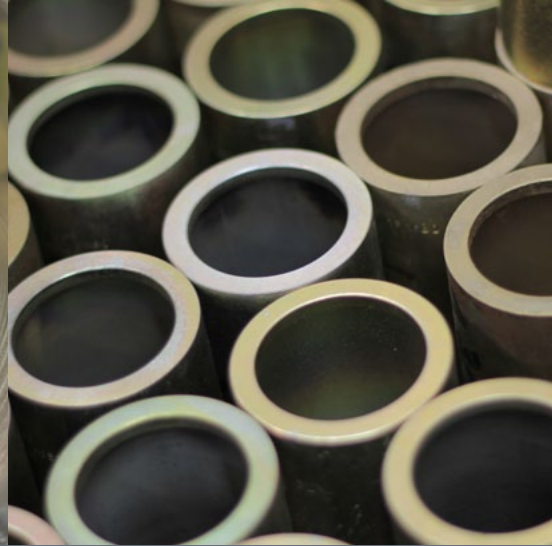




Northern States
— Fishing Tools



Trust Us To Give You The Best

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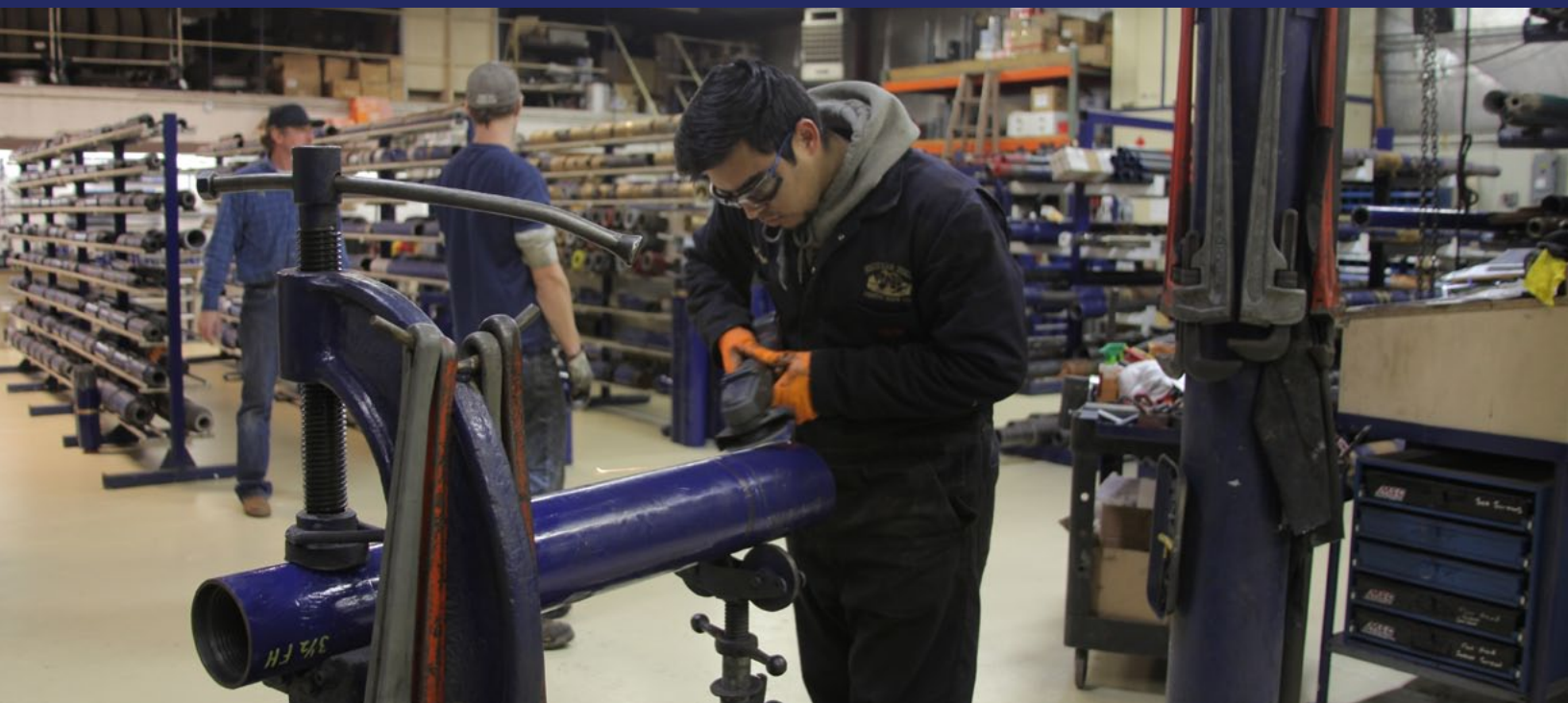


Our Company

Northern States Fishing Tools was started in 1978 by three men, Alfred Brown, Lloyd Brown and Irv Nofsker out of a small shop in Watford City, ND. They eventually moved to a larger shop, which has been their location since 1985. Gary Brown and Billy Carlson continue the Northern States' tradition today.

For 38 years, Northern States has serviced the Williston Basin with fishing and rental tools. In 2012 we expanded our downhole tool selection to include packers, plugs and thru tubing equipment.

We have the expert knowledge to give you satisfying results based on you specific needs. Trust us to give you the best tools and services, all at competitive prices.



Northern States
— Fishing Tools

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Mechanical Set Packers



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ASI-X PACKER

The **ASI-X Single String Double-Grip Production Packer** is the most versatile of the mechanically set retrievable packers and may be used in any production application. This packer is suited for treating, testing, or injection applications, in pumping or flowing wells, either deep or shallow. This packer can be left in tension or compression depending on well conditions and the required application.

A large internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set and opens prior to releasing the upper slips when retrieving to allow pressure equalization. The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, 1/4 turn right-hand release.

The standard ASI-X Packer is designed for differential pressures up to 7,000 PSI

(unless noted otherwise). This packer is also available in an HT version which is designed for differential pressures up to 10,000 PSI (unless noted otherwise). The HT version allows this packer to be utilized in completions where high pressure treating operations are performed and it is desirable to leave the tool in the well for production.

Special Features

- By-pass below upper slips to wash debris when valve is opened
- By-pass is opened before upper slips are released
- Can be set with tension for shallow well applications
- Can be left in tension, compression or neutral
- 1/4 turn right-hand set, 1/4 turn right-hand release
- Additional J-Slot arrangements available



Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)						Std	HT
2-7/8	6.4 - 6.5	2.375 - 2.441	2.250	2.263 ¹	0.63	1.050 EUE	60325-3E*	-
	8.6	2.259	2.125	2.152 ¹	0.63	1.050 EUE	60324-3E*	-
3-1/2	7.5 - 7.7	3.068 - 3.250	2.938	-	1.25	1.900 NUE	60336*	-
	7.7 - 10.2	2.922 - 3.068	2.781	-	1.25	1.900 NUE	60335*	-
	12.95	2.750	2.562	-	1.00	1.315 EUE / 1.660 EUE	60337*	-
4	9.5 - 11.0	3.476 - 3.548	3.250	3.312 ¹	1.50	1.900 EUE	60340*	-
	10.46 - 12.95	3.340 - 3.476	3.187	-	1.50	1.900 EUE	60341*	-
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	1.94	2-3/8 EUE	60345 ²	60345HT ²
	13.5 - 15.1	3.826 - 3.920	3.650	-	1.94	2-3/8 EUE	60344 ²	60344HT ²
	15.1	3.826	3.641	-	1.94	2-3/8 EUE	60346	-
	15.1 - 16.6	3.754 - 3.826	3.594	-	1.50	1.900 EUE	60343	-
	18.8	3.640	3.437	-	1.50	1.900 EUE	60342	-

¹Maximum OD is across retracted drag blocks.

²Drilled for wireline.

* Designed for differential pressures up to 10,000 PSI.

Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

NOTE: All pricing includes standard Nitrile trim. Other sizes, connections, and rubber options available upon request.

ASI-X Packer Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)						Std	HT
5	11.5 - 15.0	4.408 - 4.560	4.125	4.220 ¹	1.94	2-3/8 EUE	60350	60350HT
	15.0 - 18.0	4.276 - 4.408	4.063	-	1.94	2-3/8 EUE	60349	-
	18.0 - 20.8	4.156 - 4.276	4.000	4.010 ¹	1.94	2-3/8 EUE	60352	60352HT
	21.4	4.126	3.938	-	1.94	2-3/8 EUE	60353	60353HT
5-1/2	13.0 - 14.0	5.012 - 5.044	4.813	-	2.38	2-7/8 EUE	60358	60358HT
	14.0 - 20.0	4.778 - 5.012	4.625	-	2.00	2-3/8 EUE	60355 ²	60355HT ²
				-	2.38	2-7/8 EUE	60356 ²	60356HT ²
	20.0 - 23.0	4.670 - 4.778	4.500	-	2.00	2-3/8 EUE	60357 ²	60357HT ²
				-	2.38	2-7/8 EUE	60359 ²	60359HT ²
	23.0 - 26.0	4.548 - 4.670	4.375	-	1.94	2-3/8 EUE	60354	60354HT
-				2.38	2-7/8 EUE	60351	60351HT	
5-3/4	15.0 - 16.1	5.076 - 5.115	5.000	-	2.00	2-3/8 EUE	60357X	60357XHT
				-	2.38	2-7/8 EUE	60358X	60358XHT
	17.6 - 19.4	4.958 - 5.021	4.875	-	2.00	2-3/8 EUE	60357Y	60357YHT
				-	2.38	2-7/8 EUE	60358Y	60358YHT
	21.5 - 24.0	4.784 - 4.879	4.720	-	2.00	2-3/8 EUE	60357Z	60357ZHT
				-	2.38	2-7/8 EUE	60358Z	60358ZHT
6	10.0	5.672	5.375	-	2.50	2-7/8 EUE	60361	-
	12.0 - 20.0	5.352 - 5.620	5.188	-	2.38	2-7/8 EUE	60360	60360HT
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	-	2.50	2-7/8 EUE	60367	60367HT
	20.0 - 24.0	5.921 - 6.049	5.750	-	3.00	3-1/2 EUE	60368	60368HT
	24.0 - 32.0	5.675 - 5.921	5.500	-	2.50	2-7/8 EUE	60365	60365HT
				-	3.00	3-1/2 EUE	60369	60369HT
	32.0 - 34.5	5.575 - 5.675	5.312	-	2.50	2-7/8 EUE	60366	60366HT

¹Maximum OD is across retracted drag blocks.

²Drilled for wireline.

* Designed for differential pressures up to 10,000 PSI.

Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

NOTE: All pricing includes standard Nitrile trim. Other sizes, connections, and rubber options available upon request.

