

LEAD SEAL CASING PATCHES

Overview

Lead Seal Casing Patches repair properly prepared pipe without restricting the bore of the casing or tubing. Lead seal patches are particularly suited for use in wells that contain fluids or gases harmful to rubber or synthetic packers and are as strong as the string being repaired. Patches are available in popular casing sizes ranging from 2-3/8 to 13-3/8 inches. H₂S service is available upon request.

Construction

Lead Seal Casing Patches are composed of eleven parts. A guide and bowl make up the O.D. components. A grapple, grapple carrier, control ring, control ring set screws, end seal rings, lead seals, and a center seal ring make up the remainder of the patch.

Each part of the patch is manufactured from material that is specifically suitable for each part. Load bearing components are high

strength, heat-treated alloy steel to maintain string integrity. The seal assembly is manufactured from pure, unalloyed, fully annealed lead.

A box connection on the upper end of the casing patch will be cut according to customer specifications.

Assembly

The casing patch is made up to the bottom of the new casing string. Use tongs only on the upper end of the bowl near the top connection.

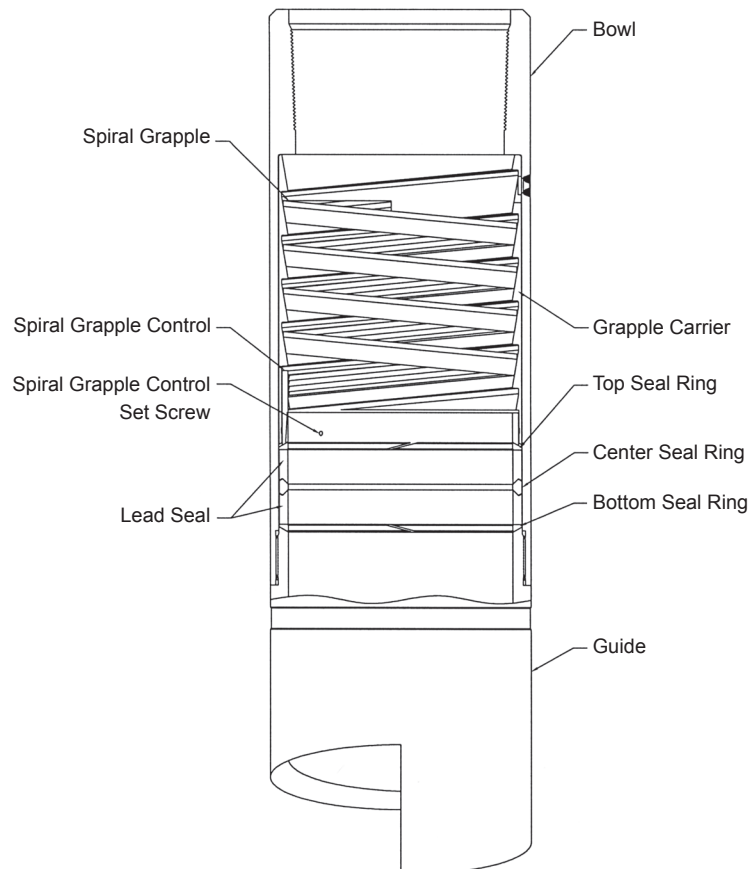
Operation

Properly cut and remove the damaged portion of casing from the hole. Prepare the top of the downhole casing for engagement and pack-off. Roll the casing if necessary to assure proper diameter and roundness.

Lower the tool into the hole until the top of the fish is reached. Continue lowering the string while slowly rotating the casing patch to the right until the fish has passed through the guide and has bottomed out in the grapple carrier. Stop rotation and slowly pick up the string to remove any weight or torque. (Any backlash from residual weight or torque could cause the patch to disengage.) The lead seal is set into position by raising the string. The grapple, grapple carrier, and control ring remain stationary. Compression between the grapple carrier and guide causes the lead seals to flow around the casing to form a rigid, leak-proof connection.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection



