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								
Diam	eters	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			
	Mol Rii		4140 HT	Joint Yield Strength	11,200 daN			







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						Pat	ch			
O.D. Waited :			F	unning D	ng Diameters			Pressure Rating				
U	O.D. Weight		Product O.D.		I.D.		Burst		Collapse			
in	mm	lb/ft	kg/m	Number	in	mm	in	mm	psi	Мра	psi	Мра
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
4-1/2	114.3	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						
5-1/2		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						
		17	25.3	20-075-7017	6.360	161.5	F 7F0	146.0	0 2,940	20.3	3,680	25.4
		20	29.7	20-075-7020	6.286	159.6	5.750					
7	7 477.0	23	34.2	20-075-7023	6.165	156.6						
7 177.8	26	38.7	20-075-7026	6.115	155.3	5.500	00 139.7	39.7 3,060	21.1	3,830	26.4	
		29	43.2	20-075-7029	6.033	153.2	j					
		32	47.6	20-075-7032	5.930	150.6	5.250	133.4	3,200	22.1	3,990	27.5







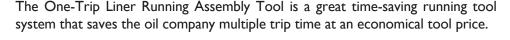
The economical mechanical Sure Seal Thermal Liner Hanger is designed primarily for hanging sand screen or slotted liner in shallow to medium depth, steam injection wells. It is normally sup- plied with the 370°C thermal element as standard. The Sure Seal Thermal Liner Hanger may be run and retrieved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





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.

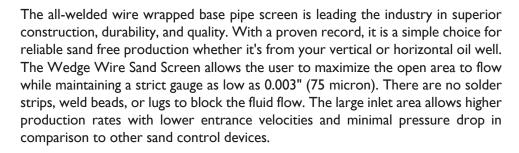
The Steel Circulating Valve is a steady all steel float valve system that allows circulation through the inner string to assist in landing liners on depth. The all steel system is great for thermal application or going through hard debris fill in the hole with a cutting spade on the bottom of the tool.











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 I
- 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							
Grade of I	Material	Ratings	}				
Mandrels	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	Specifica	ations			
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	2.50	2.991			
3-1/2	5-1/2	19.3 – 23.1	Specific Body O.D. in mm 2.50 63.50 3.50 88.9 6.27 159.3 6.08 154.4 7.78 197.6 7.53 191.3 8.59 212.2 8.44 214.1 9.63	2.991			
88.9	139.7	15.5 – 20.0	99.0	76.0			
88.9	139.7	23.1 – 29.8	88.9	76.0			
	7	17 – 20	6.27				
5-1/2	7	25.3 – 29.8	159.3	5.012			
5-1/2	477.0	20 – 26	6.08	5.012			
	177.8	29.8 - 38.7	154.4				
	8-5/8	20 – 26	7.78				
139.7	0-5/6	20 – 26	197.6	127.3			
139.7	040.4	29.8 – 41.6	7.53	127.3			
	219.1	29.8 – 41.0	191.3				
7	9-5/8	29.3 – 36	8.59	6.441			
,	9-3/6	43.6 - 53.5	212.2	0.441			
177.0	244.5	40 – 47	8.44	164.0			
177.8	244.5	59.5 - 69.9	214.1	104.0			
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			



Gas Vent Pumping Packer

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 insolated 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										
C	ize	0	D		I.D.		Packer			
31	ize	ze O.D.		1.0.		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	