ASI-X Packer Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)						Std	HT
7	17.0 - 20.0	6.456 - 6.538	6.250	6.281 ¹	2.50	2-7/8 EUE	60372-625	-
				-	3.00	3-1/2 EUE	60374-625	-
	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	2-7/8 EUE	60372 ²	60372HT ²
				6.125 ¹	3.00	3-1/2 EUE	60374	60374HT
	26.0 - 32.0	6.094 - 6.276	5.875	-	2.50	2-7/8 EUE	60370 ²	60370HT ²
				5.936 ¹	3.00	3-1/2 EUE	60373	60373HT
29.0 - 35.0	6.004 - 6.184	5.812	-	2.50	2-7/8 EUE	60371 ²	60371HT ²	
35.0	6.004	5.812	-	3.00	3-1/2 EUE	60373-35	-	
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	-	2.50	2-7/8 EUE	60375	60375HT
				-	3.00	3-1/2 EUE	60378	60378HT
	33.7 - 39.0	6.625 - 6.765	6.453	-	2.50	2-7/8 EUE	60376	60376HT
				-	3.00	3-1/2 EUE	60377	60377HT
8-5/8	20.0 - 24.0	8.097 - 8.191	7.750	-	2.50	2-7/8 EUE	60384	-
	20.0 - 28.0	8.017 - 8.191	7.750	7.827 ¹	4.00	4-1/2 EUE	60381	60381HT
	24.0 - 40.0	7.725 - 8.097	7.500	-	2.50	2-7/8 EUE	60385	60385HT
				-	3.00	3-1/2 EUE	60387	60387HT
	32.0 - 40.0	7.725 - 7.921	7.500	-	4.00	4-1/2 EUE	60382	60382HT
44.0 - 49.0	7.511 - 7.625	7.312	-	2.50	2-7/8 EUE	60386	60386HT	
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	-	4.00	4-1/2 EUE	60396S**	60396HT [△]
	43.5 - 53.5	8.535 - 8.755	8.250	-	4.00	4-1/2 EUE	60395S**	60395HT [△]
10-3/4	32.75 - 51.0	9.850 - 10.192	9.625	-	4.00	4-1/2 EUE	60301**	-
	51.0 - 65.7	9.560 - 9.850	9.312	-	4.00	4-1/2 EUE	60310**	-
11-3/4	42.0 - 65.0	10.682 - 11.084	10.438	10.502 ¹	4.00	4-1/2 EUE	60311**	-
	66.7 - 80.5	10.406 - 10.656	10.200	-	4.00	4-1/2 EUE	60311Y	-
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	-	4.00	4-1/2 EUE	60313**	-
16	65.0 - 109.0	14.688 - 15.250	14.438	-	5.00	7" LTC	60316***	-
18	87.5 - 117.5	17.439 - 17.755	17.000	-	5.00	7" LTC	60318	-
20	133.0 - 169.0	18.376 - 18.730	18.000	-	5.00	7" LTC	60320	-

¹Maximum OD is across retracted drag blocks.

²Drilled for wireline.

** Designed for differential pressures up to 6,000 PSI.

*** Designed for differential pressures up to 5,000 PSI.

△ Designed for differential pressures up to 8,000 PSI.

Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

NOTE: All pricing includes standard Nitrile trim. Other sizes, connections, and rubber options available upon request.

WIRELINER ADAPTER KIT - FOR VSI-X PACKER

The **Wireline Adapter Kit (WLAK)** for VSI-X Packers and VSI-X HT Packers is used with a stinger to set VSI-X Packers and VSI-X HT Packers on electric wireline or with a hydraulic setting assembly on tubing. The WLAK is designed to be used on a Baker E-4 wireline powder charge, hydraulic setting assembly or any setting assembly with the same configuration.

to convert the packer to a temporary Bridge Plug. Use of a profile blanking plug also reduces debris build-up and eliminates the need to run Profile Nipples or Pump-Out Plugs below the packer.

The WLAK automatically disconnects from the packer during packer setting to be easily retrieved and prepared to run again.

When used with a Profile Stinger, the plug-in-place design allows the running of a profile blanking plug to be run in place

Product Specifications

Casing Size (inches)	Description	Part Number
2-7/8	For 2-7/8" VSI-XW Packer	97125
3-1/2	For #5 Hydraulic Setting Tool	97130
	For 3-1/2" VSI-XW Packer (12.95#)	97137
4	For 4" VSI-XW Packer	97140
4-1/2	For 4-1/2" VSI-XW Packer	97145
	For 4-1/2" VSI-XW Packer (13.5-15.1#) Short Version	97144-SHORT
	For 4-1/2" VSI-XW Packer (15.1#)	97144
5-1/2	For 5-1/2" X 2-3/8" VSI-XW Packer*	97155*
	For 5-1/2" X 2-7/8" VSI-XW Packer (23.0 - 26.0#)	97151
	For 5-1/2" X 2-7/8" VSI-XW Packer (23.0 - 26.0#) *	97151-1*
	For 5-1/2", 6-5/8", 7", 7-5/8" X 2-7/8" VSI-XW Packer	97156
	For: 5-1/2", 7", 7-5/8" X 2-7/8" VSI-XW Packer Short Version*	97156-SHORT*
7	For 7" X 3-1/2" VSI-XW Packer	97174
9-5/8	For 8-5/8" & 9-5/8" X 2-7/8" VSI-XW Packer	97196-BAC
	For 9-5/8" X 3-1/2" VSI-XW Packer	97195
	For 8-5/8" & 9-5/8" X 4-1/2" VSI-XW Packer	97196
10-3/4	For 8-5/8" Through 10-3/4" X 4-1/2" VSI-XW Packer	97196

* Compatible with Baker Style 20 Setting Equipment.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Mechanical Set Packers

VSI-X PACKER

The **VSI-X Single String Double-Grip Production Packer** is one of the most versatile packers on the market. This packer is a modification of the ASI-X Packer with the advantage of being able to set on electric line or hydraulically.

An On-Off Tool Stinger with a Wireline Plug installed can be attached to the top of this packer. This packer can then be lubricated in the hole and set under pressure. Once set, casing pressure can be bled off, and the tubing with an On-Off Tool Overshot can be run and latched onto the packer. The Wireline Plug can then be removed.

This packer easily converts to a mechanically set ASI-X Packer – just remove the shear screws and install drag

blocks and drag block springs. The ASI-X Packer sets with 1/4 right-hand rotation and releases with 1/4 right-hand rotation. The ASI-X Packer can be left in tension, compression or neutral.

NOTE: Stinger and setting equipment must be purchased separately.

Special Features

- Wireline or tubing set
- Sequentially released upper slip system
- By-pass valve opens before upper slips are released
- Available in shear release
- Easily converts to ASI-X version - 1/4 turn to set, 1/4 turn to release



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)					Std	HT
2-7/8	6.4 - 6.5	2.375 - 2.441	2.250	0.63	1.050 EUE	60125-3E*	-
3-1/2	7.5 - 7.7	3.068 - 3.250	2.938	1.25	1.900 NUE	60136*	-
	7.7 - 10.2	2.922 - 3.068	2.781	1.25	1.900 NUE	60135*	-
	12.95	2.750	2.562	1.00	1.315 EUE / 1.660 EUE	60137-3E*	-
4	9.5 - 11.0	3.476 - 3.548	3.250	1.50	1.900 EUE	60140*	-
	10.46 - 12.95	3.340 - 3.476	3.187	1.50	1.900 EUE	60141*	-
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	60145	60145HT
	13.5 - 15.1	3.826 - 3.920	3.650	1.94	2-3/8 EUE	60144	60144HT
	15.1	3.826	3.641	1.94	2-3/8 EUE	60146	60146HT
	15.1 - 16.6	3.754 - 3.826	3.594	1.50	1.900 EUE	60143	60143HT
	18.8	3.640	3.437	1.50	1.900 EUE	60142	60142HT
5	11.5 - 15.0	4.408 - 4.560	4.125	1.94	2-3/8 EUE	60150	60150HT
	18.0 - 20.8	4.156 - 4.276	4.000	1.94	2-3/8 EUE	60152	60152HT
	21.4	4.126	3.938	1.94	2-3/8 EUE	60153	60153HT

* Designed for differential pressures up to 10,000 PSI.

Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

NOTE: All pricing includes standard Nitrile trim. Other sizes, connections, and rubber options available upon request.

VSI-X Packer Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)					Std	HT
5-1/2	13.0 - 14.0	5.012 - 5.044	4.813	2.38	2-7/8 EUE	60158	60158HT
	14.0 - 20.0	4.778 - 5.012	4.625	2.00	2-3/8 EUE	60155	60155HT
				2.38	2-7/8 EUE	60156	60156HT
	20.0 - 23.0	4.670 - 4.778	4.500	2.00	2-3/8 EUE	60157	60157HT
				2.38	2-7/8 EUE	60159	60159HT
23.0 - 26.0	4.548 - 4.670	4.390	1.94	2-3/8 EUE	60154	60154HT	
			4.406	2.38	2-7/8 EUE	60151	60151HT
6	12.0 - 20.0	5.352 - 5.620	5.188	2.38	2-7/8 EUE	60160	60160HT
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	2.50	2-7/8 EUE	60167	60167HT
	20.0 - 24.0	5.921 - 6.049	5.750	3.00	3-1/2 EUE	60168	60168HT
	24.0 - 32.0	5.675 - 5.921	5.500	2.50	2-7/8 EUE	60165	60165HT
				3.00	3-1/2 EUE	60169	60169HT
32.0 - 34.5	5.575 - 5.675	5.312	2.50	2-7/8 EUE	60166	60166HT	
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	60172	60172HT
				3.00	3-1/2 EUE	60174	60174HT
	26.0 - 32.0	6.094 - 6.276	5.875	2.50	2-7/8 EUE	60170	60170HT
				3.00	3-1/2 EUE	60173	60173HT
29.0 - 35.0	6.004 - 6.184	5.812	2.50	2-7/8 EUE	60171	60171HT	
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	2.50	2-7/8 EUE	60175	60175HT
				3.00	3-1/2 EUE	60178	60178HT
	33.7 - 39.0	6.625 - 6.765	6.453	2.50	2-7/8 EUE	60176	60176HT
				3.00	3-1/2 EUE	60177	60177HT
8-5/8	20.0 - 28.0	8.017 - 8.191	7.750	4.00	4-1/2 EUE	60181	60181HT
	24.0 - 40.0	7.725 - 8.097	7.500	2.50	2-7/8 EUE	60185	60185HT
				3.00	3-1/2 EUE	60187	60187HT
	32.0 - 40.0	7.725 - 7.921	7.500	4.00	4-1/2 EUE	60182	60182HT
44.0 - 49.0	7.511 - 7.625	7.312	2.50	2-7/8 EUE	60186	60186HT	
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	4.00	4-1/2 EUE	60196S**	60196HT [△]
	43.5 - 53.5	8.535 - 8.755	8.250	4.00	4-1/2 EUE	60195S**	60195HT [△]
10-3/4	32.75 - 51.0	9.850 - 10.192	9.625	4.00	4-1/2 EUE	60101**	-
	51.0 - 65.7	9.560 - 9.850	9.312	4.00	4-1/2 EUE	60110**	-
11-3/4	42.0 - 65.0	10.682 - 11.084	10.438	4.00	4-1/2 EUE	60111**	-
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	4.00	4-1/2 EUE	60113**	-

** Designed for differential pressures up to 6,000 PSI.

[△] Designed for differential pressures up to 8,000 PSI

Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

NOTE: All pricing includes standard Nitrile trim. Other sizes, connections, and rubber options available upon request.

JETTSET PACKER

Mechanical Set Packers

The **Jettset Packer** is a versatile mechanically set retrievable packer and may be used in any production application. This packer is suited for treating, testing, or injection applications, in pumping or flowing wells, either deep or shallow. This packer can be left in tension or compression, depending on well conditions and the required application. An internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set and opens prior to releasing the upper slips when retrieving to allow pressure equalization. The J-Slot design allows easy setting and releasing; 1/4 turn right-hand set, 1/4 turn right-hand release.

This packer is rated to 7,000 PSI and can be configured with different elastomers and metallics to suit downhole conditions.

Special Features

- By-pass below upper slips to wash debris when valve is opened
- By-pass is opened before upper slips are released
- Can be set with tension for shallow well applications
- Can be left in tension, compression or neutral
- 1/4 turn right-hand set, 1/4 turn right-hand release standard
- Additional J-Slot arrangements available
- Short, compact design



Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	1.94	2-3/8 EUE	12045
7	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	2-7/8 EUE	12072

¹ Maximum OD is across retracted drag blocks.