Lead Seal Casing Patches

LEAD SEAL CASING PATCHES

O.D. CASING	2-3/8	2-7/8	3-1/2	4	4-1/2	5	5-1/2
O.D. PATCH	3-7/16	4	4-3/4	5-1/4	5-3/4	6-1/4	6-13/16
COMPLETE ASSEMBLY	504-343	504-400	504-475	504-525	504-575	504-625	504-681
Bowen No.	17258	16140	26525	22400	13270	13280	12315
BOWL	AA1000	AA1001	AA10015	AA1002	AA1003	AA1004	AA1005
Bowen No.	17259	16141	26526	22401	13271	13281	12316
GRAPPLE CARRIER	AA2000	AA2001	AA20015	AA2002	AA2003	AA2004	AA2005
Bowen No.	17260	16142	26527	22402	13272	13282	12317
SPIRAL GRAPPLE	AA3000	AA3001	AA30015	AA3002	AA3003	AA3004	AA3005
Bowen No.	17261	16143	26528	22403	13273	13283	12318
SPIRAL GRAPPLE CONTROL	AA4000	AA4001	AA40015	AA4002	AA4003	AA4004	AA4005
Bowen No.	17262	16144	26529	22404	13274	13284	12319
GUIDE	AA5000	AA5001	AA50015	AA5002	AA5003	AA5004	AA5005
Bowen No.	17263	16145	26530	22405	13275	13285	12320
LEAD SEAL	AA6000	AA6001	AA60015	AA6002	AA6003	AA6004	AA6005
Bowen No.	17264	16146	26531	22406	13276	13286	12324
No. Req'd	2	2	2	2	2	2	2
END SEAL RING	AA7000	AA7001	AA70015	AA7002	AA7003	AA7004	AA7005
Bowen No.	17265	16147	26532	22407	13277	13287	12322
No. Req'd	2	2	2	2	2	2	2
CENTER SEAL RING	AA8000	AA8001	AA80015	AA8002	AA8003	AA8004	AA8005
Bowen No.	17266	16148	26533	22408	13278	13288	12323
CONTROL SET SCREW	AA9000	AA9000	AA9000	AA9000	AA9000	AA9000	AA9000
Bowen No.	12329	12329	12329	12329	12329	12329	12329
No. Req'd	2	2	2	2	2	2	2

O.D. CASING	5-3/4	6	6-5/8	7	7-5/8	8-5/8	9-5/8
O.D. PATCH	7-1/16	7-5/16	7-15/16	8-3/8	9	10-1/16	11-1/8
COMPLETE ASSEMBLY	504-706	504-731	504-793	504-825	504-900	504-1006	504-1113
Bowen No.	22410	13290	13300	12500	13070	13310	12475
BOWL	AA1006	AA1007	AA1008	AA1009	AA1010	AA1011	AA1012
Bowen No.	22411	13291	13301	12501	13071	13311	12476
GRAPPLE CARRIER	AA2006	AA2007	AA2008	AA2009	AA2010	AA2011	AA2012
Bowen No.	22412	13292	13302	12502	13072	13312	12477
SPIRAL GRAPPLE	AA3006	AA3007	AA3008	AA3009	AA3010	AA3011	AA3012
Bowen No.	22413	13293	13303	12503	13073	13313	12478
SPIRAL GRAPPLE CONTROL	AA4006	AA4007	AA4008	AA4009	AA4010	AA4011	AA4012
Bowen No.	22414	13294	13304	12504	13074	13314	12479
GUIDE	AA5006	AA5007	AA5008	AA5009	AA5010	AA5011	AA5012
Bowen No.	22415	13295	13305	12505	13075	13315	12480
LEAD SEAL	AA6006	AA6007	AA6008	AA6009	AA6010	AA6011	AA6012
Bowen No.	22416	13296	13306	12506	13076	13316	12481
No. Req'd	2	2	2	2	2	2	2
END SEAL RING	AA7006	AA7007	AA7008	AA7009	AA7010	AA7011	AA7012
Bowen No.	22417	13297	13307	12507	13077	13317	12482
No. Req'd	2	2	2	2	2	2	2
CENTER SEAL RING	AA8006	AA8007	AA8008	AA8009	AA8010	AA8011	AA8012
Bowen No.	22418	13298	13308	12508	13078	13318	12483
CONTROL SET SCREW	AA9000	AA9000	AA9000	AA9000	AA9000	AA9001	P12003
Bowen No.	12329	12329	12329	12329	12329	12484	12484
No. Req'd	2	2	2	2	2	2	2

Lead Seal Casing Patches

LEAD SEAL CASING PATCHES

O.D. CASING		10-3/4	11-3/4	13-3/8
O.D. PATCH		12-5/16	13-1/4	15-1/2
COMPLETE ASSEMBLY		504-1231	504-1325	504-1550
	Bowen No.	13320	20855	18445
BOWL		AA1013	AA1014	AA1015
	Bowen No.	13321	20856	18446
GRAPPLE CARRIER		AA2013	AA2014	AA2015
	Bowen No.	13322	20857	18447
SPIRAL GRAPPLE		AA3013	AA3014	AA3015
	Bowen No.	13323	20858	18448
SPIRAL GRAPPLE CONTROL		AA4013	AA4014	AA4015
	Bowen No.	13324	20859	18449
GUIDE		AA5013	AA5014	AA5015
	Bowen No.	13325	20860	18450
LEAD SEAL		AA6013	AA6014	AA6015
	Bowen No.	13326	20861	18451
	No. Req'd	2	2	2
END SEAL RING		AA7013	AA7014	AA7015
	Bowen No.	13327	20862	18452
	No. Req'd	2	2	2
CENTER SEAL RING		AA8013	AA8014	AA8015
	Bowen No.	13328	20863	18453
CONTROL SET SCREW		AA9001	AA9001	AA9001
	Bowen No.	12484	12484	12484
	No. Req'd	2	2	2

Special Notes:

(1) H₂S service are available upon request.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of top connection