HT	Body Yield Strength	121,000 daN
		Molded Rings	4140 HT	Joint Yield Strength	11,200 daN

One-Trip Liner Running Assembly Tool

Liner Hangers & Accessories



The One-Trip Liner Running Assembly Tool is a great time-saving running tool system that saves the oil company multiple trip time at an economical tool price.

The One-Trip Liner Running Assembly allows the liner/screen assembly to be run and set into place with the production string, then released off of the liner and land the tubing string to desired depth. The liners can be circulated into place with the inner string running tool (a). The liners may also be pulled out of the hole by simply forward circulating through the running tool (a), landing back into the One-Trip Running Assembly (b), and then pulling out of the hole.

The Steel Circulating Valve is a steady all steel float valve system that allows circulation through the inner string to assist in landing liners on depth. The all steel system is great for thermal application or going through hard debris fill in the hole with a cutting spade on the bottom of the tool.



The all-welded wire wrapped base pipe screen is leading the industry in superior construction, durability, and quality. With a proven record, it is a simple choice for reliable sand free production whether it's from your vertical or horizontal oil well. The Wedge Wire Sand Screen allows the user to maximize the open area to flow while maintaining a strict gauge as low as 0.003" (75 micron). There are no solder strips, weld beads, or lugs to block the fluid flow. The large inlet area allows higher production rates with lower entrance velocities and minimal pressure drop in comparison to other sand control devices.

Gauge spacing of the all-welded screen is permanent. Your specified gauge is maintained down- hole under the roughest handling.

High quality 304L stainless steel is the standard material used in the manufacture of sand control screens. Special alloys are available for special conditions.

Features

- **Proven reliability**
- **Unique to each well**
- **Permanent gauge opening**
- **Largest inflow area possible**
- **Outstanding strength and durability**

The Sure Seal Thermal Liner Hanger Patch is a mid-range hanger system capable of carrying 15,000 kg liner weight. It is economical and fast to operate with maximum fluid by-pass. The patch system uses standard casing or tubing for spacer pipe between ends and can be run with or without top hold-downs and slips. The SS Thermal Liner Hanger can be used in conjunction with the Thermal Sure Seal Thermal Adapter as an economical isolation tool for a casing patch.

Features

- **One-piece mandrel with ratchet under cone**
- **Open J**
- **Large clearance for sand and debris**
- **High temp thermal pack-off element**
- **Can be run with inner circulating string**
- **Extremely economical to service**
- **Retrievable and economically reusable**
- **High temperature rating of 370°C**

Sure Seal Thermal Adaptor

The SS Thermal Adapter is designed as an economical liner pack-off system that can be run as a top pack-off or bottom pack-off system. It can be hydraulically or mechanically set. A dual ratchet system is used to ensure reliable pack-off.

Features

- **Can be run as an upper or lower seal adapter**
- **Mechanical or hydraulic set and mechanical release**
- **Easily retrieved**
- **Rated for 21,000 kPa differential pressures**
- **High temperature elements up to 370°C available upon request**
- **Patch assemblies are redressable and reusable**
- **Dual ratchet locking pack-off systems**
- **Extremely economical**
- **Set using the HD Hydraulic Setting Tool with the Casing Patch Hydraulic Shear System**



Sure Seal Thermal Liner Hanger Patch

Liner Hangers & Accessories

Sure Seal Thermal Liner Hanger Patch			
Grade of Material		Ratings	
Mandrels	K55	Collapse Pressure	21,510 kPa
Setting Sleeve	L80	Internal Yield Burst Pressure	29,440 kPa
Setting Cone	4140 HT	Body Yield Strength	98,750 daN
Ratchet	4140 HT	Joint Yield Strength	84,700 daN
		Max Cone Load	15,000 daN

Sure Seal Thermal Liner Hanger Patch				
Patch	Casing		Specifications	
Size	Size	Weight Range	Body O.D.	Max. I.D.
in	in	lb/ft	in	in
mm	mm	kg/m	mm	mm
2-7/8	4-1/2	9.5 – 13.5	2.50	2.438
73.0	114.3	14.1 – 20.1	63.50	62.0
3-1/2	5-1/2	13.0 – 15.5	3.50	2.991
		19.3 – 23.1		
88.9	139.7	15.5 – 20.0	88.9	76.0
		23.1 – 29.8		
5-1/2	7	17 – 20	6.27	5.012
		25.3 – 29.8	159.3	
	177.8	20 – 26	6.08	
		29.8 – 38.7	154.4	
139.7	8-5/8	20 – 26	7.78	127.3
			197.6	
	219.1	29.8 – 41.6	7.53	
			191.3	
7	9-5/8	29.3 – 36	8.59	6.441
		43.6 – 53.5	212.2	
177.8	244.5	40 – 47	8.44	164.0
		59.5 – 69.9	214.1	
8-5/8	10-3/4	32.75 – 51	9.63	8.016
219.1	273.1	48.7 – 75.8	244.6	203.6

The Gas Vent Pumping Packer is a simple, inexpensive method to isolate casing leaks or non-productive perforations in a rod pumping production installation. The interval between cups is adjustable to any length.

Features

- Inexpensive method to isolate casing leaks
- Interval between cups adjustable to any length
- Capable of venting gas to surface past insulated zone

Applications

Isolate casing leaks or nonproductive perforations in a rod pumping production installation. The Gas Vent Packer will allow the capability for venting gas to the surface past the isolated zone preventing gas locking of the pump.

Gas Vent Pumping Packer									
Size		O.D.		I.D.		Packer			
						Maximum O.D.*		Minimum O.D.*	
in	mm	in	mm	in	mm	in	mm	in	mm
4-1/2	114.3	2.375	60.33	3.00	76.20	3.750	95.25	2.687	68.25
5-1/2	139.70	2.375	60.33	3.00	76.20	4.625	117.48	2.750	69.85
5-1/2	139.70	2.875	73.03	4.00	101.60	4.625	117.48	3.188	80.98
7	177.80	2.375	60.33	4.00	101.60	5.000	127.00	2.750	69.85
7	177.80	2.875	73.03	4.50	114.30	5.000	127.00	3.188	80.98