NOTE: All pricing includes standard Nitrile trim. Carbide, other sizes and connections are available upon request.

AS-II PACKER

The **AS-II Packer** is a large-opening, compression-set packer with mechanical slip hold-downs. This packer withstands high pressure from above or below by using a 3-element packing system, and upper and lower mechanical slips. A J-slot and a drag block mechanism are incorporated for easy setting. This packer has a built-in unloader which circulates across the mechanical hold-down slips to improve retrievability. The unloader has a pressure compensating piston to keep it closed when pressure is greater below the set packer.

The AS-II Packer is available in the standard J-slot arrangement - right-hand auto set with straight pick-up release. Other J-slot arrangements are available: right-hand manual set, left-hand auto set, and left-hand manual set. All J-slot arrangements are straight pick-up release.

Special Features

- Large internal by-pass
- Mechanical slips vs. hydraulic buttons
- Differential pressure holds valve closed
- Additional J-slot arrangements available

Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Min ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
2-7/8	6.4 - 6.5	2.375 - 2.441	2.250	2.263 ¹	0.62	1.050 EUE	61125
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	-	1.25	1.900 NUE	61135
			2.938	-	1.25	1.900 NUE	61136
4	9.5 - 11.0	3.476 - 3.548	3.250	3.312 ¹	1.50	1.900 EUE	61140
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	1.94	2-3/8 EUE	61145
	15.1	3.826	3.656	-	1.94	2-3/8 EUE	61144
5	11.5 - 18.0	4.276 - 4.560	4.125	4.220 ¹	1.94	2-3/8 EUE	61150
	18.0 - 21.4	4.126 - 4.276	4.000	-	1.94	2-3/8 EUE	61152
5-1/2	14.0 - 17.0	4.892 - 5.012	4.625	-	2.00	2-3/8 EUE	61155
	14.0 - 20.0	4.778 - 5.012	4.625	-	2.38	2-7/8 EUE	61156
	20.0 - 23.0	4.670 - 4.778	4.500	-	2.00	2-3/8 EUE	61157
				-	2.38	2-7/8 EUE	61159
5-3/4	17.6 - 19.4	4.958 - 5.021	4.875	-	2.38	2-7/8 EUE	61158Y
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	-	2.50	2-7/8 EUE	61167
	24.0 - 32.0	5.675 - 5.921	5.500	-	2.50	2-7/8 EUE	61165
7	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	2-7/8 EUE	61172
	26.0 - 32.0	6.094 - 6.276	5.875	-	2.50	2-7/8 EUE	61170
				5.936 ¹	3.00	3-1/2 EUE	61173
	29.0 - 35.0	6.004 - 6.184	5.812	-	2.50	2-7/8 EUE	61171
7-5/8	33.7 - 39.0	6.625 - 6.765	6.453	-	3.00	3-1/2 EUE	61177
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	-	3.00	3-1/2 EUE	61198
				-	4.00	4-1/2 EUE	61196
	43.5 - 53.5	8.535 - 8.755	8.250	-	3.00	3-1/2 EUE	61197
				-	4.00	4-1/2 EUE	61195
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	-	4.00	4-1/2 EUE	61113

¹Maximum OD is across retracted drag blocks.

OPTIONS: RS (Right-Hand Auto Set, Straight Pick-Up Release), RM (Right-Hand Manual Set, Straight Pick-Up Release), LS (Left-Hand Auto Set, Straight Pick-Up Release), LM (Left-Hand Manual Set, Straight Pick-Up Release)

NOTE: All pricing includes standard Nitrile trim. Carbide, other sizes and connections are available upon request.



Mechanical Set Packers

AS-III PACKER

The **AS-III Packer** is a single-grip packer with no upper hold-down for use where no differential pressure from below is present. From the packing elements down, this packer operates identically to the AS-II Packer. This packer also features a large by-pass area to prevent swabbing when running or retrieving. This packer is ideal for isolating casing

holes or perforations when used as the lower packer in conjunction with the Snapset Packer as the upper packer.

Special Features

- Large internal by-pass
- 1/4 turn set / straight pick-up release
- Additional J-slot arrangements available



Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	-	1.25	1.900 NUE	63135RS
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	1.94	2-3/8 EUE	63145RS
	13.5 - 15.1	3.826 - 3.920	3.650	-	1.94	2-3/8 EUE	63144RS
5	11.5 - 15.0	4.408 - 4.560	4.125	4.220 ¹	1.94	2-3/8 EUE	63150RS
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	-	1.94	2-3/8 EUE	63155RS
				-	2.38	2-7/8 EUE	63156RS
	20.0 - 23.0	4.670 - 4.778	4.500	-	2.00	2-3/8 EUE	63157RS
				-	2.38	2-7/8 EUE	63159RS
5-3/4	21.5 - 24.0	4.784 - 4.879	4.720	-	2.38	2-7/8 EUE	63158Z
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	-	2.50	2-7/8 EUE	63167RS
	24.0 - 32.0	5.675 - 5.921	5.500	-	2.50	2-7/8 EUE	63165RS
7	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	2-7/8 EUE	63172RS
			6.000	6.125 ¹	3.00	3-1/2 EUE	63174RS
	26.0 - 32.0	6.094 - 6.276	5.875	-	2.50	2-7/8 EUE	63170RS
				5.936 ¹	3.00	3-1/2 EUE	63173RS
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	-	2.50	2-7/8 EUE	63175RS
8-5/8	28.0 - 40.0	7.725 - 8.017	7.500	-	3.00	3-1/2 EUE	63182RS
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	-	3.00	3-1/2 EUE	63196RS
	43.5 - 53.5	8.535 - 8.755	8.250	-	2.50	2-7/8 EUE	63198RS
				-	4.00	4-1/2 EUE	63195

¹Maximum OD is across retracted drag blocks.

OPTIONS: RS (Right-Hand Auto Set, Straight Pick-Up Release), RM (Right-Hand Manual Set, Straight Pick-Up Release),

LS (Left-Hand Auto Set, Straight Pick-Up Release), LM (Left-Hand Manual Set, Straight Pick-Up Release)

NOTE: All pricing includes standard Nitrile trim. Carbide, other sizes, connections, and J-slot configurations are available upon request.

AS-5 PACKER

The **AS-5 Packer** is a compression set tool with a J-slot to control pack-off. It is run above other packers - such as the AS-III Packer - to selectively treat, produce or inject in multiple zone completions. It is also used to isolate casing hole perforations. This packer features a large by-pass area to prevent swabbing when running and retrieving. When releasing, the valve allows debris to be washed from the upper slips.

Special Features

- Large internal by-pass
- Mechanical slips vs. hydraulic buttons
- Additional J-slot arrangements available

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	60845
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	2.00	2-3/8 EUE	60855
				2.38	2-7/8 EUE	60856
	20.0 - 23.0	4.670 - 4.778	4.500	2.00	2-3/8 EUE	60857
				2.38	2-7/8 EUE	60859
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	60872
				3.00	3-1/2 EUE	60874
	26.0 - 32.0	6.094 - 6.276	5.875	2.50	2-7/8 EUE	60870

NOTE: All pricing includes standard Nitrile trim. Carbide, other sizes, connections, and J-slot configurations are available upon request.



Mechanical Set Packers

SNAPSET I PACKER

The **Snapset I Packer** is a compression set packer requiring only straight set down weight to pack-off. This packer is run above other packers (such as the ASI-X Packer, AS-II Packer or AS-III Packer) for selective production to isolate casing holes and perforations.

This packer has no upper or lower slips and should be used only where intermediate differential pressures from below are expected. This packer has an internal

latch to prevent the packer from setting prematurely when running down the hole. When releasing, the latch re-engages to allow movement downhole and re-setting.

Special Features

- Large internal by-pass
- Set down to pack off, pick up to release
- Compact design



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	1.25	1.900 NUE	63535
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	63545
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	2.00	2-3/8 EUE	63555
				2.38	2-7/8 EUE	63556
	20.0 - 23.0	4.670 - 4.778	4.500	2.00	2-3/8 EUE	63557
				2.38	2-7/8 EUE	63558
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	63572
	26.0 - 32.0	6.094 - 6.276	5.875	2.50	2-7/8 EUE	63570
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	2.50	2-7/8 EUE	63575
9-5/8	43.5 - 53.5	8.535 - 8.755	8.250	3.00	3-1/2 EUE	63595-BAE

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

SNAPSET II PACKER

The **Snapset II Packer** is a compression set tool requiring only straight set down weight to pack-off. This packer is run above another compression set packer (such as the AS-III Packer) to selectively treat, produce or inject in multiple zone completions. This packer is also used to isolate casing hole perforations.

This packer features a large by-pass area to prevent swabbing when running and retrieving. Once the packer is set, pressure from above or below acts down on the valve to maintain the seal and prevent upward movement of the tubing.

When releasing, the valve allows debris to be washed from the upper slips. This packer is equipped with an internal latch to prevent setting prematurely when running in the hole. When releasing, the latch re-engages to allow movement downhole.

Special Features

- Large internal by-pass
- Set down to pack off, pick up to release
- Mechanical slips vs. hydraulic buttons
- Differential pressure holds valve closed

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	1.25	1.900 NUE	63635
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	63645
	15.1	3.826	3.656	1.94	2-3/8 EUE	63644
	18.8	3.640	3.437	1.50	1.900 EUE	63646
5	11.5 - 15.0	4.408 - 4.560	4.125	1.94	2-3/8 EUE	63650
	18.0 - 21.0	4.154 - 4.276	4.000	1.94	2-3/8 EUE	63652
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	2.00	2-3/8 EUE	63655
				2.38	2-7/8 EUE	63656
	20.0 - 23.0	4.670 - 4.778	4.500	2.00	2-3/8 EUE	63657
				2.38	2-7/8 EUE	63658
6-5/8	24.0 - 32.0	5.675 - 5.921	5.500	2.50	2-7/8 EUE	63665
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	63672
				3.00	3-1/2 EUE	63674
	26.0 - 32.0	6.094 - 6.276	5.875	2.50	2-7/8 EUE	63670
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	2.50	2-7/8 EUE	63675
	33.7 - 39.0	6.625 - 6.765	6.453	2.50	2-7/8 EUE	63676
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	3.00	3-1/2 EUE	63696

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Mechanical Set Packers

CT THERMAL PACKER

The **CT Thermal Packer** is used in steam injection/production applications. This packer maintains the design features of our reliable ASI-X Packer and includes a packing element that can be packed-off with tension to allow the packer to be set at shallow depth. This packer is capable of setting in shallow wells, and will hold pressure from above and below. Its design also features an adjustable safety shear release. This packer needs 1/4 right-hand rotation to set it, and 1/4 right-hand rotation to release it (other J-slot designs are available). The thermal elements are available in 450° F to 625° F versions.

An Expansion Joint can be run above this packer to allow for tubing expansion and contraction.

Special Features

- 1/4 right-hand set, 1/4 right-hand release (standard)
- Variable safety shear release
- Capable of setting in shallow depths
- Holds pressure from above and below
- Thermal elements 450° F to 625° F
- Additional J-slot arrangements available



Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Min ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
5-1/2	13.0 - 17.0	4.892 - 5.044	4.750	-	2.00	2-3/8 EUE	74055
	20.0 - 23.0	4.670 - 4.778	4.500	-	2.00	2-3/8 EUE	74056
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	-	2.50	2-7/8 EUE	74066
	24.0 - 32.0	5.675 - 5.921	5.500	-	2.50	2-7/8 EUE	74065
7	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	2-7/8 EUE	74072
					3.00	3-1/2 EUE	74074
	26.0 - 32.0	6.094 - 6.276	5.875	-	2.50	2-7/8 EUE	74070
				-	3.00	3-1/2 EUE	74073

¹ Maximum OD is across retracted drag blocks.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

IE THERMAL PACKER

The **IE Thermal Packer** is a CT Thermal Packer with an Internal Expansion (IE) Joint. This packer is a double-grip retrievable packer designed for steam injection/production. This packer's design is based on our highly successful ASI-X Packer.

This packer features a double-grip hold down system capable of holding pressure from above and below. This feature allows the packer to maintain pack-off and prevent movement of the packing element without having the packer in tension or compression. The double-grip feature allows the packer to be ideally suited for huff and puff operations as well as continuous steam injection.

This packer is equipped with high temperature EPDM elements with wire mesh backups to prevent extrusion for service up to 450° F (an element package for 650° F is also available).

Special Features

- J-Slot controlled expansion joint
- Based on proven ASI-X Packer design
- Safety shear release
- Expansion joint up to 20 Ft available

Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
5	11.5 - 15.0	4.408 - 4.560	4.125	4220 ¹	1.50	2-3/8 EUE	74150
	18.0 - 20.8	4.156 - 4.276	4.000	-	1.50	2-3/8 EUE	74152
7	17.0 - 26.0	6.276 - 6.538	6.000	6.125 ¹	3.00	3-1/2 EUE	74170
	26.0 - 32.0	6.094 - 6.276	5.875	-	3.00	3-1/2 EUE	74171
9-5/8	43.5 - 53.5	8.535 - 8.755	8.250	-	4.00	4-1/2 EUE	74195

¹Maximum OD is across retracted drag blocks.

OPTIONS: Available with carbide and other expansion joint lengths (10 FT, 15 FT, and 20 FT).

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Mechanical Set Packers

TM ANCHOR/CATCHER

The **TM Anchor/Catcher** is a retrievable positive action anchor tool to hold tubing strings in tension or compression during pump strokes to prevent tubing buckling. This increases pumping efficiency while reducing rod and tubing wear. This tool also catches the tubing should it part. Stainless steel drag springs employ low stress value to minimize failure under corrosive conditions. If the TM Anchor/Catcher cannot be released with right-hand rotation, it is equipped with a shear release activated by an upward pull.

Special Features

- Stainless steel drag springs
- Enclosed slips
- Rotation or shear release
- Safety release value easily adjusted



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	2.00	2-3/8 EUE	32045
	13.5 - 15.1	3.826 - 3.920	3.656	2.00	2-3/8 EUE	32044
5-1/2	13.0 - 23.0	4.670 - 5.044	4.500	2.00	2-3/8 EUE	32055
				2.38	2-7/8 EUE	32056
6-5/8	20.0 - 32.0	5.675 - 6.049	5.500	2.50	2-7/8 EUE	32065
				3.00	3-1/2 EUE	32066
7	17.0 - 32.0	6.094 - 6.538	5.875	2.00	2-3/8 EUE	32071
				2.50	2-7/8 EUE	32070
				3.00	3-1/2 EUE	32073
7-5/8	24.0 - 39.0	6.625 - 7.025	6.400	2.50	2-7/8 EUE	32075
9-5/8	32.3 - 53.5	8.535 - 9.001	8.250	3.00	3-1/2 EUE	32095-BAE
				4.00	4-1/2 EUE	32095

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

DRAG BLOCK TUBING ANCHOR/CATCHER

The **Drag Block Tubing Anchor/Catcher** (DB Anchor) is a retrievable positive-action tubing anchor designed to hold the tubing string in tension or compression. It has drag blocks to allow the anchor to be run deeper than conventional drag spring anchors. The anchor prevents movement of the tubing during pumping strokes; and holds it stationary if it should part. The use of a tension tubing anchor increases pump efficiency, reduces rod and tubing wear, and keeps tubing and rods from falling into the well in case of a part.

Special Features

- Enclosed slips
- Rotational release or shear release
- Safety release value easily adjusted

Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	1.94	2-3/8 EUE	32545
5-1/2	13.0 - 20.0	4.778 - 5.044	4.500	4.640 ¹	2.00	2-3/8 EUE	32555
					2.44	2-7/8 EUE	32556
7	17.0 - 32.0	6.094 - 6.538	5.750	5.854 ¹	2.50	2-7/8 EUE	32570
					3.00	3-1/2 EUE	32573
7-5/8	24.0 - 39.0	6.625 - 7.025	6.400	6.404 ¹	2.50	2-7/8 EUE	32575
8-5/8	24.0 - 40.0	7.725 - 8.097	7.500	7.687 ¹	4.00	4-1/2 EUE	32585
9-5/8	32.3 - 53.5	8.535 - 9.001	8.250	-	3.00	3-1/2 EUE	32595-XBAE
					4.00	4-1/2 EUE	32595

¹ Maximum OD is across retracted drag blocks.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Mechanical Set Packers

ASI-X ANCHOR

The **ASI-X Anchor** is a mechanically set double grip tubing anchor designed to be exceptionally durable and debris tolerant. This anchor is based on the proven ASI-X Packer design, but has been shortened, simplified and does not have a sealing element. This anchor is suited for treating, testing, injecting, pumping wells, and flowing wells, deep or shallow. This anchor is built using durable ASI-X Packer parts making redress both quick and economical.

The double slip design allows the anchor to be left in tension or compression, depending on well conditions and the required application. The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, right-hand release. With the variety of J-body configurations available, this anchor can also be set with

other packers in tandem. This anchor is also equipped with an adjustable straight pickup emergency shear release and when released in this manner, the anchor will reset when moved down the hole.

Special Features

- Based on proven ASI-X Packer design
- Can be set with tension for shallow well applications
- Can be left in tension, compression or neutral
- 1/4 turn right-hand set, 1/4 turn right-hand release
- Additional J-Slot configurations available
- Adjustable emergency shear release



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	1.25	1.900 NUE	32335
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	32345
	13.5 - 15.1	3.826 - 3.920	3.650	1.94	2-3/8 EUE	32344
5	18.0 - 20.8	4.156 - 4.276	4.00	1.94	2-3/8 EUE	32352
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	2.38	2-7/8 EUE	32356
	20.0 - 23.0	4.670 - 4.788	4.500	2.38	2-7/8 EUE	32359
	23.0 - 26.0	4.548 - 4.670	4.406	2.38	2-7/8 EUE	32351
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	32372
				3.00	3-1/2 EUE	32374
	26.0 - 32.0	6.094 - 6.276	5.875	2.50	2-7/8 EUE	32370
7-5/8	24.0 - 29.7	6.875 - 7.025	6.453	2.50	2-7/8 EUE	32375

NOTE: All pricing includes standard Nitrile trim. Other sizes, connections, and rubber options available upon request. Available with wicker or carbide slips.

CASING PACKER

The **Casing Packer** is a large bore, single grip packer used to isolate damaged casing and for production or injection. This packer can be run in tension or compression and can be used as a liner hanger when equipped with a right-hand release sub. Coarse, deep wickered slips allow this packer to set in open-hole or scaly casing. For open-hole set, this packer can be equipped with two elongated packing elements to assure a positive seal.

Special Features

- Set/run in tension or compression
- Applicable for set in open hole
- Can be used as a liner hanger
- Full opening
- Coarse, deep wickered slip teeth
- Available with right-hand or left-hand set, manual or automatic release

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Box Down	Part Number
Size (inches)	Weight (lbs/ft)					
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	2.50	2-7/8 EUE	44145
	15.1	3.826	3.656	2.50	2-7/8 EUE	44144
5	11.5 - 20.3	4.184 - 4.560	4.000	2.50	2-7/8 EUE	44150
	18.0 - 21.4	4.126 - 4.276	3.875	2.50	2-7/8 EUE	44151
5-1/2	13.0 - 17.0	4.892 - 5.044	4.650	3.50	4" NUE	44156
	13.0 - 20.0	4.778 - 5.044	4.625	3.00	3-1/2 EUE	44155
5-3/4	14.0 - 17.0	5.190 - 5.290	4.875	3.50	4-1/2 EUE	44157
6	18.0 - 23.0	5.240 - 5.424	5.000	3.50	4" NUE	44160
6-5/8	20.0 - 28.0	5.791 - 6.049	5.625	4.00	4-1/2 LTC	44165
7	17.0 - 26.0	6.276 - 6.538	6.000	4.75	5-1/2 LTC	44172
	17.0 - 38.0	5.920 - 6.538	5.750	4.00	4-1/2 LTC	44170
	20.0 - 29.0	6.184 - 6.456	5.969	4.50	5" LTC	44171
7-5/8	20.0 - 33.7	6.765 - 7.125	6.500	4.00	4-1/2 LTC	44175
				5.00	5-1/2 LTC	44176
8-5/8	24.0 - 36.0	7.825 - 8.097	7.656	6.00	6-5/8 LTC	44186
				6.50	7" LTC	44187
				4.15	4-1/2 LTC	44184
9-5/8	24.0 - 40.0	7.725 - 8.097	7.500	5.00	5-1/2 LTC	44185
				32.3 - 43.5	8.755 - 9.001	8.500
10-3/4	43.5 - 53.5	8.535 - 8.755	8.250	6.50	7" LTC	44196
11-3/4	32.75 - 55.5	9.760 - 10.192	9.500	6.50	7" LTC	44110
13-3/8	42.0 - 65.0	10.682 - 11.084	10.500	8.00	8-5/8 LTC	44111
18-5/8	48.0 - 77.0	12.275 - 12.715	12.000	8.75	9-5/8 LTC	44113
	87.5 - 117.5	17.439 - 17.755	17.000	12.50	13-3/8 STC	44118

OPTIONS: RS (Right-Hand Auto Set), RM (Right-Hand Manual Set), LS (Left-Hand Auto Set), LM (Left-Hand Manual Set)
NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Mechanical Set Packers

D-H TENSION PACKER

The **D-H Tension Packer** is for use in water flood, injection or producing wells. This tension packer has a built-in safety system to eliminate problems should conventional retrieval methods fail. Right-hand rotation releases the first safety joint allowing the slips to pull off the cone and release the packer. Should the packer fail to release, a second safety joint can be broken to release the packer. This safety feature allows for circulation down the tubing to remove debris.

In addition, the D-H Tension Packer is available for open-hole applications and

incorporates dual elongated packing elements and deep wickered slips for better bite into the formation.

Special Features

- Full opening
- Built-in safety joint
- Stainless steel drag springs
- Available to set in open hole
- Long packing element to give maximum sealing area



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
2-7/8	6.4 - 6.5	2.375 - 2.441	2.250	0.75	1.900 EUE	40525
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	40545
5	11.5 - 15.0	4.408 - 4.560	4.125	1.94	2-3/8 EUE	40550
	15.0 - 20.8	4.156 - 4.408	4.000	1.94	2-3/8 EUE	40551
5-1/2	13.0 - 20.0	4.778 - 5.044	4.625	1.94	2-3/8 EUE	40555
				2.44	2-7/8 EUE	40556
	20.0 - 23.0	4.670 - 4.778	4.500	1.94	2-3/8 EUE	40557
				2.44	2-7/8 EUE	40558
6	15.0 - 20.0	5.352 - 5.524	5.188	2.44	2-7/8 EUE	40560
6-5/8	24.0 - 32.0	5.675 - 5.921	5.500	2.44	2-7/8 EUE	40565
7	17.0 - 29.0	6.184 - 6.538	6.000	2.44	2-7/8 EUE	40570
				3.00	3-1/2 EUE	40573
7-5/8	20.0 - 33.7	6.765 - 7.125	6.625	2.44	2-7/8 EUE	40575
				3.00	3-1/2 EUE	40576
8-5/8	24.0 - 40.0	7.725 - 8.097	7.500	2.50	2-7/8 EUE	40585
				3.00	3-1/2 EUE	40587
9-5/8	29.3 - 43.5	8.755 - 9.063	8.500	2.50	2-7/8 EUE	40595
				3.00	3-1/2 EUE	40597
10-3/4	32.75 - 55.5	9.760 - 10.192	9.500	3.00	3-1/2 EUE	40510
13-3/8	48.0 - 72.0	12.347 - 12.715	12.000	3.00	3-1/2 EUE	40513

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

D-H Tension Open Hole Packer Product Specifications

Casing Size (inches)	Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
4-1/2	3.920 - 4.090	3.750	1.94	2-3/8 EUE	40645
5	4.276 - 4.560	4.125	1.94	2-3/8 EUE	40650
5-1/2	4.670 - 4.778	4.500	1.94	2-3/8 EUE	40657
			2.44	2-7/8 EUE	40658
	4.778 - 5.044	4.625	1.94	2-3/8 EUE	40655
			2.50	2-7/8 EUE	40656
6	5.000 - 6.220	4.875	1.94	2-3/8 EUE	40660
6-5/8	5.675 - 5.921	5.500	2.50	2-7/8 EUE	40665
7	6.094 - 6.135	5.750	2.00	2-3/8 EUE	40674
			2.50	2-7/8 EUE	40671
	6.184 - 6.538	6.000	2.00	2-3/8 EUE	40672
			2.50	2-7/8 EUE	40670
			3.00	3-1/2 EUE	40673
7-5/8	6.765 - 7.125	6.625	2.44	2-7/8 EUE	40675
			3.00	3-1/2 EUE	40676
8-5/8	7.725 - 8.097	7.500	2.50	2-7/8 EUE	40685
			3.00	3-1/2 EUE	40687
9-5/8	8.755 - 9.063	8.500	2.50	2-7/8 EUE	40695
			3.00	3-1/2 EUE	40697
10-3/4	9.760 - 10.050	9.500	3.00	3-1/2 EUE	40610
13-3/8	12.347 - 12.715	12.000	3.00	3-1/2 EUE	40613

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

DL TENSION & DL SHEAR TENSION PACKER

The **DL Tension Packer** and **DL Shear Tension Packer** are economical, compact tools for injection, pumping, medium range treating and production applications. These packers are set by 1/4 right-hand rotation of the tubing and then pull tension. To release these packers, slack off the tubing and the packer will automatically re-jay into the release position. These packers have a right-hand rotation release allowing retrieval of the tubing string.

The DL Tension Packer can be run in tension or compression. When the DL Tension Packer is run in compression, the right-hand release option cannot be utilized.

The DL Shear Tension Packer features an adjustable straight pull safety shear release. This packer is not designed to be run in compression.

Special Features

- Long element for increased pack-off
- Rotational safety tubing release
- Safety shear release (DL Shear Tension Packer Only)
- Deep wickered slips



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)					DL Tension	DL Shear Tension
2-7/8	6.4 - 6.5	2.375 - 2.441	2.250	0.75	3/4" LINE PIPE / 1.315 NUE	40125	41225
				1.13	1.315 EUE	40127	41227
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	1.50	1.900 EUE	40135	41235
	12.8	2.764	2.437	1.25	1.900 EUE / 1.900 NUE	40136	41236
4	9.5 - 11.0	3.476 - 3.548	3.250	1.50	2-3/8 EUE	40140	41240
				1.88	2-3/8 EUE	40141	41241
	14.8	3.240	3.090	1.50	1.900 EUE	40139	41239
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	40145	41245
	12.6	3.958	3.187	1.50	2-3/8 EUE	40142	41242
	15.1	3.826	3.656	1.94	2-3/8 EUE	40143	41243
	15.1 - 16.6	3.754 - 3.826	3.500	1.94	2-3/8 EUE	40144	41244
5	11.5 - 18.0	4.276 - 4.560	4.125	1.94	2-3/8 EUE	40150	41250

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

DL Tension & DL Shear Tension Packer Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)					DL Tension	DL Shear Tension
5-1/2	13.0 - 20.0	4.778 - 5.044	4.625	1.94	2-3/8 EUE	40155	41255
				2.44	2-7/8 EUE	40156	41256
	20.0 - 23.0	4.670 - 4.778	4.500	1.94	2-3/8 EUE	40157	41257
				2.44	2-7/8 EUE	40158	41258
6	15.0 - 20.0	5.352 - 5.524	5.125	2.44	2-7/8 EUE	40161	41261
	20.0 - 23.0	5.240 - 5.352	5.000	2.44	2-7/8 EUE	40160	41260
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	2.44	2-7/8 EUE	40166	41266
	20.0 - 28.0	5.791 - 6.049	5.625	2.44	2-7/8 EUE	40164	41264
	24.0 - 32.0	5.675 - 5.921	5.500	2.44	2-7/8 EUE	40165	41265
7	17.0 - 29.0	6.184 - 6.538	6.000	2.44	2-7/8 EUE	40170	41270
				3.00	3-1/2 EUE	40173	41273
7-5/8	20.0 - 33.7	6.765 - 7.125	6.625	2.44	2-7/8 EUE	40175	41275
				3.00	3-1/2 EUE	40176	41276
8-5/8	20.0 - 28.0	8.017 - 8.191	7.750	2.50	2-7/8 EUE	40186	41286
				3.00	3-1/2 EUE	40188	41288
	24.0 - 40.0	7.725 - 8.097	7.500	2.50	2-7/8 EUE	40185	41285
				3.00	3-1/2 EUE	40187	41287
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	2.50	2-7/8 EUE	40195	41299-XBAC
				3.00	3-1/2 EUE	40197	41299-XBAE
				4.00	4-1/2 LTC	40199	41299
	43.5 - 53.5	8.535 - 8.755	8.250	2.50	2-7/8 EUE	40194	41298-XBAC
				3.00	3-1/2 EUE	40196	41298-XBAE
				4.00	4-1/2 LTC	40198	41298
10-3/4	32.75 - 55.5	9.760 - 10.192	9.500	4.00	4-1/2 EUE	40110	41210
11-3/4	38.0 - 66.7	10.656 - 11.150	10.375	2.50	2-7/8 EUE	40111	41211
12-3/4	43.0 - 65.42	11.750 - 12.130	11.590	4.00	4-1/2 EUE	-	41212
13-3/8	48.0 - 72.0	12.347 - 12.715	12.000	4.00	4-1/2 EUE	40113	41213

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

GV CUP PACKER

The **Type GV Cup Packer** is an economical means of isolating casing leaks and depleted zones and is also a production or injection packer for low pressure applications. Depending on application, this packer can be run with cups opposed or in the same direction. This packer is also available with packing element back-up rings for higher pressure

applications and comes in a full range of tubing and casing sizes in two-cup or four-cup models.

Special Features

- Economic design
- Cup direction option
- Tubing size options



2 Cup Version



4 Cup Version

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
3-1/2	9.2 - 10.3	2.922 - 2.992	2.810	1.50	1.900 NUE	43935
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	2.00	2-3/8 EUE	43945
				2.50	2-7/8 EUE	43946
	15.1	3.826	3.650	2.00	2-3/8 EUE	43947
5	13.0 - 15.0	4.408 - 4.494	4.250	2.00	2-3/8 EUE	43951
	18.0	4.276	4.130	2.00	2-3/8 EUE	43950
5-1/2	13.0 - 20.0	4.778 - 5.044	4.625	3.00	3-1/2 EUE	43953
	14.0 - 20.0	4.778 - 5.012	4.625	2.50	2-7/8 EUE	43956
	17.0 - 20.0	4.778 - 4.892	4.625	2.00	2-3/8 EUE	43955
	20.0 - 26.0	4.548 - 4.778	4.375	2.50	2-7/8 EUE	43957
6-5/8	20.0	6.049	5.750	3.00	3-1/2 EUE	43965
	20.0 - 24.0	5.921 - 6.049	5.750	4.00	4-1/2 EUE	43966
7	17.0 - 29.0	6.184 - 6.538	6.000	2.50	2-7/8 EUE	43971
				3.00	3-1/2 EUE	43973
	20.0 - 29.0	6.184 - 6.456	6.000	2.00	2-3/8 EUE	43970
				4.00	4-1/2 LTC	43974
7-5/8	24.0 - 26.4	6.969 - 7.025	6.750	2.50	2-7/8 EUE	43976
	29.7 - 33.7	6.765 - 6.875	6.375	2.50	2-7/8 EUE	43975
8-5/8	28.0 - 36.0	7.825 - 8.017	7.375	2.50	2-7/8 EUE	43985
9-5/8	40.0 - 47.0	8.681 - 8.835	8.450	3.00	3-1/2 EUE	43995
10-3/4	40.5 - 55.5	9.760 - 10.050	9.710	4.00	4-1/2 LTC	4391075

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections are available upon request.

GAS VENT PUMPING PACKER

The **Gas Vent Pumping Packer** offers an inexpensive option for isolating casing leaks or depleted perforations in pumping wells. This tool prevents gas lock by allowing gas to vent to the surface past damaged zones. The interval between top and bottom cups can be any length. This packer is available with double or multiple cups.

Special Features

- Inexpensive alternative to squeeze job
- Variable intervals easily adjusted
- Optional double cups to multiple cups

Product Specifications

Casing		Liner Size (inches)	Tubing Size (inches)	Tool OD (inches)	Tool ID (inches)	Part Number
Size (inches)	Weight (lbs/ft)					
4-1/2	9.5 - 13.5	3" Line Pipe	2-3/8	3.813	2.69	42145
5-1/2	13.0 - 20.0	3" Line Pipe	2-3/8	4.000	2.75	42155
		3-1/2" Line Pipe	2-7/8	4.625	3.13	42156
7	20.0 - 29.0	4-1/2" LTC	2-3/8	5.000	2.75	42171
			2-7/8	5.000	3.13	42170

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Standard



4 Cup Version

RETRIEVABLE SEAL BORE PACKER - SINGLE BORE

The **Retrievable Seal Bore (RSB) Packer** delivers high performance with simplicity of design and desirable economics. This packer is rated for 7,000 PSI and can be equipped to withstand severe corrosion and high temperatures. The RSB Packer is set on wireline (with minor changes) or on tubing with a hydraulic setting tool and is retrieved using a retrieving tool.

Special Features

- Simple operation
- Economical
- Easy to retrieve
- Many applications
- Easily modified for a wide range of conditions and temperatures

NOTE: A retrieving tool is required to retrieve these packers and must be purchased separately.

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Packer Bore (inches)	Min ID Thru Seals (inches)	Part Number
Size (inches)	Weight (lbs/ft)					
5	15.0 - 18.0	4.276 - 4.408	4.000	2.688	1.940	26550
5-1/2	13.0 - 20.0	4.778 - 5.044	4.625	2.688	1.940	26055
				3.000	2.380	26555
6-5/8	17.0 - 32.0	5.675 - 6.135	5.468	3.250	2.420	26565
7	17.0 - 20.0	6.456 - 6.538	6.125	3.000	2.380	26071
				4.000	3.000	26571
				3.000	2.380	26070
	23.0 - 29.0	6.184 - 6.366	5.938	3.250	2.420	26073
				4.000	3.000	26574
				3.000	2.380	26072
32.0 - 35.0	6.004 - 6.094	5.812	4.000	3.000	26572	
			3.000	2.380	26072	
7-5/8	33.7 - 39.0	6.625 - 6.765	6.375	3.000	2.380	26078
				4.000	3.000	26578
8-5/8	24.0 - 40.0	7.725 - 8.097	7.500	4.000	3.000	26085
				4.750	4.000	26585
	40.0 - 49.0	7.511 - 7.725	7.312	4.000	3.000	26086
				4.750	4.000	26586
9-5/8	40.0 - 47.0	8.681 - 8.835	8.500	6.000	4.750	26596
				4.750	3.500	26094
	43.5 - 53.5	8.535 - 8.755	8.250	6.000	4.750	26595
13-3/8	54.5 - 68.0	12.415 - 12.615	12.250	9.000	8.000	26513

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



RETRIEVABLE SEAL BORE PACKER - DUAL BORE

The **Retrievable Seal Bore (RSB) Dual Bore Packer** delivers high performance with simplicity of design and desirable economics. This packer allows for a larger ID through the packer by sealing in an upper sealbore. This packer is rated for 7,000 PSI and can be equipped to withstand severe corrosion and high temperatures.

NOTE: A retrieving tool is required to retrieve these packers and must be purchased separately.

Special Features

- Simple operation
- Economical
- Easy to retrieve
- Easily modified for a wide range of conditions and temperatures

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Packer Bore (inches)	Upper Seal Bore (inches)	Part Number
Size (inches)	Weight (lbs/ft)					
5	15.0 - 18.0	4.276 - 4.408	4.000	2.688	3.000	26850
5-1/2	13.0 - 20.0	4.778 - 5.044	4.625	3.000	4.000	26855
	20.0 - 23.0	4.670 - 4.778	4.500	3.000	4.000	26857
7	17.0 - 26.0	6.276 - 6.538	5.938	4.000	5.250	26870
	26.0 - 32.0	6.094 - 6.276	5.875	4.000	5.250	26871
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	4.000	4.750	26875

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Mechanical Set Packers

RSB RETRIEVING TOOL

The **RSB Retrieving Tool** is used to retrieve RSB Packers. This retrieving tool latches into the top sub with a standard anchor latch to allow the RSB Packer to be retrieved with a straight pull. A spring-loaded collet locates below the support ring that keeps the packer locked in a set position. Latch fingers latch into the packer. A pull shears the support ring and releases the packer. If

the packer cannot be retrieved normally, this retrieving tool has a safety release that allows it to be disconnected from the packer with right-hand rotation.

Special Features

- Simple operation
- Safety shear release
- Rugged design for multiple use



Product Specifications - Single Bore RSB

Packer Size (inches)	Packer Bore (inches)	Tool OD (inches)	Tool ID (inches)	Top Connection	Part Number
5	2.688	3.500	1.00	2-3/8 EUE	26650
5-1/2	3.000	3.688	1.25	2-7/8 EUE	26655
6-5/8	3.250	4.250	1.38	2-7/8 EUE	26665
7	3.000	3.688	1.25	2-7/8 EUE	26655
	4.000	5.062	1.75	2-7/8 EUE	26670
9-5/8	6.000	6.980	2.75	4-1/2 EUE	26696
13-3/8	9.000	9.365	5.75	7" LTC	26613

NOTE: Other sizes and connections available upon request.

Product Specifications - Dual Bore RSB

Packer Size (inches)	Packer Bore (inches)	Tool OD (inches)	Tool ID (inches)	Top Connection	Part Number
5	3.000 / 2.688	3.688	1.00	2-7/8 EUE	26950RT
5-1/2	3.000	3.688	1.25	2-7/8 EUE	26655
7	5.250 / 4.000	5.062	1.75	2-7/8 EUE	26670
7-5/8	4.750 / 4.000	5.810	1.75	2-7/8 EUE	26975

NOTE: Other sizes and connections available upon request.

Product Specifications - Hydraulic Set RSB

Packer Size (inches)	Packer Bore (inches)	Tool OD (inches)	Tool ID (inches)	Top Connection	Part Number
5-1/2	3.000	3.688	1.25	2-7/8 EUE	27655
7	4.000	5.062	1.75	2-7/8 EUE	27670

NOTE: Other sizes and connections available upon request.

TYPE DL-IB TANDEM TENSION PACKER

The **Type DL-IB Tandem Tension Packer** is an economical, compact, low-pressure, tension set, isolation packer used in casing or perforations and multi-zone injection installations. This packer runs with a tension set packer below. It can be run with the J-pins in the un-jayed position or in the jayed position. In the un-jayed position, applying tension shears the shear pins and allows pack-off.

If run in the jayed position, the DL-IB Tandem Tension Packer must be used in

conjunction with an ASI-X Packer. Set down weight shears the pins; left-hand rotation and applied tension will set the tool.

Special Features

- Economical
- Run in jayed position, or un-jayed position
- Optional J-configurations



Mechanical Set Packers

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
3-1/2	7.7 - 10.3	2.922 - 3.068	2.781	1.53	1.900 EUE	43635
4-1/2	9.5 - 11.6	4.000 - 4.090	3.844	1.94	2-3/8 EUE	43644
				2.38	2-7/8 EUE	43646
	9.5 - 13.5	3.920 - 4.090	3.750	1.50	2-3/8 EUE	43647
				1.94	2-3/8 EUE	43645
15.1	3.826	3.650	1.94	2-3/8 EUE	43643	
5	15.0 - 18.0	4.276 - 4.408	4.125	1.94	2-3/8 EUE	43651
				2.38	2-7/8 EUE	43650
	18.0 - 20.8	4.156 - 4.276	4.000	1.94	2-3/8 EUE	43652
5-1/2	13.0 - 15.5	4.950 - 5.044	4.781	2.00	2-3/8 EUE	43655
				2.44	2-7/8 EUE	43656
	13.0 - 20.0	4.778 - 5.044	4.750	3.00	3-1/2 EUE	43653
				2.00	2-3/8 EUE	43657
	15.5 - 20.0	4.778 - 4.950	4.641	2.44	2-7/8 EUE	43658
2.00				2-3/8 EUE	43654	
7	17.0 - 23.0	6.366 - 6.538	6.125	2.00	2-3/8 EUE	43671
				2.44	2-7/8 EUE	43670
	17.0 - 26.0	6.276 - 6.538	6.000	3.00	3-1/2 EUE	43673
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	2.44	2-7/8 EUE	43675
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	3.00	3-1/2 EUE	43696
	43.5 - 53.5	8.535 - 8.755	8.250	2.50	2-7/8 EUE	43695

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

SET DOWN ISOLATION PACKER

The **Set Down Isolation Packer** is an economical, compact compression set tool used to isolate casing or perforations. It can also be used in multi-zone injection applications. This packer runs above a compression set packer (such as the AS-II Packer or AS-III Packer). Applied compression will shear the shear screws and allow pack-off. Straight pick-up releases the packer.

Special Features

- Economical design
- Adjustable delayed set
- No rotation needed to set or un-set



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
2-7/8	6.5	2.375	2.250	1.50	1.900 NUE / 1.900 EUE	64125
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	64145
5	11.5 - 20.8	4.156 - 4.560	4.000	1.94	2-3/8 EUE	64150
5-1/2	13.0 - 20.0	4.778 - 5.044	4.625	1.94	2-3/8 EUE	64155
				2.50	2-7/8 EUE	64156
				3.00	3-1/2 EUE	64158
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	64159
				2.00	2-3/8 EUE	64171
7	26.0 - 32.0	6.094 - 6.276	5.875	3.00	3-1/2 EUE	64170
				3.00	3-1/2 EUE	64174
7-5/8	33.7 - 39.0	6.625 - 6.765	5.938	2.82	2-7/8 EUE / 4-1/2 LTC	64175
8-5/8	32.0 - 40.0	7.725 - 7.921	7.500	3.00	3-1/2 EUE	64182
9-5/8	32.3 - 47.0	8.681 - 9.001	8.438	3.00	3-1/2 EUE	64196
	40.0 - 47.0	8.681 - 8.835	8.438	4.00	4-1/2 EUE	64195

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

MECHANICAL BALL VALVE

The **Mechanical Ball Valve** is a means for pressure control downhole at the packer. The ball valve provides a seal for pressure above or below the valve. This allows for pressure operation to be conducted above a set packer without disturbing formations below. No tubing plugs need to be run.

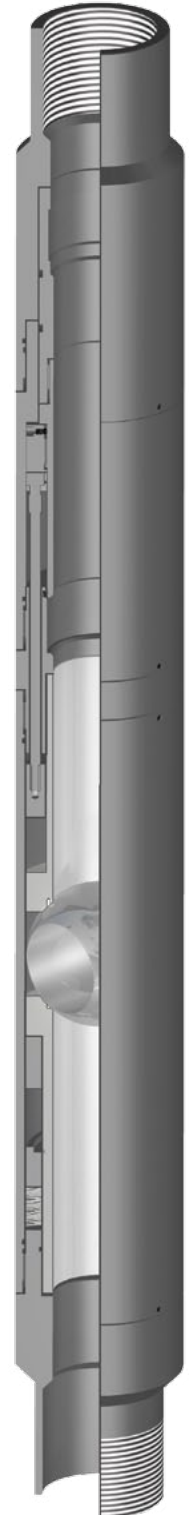
Special Features

- Holds pressure both directions
- Will not open under tubing pressure
- Full opening
- Non-elastomeric seat seal for repeated opening and closings
- Simple collet stinger design

Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
4-1/2	5.875	3.25	4-1/2 VAM TOP	54945
5-1/2	8.190	4.30	4-1/2 VAM TOP	54955

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Mechanical Set Packers

Hydraulic Set Packers



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DLH PACKER

The **DLH Packer** is a hydraulic set single-string retrievable packer and may be used in virtually 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 packer release. The standard DLH Packer is designed for differential pressures up to 7,500 PSI.

Special Features

- Adjustable setting initiation pressure
- Adjustable shear release
- Straight pull release



Hydraulic Set Packers

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	1.94	2-3/8 EUE	93545
	15.1	3.826	3.656	1.94	2-3/8 EUE	93546
5	11.5 - 15.0	4.408 - 4.560	4.125	1.94	2-3/8 EUE	93550
	18.0 - 21.0	4.154 - 4.276	4.000	1.94	2-3/8 EUE	93552
5-1/2	13.0 - 15.5	4.950 - 5.044	4.813	2.38	2-7/8 EUE	93558
	14.0 - 20.0	4.778 - 5.012	4.625	2.00	2-3/8 EUE	93555
				2.38	2-7/8 EUE	93556
	20.0 - 23.0	4.670 - 4.778	4.500	2.00	2-3/8 EUE	93557
2.38				2-7/8 EUE	93559	
6	12.0 - 20.0	5.352 - 5.620	5.188	2.38	2-7/8 EUE	93561
	17.0 - 23.0	5.240 - 5.450	5.063	2.38	2-7/8 EUE	93560

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.
Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

DLH Packer Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	2.50	2-7/8 EUE	93567
				3.00	3-1/2 EUE	93568
	24.0 - 32.0	5.675 - 5.921	5.500	2.50	2-7/8 EUE	93566
				3.00	3-1/2 EUE	93565
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	93572
				3.00	3-1/2 EUE	93574
	26.0 - 32.0	6.094 - 6.276	5.875	2.50	2-7/8 EUE	93570
				3.00	3-1/2 EUE	93573
	29.0 - 35.0	6.004 - 6.184	5.812	2.50	2-7/8 EUE	93571
				3.00	3-1/2 EUE	93573HW
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	2.50	2-7/8 EUE	93575
				3.00	3-1/2 EUE	93578
	29.7 - 33.7	6.765 - 6.875	6.563	3.00	3-1/2 EUE	93578A
				2.50	2-7/8 EUE	93576
33.7 - 39.0	6.625 - 6.765	6.453	3.00	3-1/2 EUE	93577	
			4.00	4-1/2 EUE	93585	
8-5/8	24.0 - 40.0	7.725 - 8.097	7.500	4.00	4-1/2 EUE	93585
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	2.50	2-7/8 EUE	93596-WBAC
				3.00	3-1/2 EUE	93596-WBAE
				4.00	4-1/2 EUE	93596
	43.5 - 53.5	8.535 - 8.755	8.250	2.50	2-7/8 EUE	93595-XBAC
				3.00	3-1/2 EUE	93595-WBAE
				4.00	4-1/2 EUE	93595
10-3/4	51.0 - 65.7	9.560 - 9.850	9.312	4.00	4-1/2 EUE	93510
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	5.00	5-1/2 LTC	93513

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.
Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

Hydraulic Set Packers

HYDROSET II PACKER

The **Hydroset II Packer** is a hydraulic set, mechanically held dual string production packer normally run above a single string hydraulic set or wireline set seal bore packer. Because no tubing manipulation is required to set this packer, the well head can be installed and flanged up before setting.

This packer is available with short string or long string setting capabilities and a variety of tubing connections. This packer is also adaptable for electrical submersible pump applications. This packer features a sequential upper slip release system designed to release each slip individually to reduce the pull required to release the packer. The angles on the upper slips and upper slip body result in the slips releasing smoothly from the casing.

Design Options

- Several short string options available:
 - Solid connection (flat top)
 - J-Latch (complete with scoop head)
 - “C” Latch (Snap Latch - complete with scoop head)
- Feed-through tubes can be added to most designs
- Accessories
 - Adjustable unions
 - Telescoping unions



Hydraulic Set Packers

Hydroset II Packer Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Long String		Short String		Part Number
Size (inches)	Weight (lbs/ft)			Connections	Min ID (inches)	Connections	Min ID (inches)	
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	1.900 EUE	1.50	1.900 NUE / 1.660 EUE	1.38	90555-BAA-BBA
7	17.0 - 26.0	6.276 - 6.538	6.062	2-3/8 EUE	1.94	2-3/8 EUE	1.94	90572-BAB
				2-7/8 EUE	2.50	1.900 EUE	1.61	90572-BAC-BAA
					2.50	1.900 NUE	1.50	90572-BAC-BBA
	26.0 - 32.0	6.094 - 6.276	5.938	2-3/8 EUE	1.94	2-3/8 EUE	1.94	90570-BAB
				2-7/8 EUE	2.50	1.900 EUE	1.50	90570-BAC-BBA
				2-7/8 NUE	2.50	1.900 NUE / 1.900 EUE	1.50	90570-BBC-BAA
				2-7/8 EUE	2.50	1.900 NUE	1.50	90570-BAC-BAA
29.0 - 35.0	6.004 - 6.184	5.875	2-3/8 EUE	1.94	2-3/8 EUE	1.94	90571-BAB	
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	2-7/8 EUE	2.39	2-3/8 NUE / 2-3/8 EUE	1.94	90575-BAC-BAB
8-5/8	24.0 - 32.0	7.921 - 8.097	7.688	2-7/8 EUE	2.39	2-7/8 NUE / 2-7/8 EUE	2.39	90585-BAC
				3-1/2 EUE	3.00	2-3/8 EUE	2.00	90585-BAE-BAB
	36.0 - 40.0	7.725 - 7.825	7.438	2-7/8 EUE	2.44	2-3/8 EUE	1.94	90586-BAC-BAB
9-5/8	32.3 - 40.0	8.835 - 9.001	8.615	3-1/2 EUE	3.00	1.900 EUE	1.61	90597-BAE-BAA
						2-3/8 EUE	1.94	90597-BAE-BAB
						2-7/8 EUE	2.44	90597-BAE-BAC
				4-1/2 EUE	4.00	1.900 EUE	1.61	90597-BAG-BAA
	32.3 - 47.0	8.681 - 9.001	8.500	3-1/2 EUE	3.00	3-1/2 EUE	3.00	90595-BAE
	36.0 - 43.5	8.755 - 8.921	8.500	3-1/2 EUE	3.00	2-3/8 EUE	2.00	90595-BAE-BAB
						2-7/8 EUE	2.39	90595-BAE-BAC
						4-1/2 EUE	4.00	1.900 EUE
	47.0 - 53.5	8.535 - 8.681	8.312	3-1/2 EUE	3.00	1.900 EUE	1.61	90596-BAE-BAA
						1.900 NUE	1.61	90596-BAE-BBA
2-3/8 EUE						2.00	90596-BAE-BAB	
2-7/8 EUE						2.39	90596-BAE-BAC	
3-1/2 EUE						3.00	90596-BAE	
10-3/4	51.0 - 65.7	9.560 - 9.850	9.312	4" EUE	3.50	2-7/8 EUE	2.39	90510-BAF-BAC

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.
Available Designs: Flat Top, J-Latch, "C" Latch (Snap Latch), Dual/Multiple Feed Thru

Hydraulic Set Packers

HYDROSET II-A PACKER

The **Hydroset II-A Packer** is a hydraulic set, mechanically held dual string production packer normally run above a single string hydraulic set or wireline set seal bore packer. Because no tubing manipulation is required to set this packer, the well head can be installed and flanged up before setting.

This packer is available with short string or long string setting capabilities and a variety of tubing connections. This packer is also adaptable for electrical submersible pump applications. This packer features a sequential upper slip release system designed to release each slip individually to reduce the pull required to release the packer. The angles on the upper slips and upper slip body result in the slips releasing smoothly from the casing.

Hydroset II Packer Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Long String		Short String		Part Number
Size (inches)	Weight (lbs/ft)			Connections	Min ID (inches)	Connections	Min ID (inches)	
7	26.0 - 32.0	6.094 - 6.276	5.938	2-7/8 EUE	2.39	1.900 NUE	1.50	94570-BAC-BBA



DLESP PACKER

The **DLESP Packer** is a hydraulic set, mechanically held, Electric Submersible Pump (ESP) production packer, with secondary bores for ESP feed through cable and optional chemical feed through lines. Because no tubing manipulation is required to set this packer, the wellhead can be installed and flanged up before setting.

This packer is available with a variety of tubing connections. The packer features a sequential upper slip release system designed to release each slip individually to reduce the pull required to release it. The angles on the upper slips and upper slip body result in the slips releasing smoothly from the casing

Mechanical Set Packers

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Long String		Short String		Feed Thru Holes ID (inches)	Part Number
Size (inches)	Weight (lbs/ft)			Connections	Min ID (inches)	Connections	Min ID (inches)		
4-1/2	9.5 - 13.5	3.920 - 4.090	3.781	1.900 EUE	1.56	-	-	3/8 NPT X 1/4 NPT = 0.42	94845-BAA-2
6-5/8	20.0 - 28.0	5.791 - 6.049	5.640	2-7/8 EUE	2.39	-	-	(QTY 5) 1/2 NPT = 0.62	94866-BAC-5
7	26.0 - 32.0	6.094 - 6.276	5.938	2-7/8 EUE	2.39	1.900 NUE	1.50	3/8 NPT = 0.50 AND 1/2 NPT = 0.50	98470-BAC-BBA-2
								3/8 NPT = 0.50 AND 3/4 NPT = 0.82	94870-BAC-BBA-3
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	3-1/2 EUE	2.94	1.900 EUE/ 1.900 NUE	1.50	3/4 NPT = 0.82 AND 3/8 NPT = 0.50	94875-BAE-BBA-3

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



HYDROSET IV PACKER

The **Hydroset IV Packer** is a hydraulic set single string retrievable packer. Tubing pump pressure is used to set the packer and the setting force is locked into the packer by a body lock ring. Its design allows for multiple zone completions. It can be run with other hydraulic packers or mechanical set packers.

This packer is ideal to run as a tandem packer with double grip packers that will lock the tubing in place. This packer is released with a straight pull to shear releasing screws.

This packer features a three element packing arrangement, a lock ring mechanism to lock in setting force, and field adjustable shear screws to allow adjustment of setting initiation and releasing force required to release the packer.

Special Features

- Simple operation
- Compact
- Field adjustable setting initiation pressure
- Field adjustable releasing force



Hydroset IV Packer Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connection Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	1.25	1.900 NUE	65435
4	9.5 - 11.0	3.476 - 3.548	3.250	1.75	2-3/8 EUE	65440
	12.95	3.340	3.187	1.75	2-3/8 EUE	65441
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	2.00	2-3/8 EUE	65445
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	2.00	2-3/8 EUE	65455
				2.38	2-7/8 EUE	65456
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	2.50	2-7/8 EUE	65467
				3.00	3-1/2 EUE	65468
	24.0 - 32.0	5.675 - 5.921	5.500	2.50	2-7/8 EUE	65465
				3.00	3-1/2 EUE	65466
7	17.0 - 26.0	6.276 - 6.538	6.000	2.50	2-7/8 EUE	65472
				3.00	3-1/2 EUE	65474
	20.0 - 29.0	6.184 - 6.456	5.938	2.50	2-7/8 EUE	65471
	26.0 - 32.0	6.094 - 6.276	5.875	2.50	2-7/8 EUE	65470
3.00				3-1/2 EUE	65473	
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	2.50	2-7/8 EUE	65475
				3.00	3-1/2 EUE	65478
	33.7 - 39.0	6.625 - 6.765	6.453	2.50	2-7/8 EUE	65476
				3.00	3-1/2 EUE	65477

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.
Rubber Trim Upgrade Options (additional cost, inquire with a D&L sales associate): HSN, Viton, ECNER/Aflas, ECNER/HSN, EPDM

Hydraulic Set Packers

HYDRAULIC OPEN HOLE PACKER

The **D&L Hydraulic Open Hole Packer** is a hydraulic set, single string packer suitable for use in open hole applications. Tubing pressure is used to set the packer and the setting force is locked into the packer by a body lock ring. This packer features a double backup element system that is capable of holding high pressures in open hole or large ID cased holes. A large ID is maintained through the packer for increased flow potential. It is ideal for use as a tandem isolation packer between ports in a multi-stage hydraulic fracturing completion.



Hydraulic Set Packers

Product Specifications

Packer Size (inches)	Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
7	5.875 - 6.600	5.750	3.92	4-1/2 LTC	33570-1
7-1/2	7.500 - 8.250	7.350	4.75	5-1/2 BTC	33575-1
8-1/2	8.000 - 9.000	7.780	4.75	5-1/2 BTC	33580-1
	8.500 - 8.750	8.000	4.75	5-1/2 BTC	33581-1

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

PERMANENT HYDRAULIC ISOLATION PACKER

The **Permanent Hydraulic Isolation Packer** is a robust production packer capable of handling large amounts of weight hung below the packer. This packer features a large ID for increased flow potential. This packer also has upper and lower centralizing slips which increases its ability to set in deviated sections of wells. This packer uses our proven Permapak components.

The setting equipment for the Permanent Hydraulic Isolation Packer is built into the packer. It requires pressurizing the tubing/casing it is run on once the packer reaches setting depth.

Special Features

- Adjustable setting initiation pressure
- Uses proven Permapak components



Hydraulic Set Packers

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Packer Bore (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
7	17.0 - 26.0	6.276 - 6.538	6.000	4.000	4-1/2 LTC	68570
					4-1/2 BTC	68570-XBLA
	23.0 - 32.0	6.094 - 6.366	5.875	4.000	4-1/2 LTC	68571
					4-1/2 BTC	68571-XBLA
7-5/8	24.0 - 39.0	6.625 - 7.025	6.250	4.000	4-1/2 LTC	68575
					4-1/2 BTC	68575-XBLA
9-5/8	36.0 - 53.5	8.535 - 8.921	8.125	5.000	5-1/2 LTC	68595-XBCC
				5.500	6-5/8 LTC	68595
				6.000	7" LTC	68595-XBCE

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Permanent Packers



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PERMAPAK PACKER - SINGLE BORE

The **Permapak Seal Bore Packer** can be used for single or multiple zone completions. It is designed for wells where high pressure/temperatures and corrosive fluids are present and it is available in a variety of elastomers and seal bore materials to meet a wide range of hostile downhole environments. This packer is recommended for injection stimulation and testing or can become a temporary bridge plug when used with our knock-out or pump-out bottom assembly (refer to Permapak Packer

Tubing and Accessories product sheet). The Permapak Seal Bore Packer comes with a complete line of tubing seal accessories and elastomers.

Special Features

- Electric line, hydraulic or mechanical set
- Components keyed for milling
- Anti-extrusion rings expand to casing ID to prevent rubber extrusion
- Full circle slips allow for faster run time



Product Specifications - Single Bore

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Packer Bore (inches)	Min ID Thru Seals (inches)	Part Number
Size (inches)	Weight (lbs/ft)					
3-1/2	7.7 - 10.2	2.922 - 3.068	2.750	1.750	1.187	67235
4	9.5 - 11.6	3.428 - 3.548	3.281	1.750	1.187	67240
	11.6 - 14.8	3.240 - 3.428	3.090	1.750	1.187	67241
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	2.500	1.910	67045
				2.688	1.938	67245
	15.1	3.826	3.600	2.500	1.910	67246
5	15.0 - 21.4	4.126 - 4.408	3.968	2.500	1.910	67050
				2.688	1.938	67250
5-1/2	13.0 - 17.0	4.892 - 5.044	4.532	2.688	1.938	67055
				3.000	2.375	67255
	17.0 - 23.0	4.670 - 4.892	4.438	2.688	1.938	67056
				3.000	2.375	67256
	23.0 - 26.0	4.548 - 4.670	4.250	2.688	1.938	67057

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Permanent Packers

Permapak Single Bore Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Packer Bore (inches)	Min ID Thru Seals (inches)	Part Number
Size (inches)	Weight (lbs/ft)					
6	18.0 - 26.0	5.132 - 5.424	4.875	3.000	2.375	67260
6-5/8	17.0 - 32.0	5.675 - 6.135	5.468	3.250	2.416	67065
7	17.0 - 23.0	6.366 - 6.538	6.000	3.250	2.416	67070
				4.000	3.000	67270
	23.0 - 32.0	6.094 - 6.366	5.813	3.250	2.416	67071
				4.000	3.000	67271
	32.0 - 38.0	5.920 - 6.094	5.625	3.250	2.416	67072
				4.000	3.000	67272
7-5/8	24.0 - 39.0	6.625 - 7.025	6.250	3.250	2.416	67075
				4.000	3.000	67275
8-5/8	24.0 - 32.0	7.921 - 8.097	7.625	4.000	3.000	67085
				5.250	4.250	67286
9-5/8	36.0 - 53.5	8.535 - 8.921	8.125	3.250	2.416	67093
				4.000	3.000	67094
				4.750	3.500	67095
				6.000	4.750	67295
10-3/4	40.5 - 55.5	9.760 - 10.050	9.496	4.000	3.000	67010
			9.300	6.000	4.750	67210
	45.5 - 60.7	9.660 - 9.950	9.300	4.000	3.000	67010-9.3
11-3/4	42.0 - 65.0	10.682 - 11.084	10.430	6.000	4.750	67211
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	9.000	8.000	67213

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Permanent Packers

PERMAPAK PACKER - DUAL BORE

The **Dual Bore Permapak Packer** is a highly versatile packer which has a large upper sealbore to allow for a large bore through the packer. This packer may be set on wireline or hydraulically and can be used for single or multiple zone completions. This packer is designed for wells where high flow rates, high pressure, high temperatures and corrosive fluids are present. This packer is available in a variety of elastomers and seal bore materials to meet a wide range of hostile downhole environments. This packer is recommended for production, injection, stimulation and testing or can become a temporary plug when used with the Knock-Out or Pump-Out Bottom Assembly.

The Dual Bore Permapak Packer comes with a complete line of accessories and elastomers. Contact D&L sales for more information.

Special Features

- Large packer through bore
- Large seal mandrel through bore
- Proven Permapak Packer design



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Seal Bore		Min ID Thru Seals (inches)	Part Number
Size (inches)	Weight (lbs/ft)			Upper (inches)	Lower (inches)		
4	9.5 - 11.6	3.428 - 3.548	3.281	2.688	1.750	1.750	67340
	11.6 - 14.8	3.240 - 3.428	3.090	2.688	1.750	1.750	67341
5	15.0 - 21.0	4.154 - 4.408	3.968	3.000	2.688	2.375	67350
5-1/2	23.0 - 26.0	4.548 - 4.670	4.250	3.000	2.688	2.375	67357
7	23.0 - 32.0	6.094 - 6.366	5.813	4.750	4.000	3.500	67371
	26.0 - 29.0	6.184 - 6.276	5.900	5.250	4.375	4.250	67373
7-5/8	24.0 - 39.0	6.625 - 7.025	6.250	5.250	4.000	4.250	67375
9-5/8	36.0 - 53.5	8.535 - 8.921	8.125	7.000	6.000	4.750	67395

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Permanent Packers

HYDRAULIC PERMAPAK PACKER

The **Hydraulic Permapak Packer** is a hydraulic set seal bore packer and is the hydraulic set equivalent of the Permapak Seal Bore Packer. The full range of Permapak Seal Bore Accessories may be used with the Hydraulic Permapak.

Pressure sets the packer via a setting chamber built into the tool. Pressure enters the setting chamber via holes in the polished bore of this packer. These holes can be isolated with a ball-operated sub so other hydraulic operated tools can be functioned before setting the packer.

Special Features

- Uses proven Permapak components
- Compatible with Permapak options
- Optional upper sealbore available
- Single bore or dual bore option



Permanent Packers

Product Specifications - Single Bore

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Packer Bore (inches)	Min ID Thru Seals (inches)	Part Number
Size (inches)	Weight (lbs/ft)					
7	23.0 - 32.0	6.094 - 6.366	5.875	4.000	3.000	68371
	32.0 - 38.0	5.920 - 6.094	5.813	4.000	3.000	68372
9-5/8	36.0 - 53.5	8.535 - 8.921	8.125	4.750	3.500	68393
				5.000	4.750	68395

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

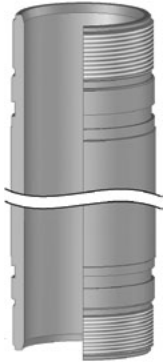
Product Specifications - Dual Bore

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Seal Bore		Min ID Thru Seals (inches)	Part Number
Size (inches)	Weight (lbs/ft)			Upper (inches)	Lower (inches)		
7	17.0 - 23.0	6.366 - 6.538	6.000	5.250	4.000	4.000	68170
	23.0 - 32.0	6.094 - 6.366	5.875	5.250	4.000	4.000	68171
9-5/8	36.0 - 53.5	8.535 - 8.921	8.250	7.500	6.000	6.000	68195

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



PERMAPAK ACCESSORIES



Seal Bore Extension

A **Seal Bore Extension** is used in installations where floating seals are required due to tubing contractions. This packer accessory allows for a continuous seal bore and is available in lengths up to twenty feet.



Seal Bore to Mill-Out Coupling

A **Seal Bore to Mill-Out Coupling** is used to connect mill-out extensions to seal bore extensions.



Concentric Bottom

A **Concentric Bottom** is used to connect a seal bore extension to a packer.



Knock-Out Plug Bottom

When a **Knock-Out Bottom** is run below the packer, the knock-out plug allows a packer to serve as a bridge plug holding pressure from above and below.



Knock-Out Plug

A **Knock-Out Plug** is knocked out when the production string is landed.



Mill-Out Extension

A **Mill-Out Extension** is used in installations where floating seals are required due to tubing contractions. In addition, this packer accessory provides a larger ID between a packer bore and a seal bore extension allowing a packer plucker when a packer is milled out.



Pump Out Plug

A **Pump-Out Plug** is available with a choice of threads allowing the pump-out plug to be attached to a packer, seal bore extension, mill-out extension or tailpipe and hold pressure from below after the packer is set. Once the production string is landed, pressure is applied to the tubing and the pump-out plug is removed to allow full opening.



Mill-Out Bottom

A **Mill-Out Bottom** is used to connect a mill-out extension to a packer.



Concentric Coupling

A **Concentric Coupling** is used to connect seal bore extensions to increase length.



Wireline Re-Entry Bottom

A **Wireline Re-Entry Bottom** is used as the packer bottom when an extension below a packer is not required.

Permanent Packers

PERMAPAK ACCESSORIES



Anchor Latch Assembly

The **Anchor Latch Seal Assembly** is used when floating seals are not required. This assembly allows the tubing string to be in tension or compression. Upon set down the anchor latches into the packer and can be removed with eight to ten right-hand turns.



Snap Latch Assembly

The **Snap Latch Seal Assembly** latches into the packer upon set down (like our Anchor Latch Seal Assembly). It can be removed with straight pull of 10,000 to 12,000 lbs. above tubing weight. The Snap Latch Seal Assembly is used where a mechanical indication is required to verify the seal assembly is properly positioned in the packer bore.



Seal Unit

The standard **Seal Unit** is furnished with bonded nitrile rings and a 12-inch make-up length. These units may be ordered in various lengths and with severe service seal rings for high temperature and corrosive environmental conditions.



Locator Seal Assembly

The **Locator Seal Assembly** is used in installations which require floating seals. Once landed, the seal locator prevents downward movement of the tubing while allowing the seal to move with tubing contraction.



Half Mule Shoe Guide

The **Half Mule Shoe Guide** is standard with the Seal Assembly to allow for easy entry into the packer bore.

Permanent Packers

WIRELINER ADAPTER KIT – FOR PERMAPAK PACKER

The **Wireline Adapter Kit (WLAK) – for Permapak Packer** is designed to set Permapak Seal Bore Packers with industry standard wireline pressure setting assemblies or comparable equipment.

This setting equipment can also be used with hydraulic setting tools that are configured like the standard setting tool. The setting equipment is designed so the outer sleeve can be adjusted to provide a proper make up to the packer.



Product Specifications

Setting Tool Size	Setting Tool OD (inches)	External Threads	Internal Threads	Packer Sizes
05	1.718	1-1/4" UNS	5/8" UNF	2-3/8" 2-7/8" 3-1/2"
10	2.750	2-1/2" ACME	1" UNC	4" 4-1/2" 5"
20	3.800	3-1/2" STUB ACME	2" ACME	5-1/2" & LARGER

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Permanent Packers

Service Tools



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HD RETRIEVABLE PACKER

The **HD Retrievable Packer** is a heavy duty service packer ideally suited for all types of squeeze cementing, formation fracturing, high pressure acidizing, etc. It is a large opening compression set packer with hydraulic button-type hold down. This packer withstands high pressure from above or below and uses a 3-element packing system, J-slot, and a drag block mechanism for easy setting. This packer has a built-in unloader which circulates across the hold down buttons to improve retrievability and run in performance.

Special Features

- Large internal by-pass
- Built in pressure-balanced unloader
- 1/4 turn set-straight pick up release (standard)
- Equalizing ports directly above elements
- Additional J-slot arrangements available



Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	1.88	2-3/8 EUE	61345RS
	11.6 - 15.1	3.826 - 4.000	3.656	-	1.75	2-3/8 EUE	61346RS
5	11.5 - 15.0	4.408 - 4.560	4.125	-	1.88	2-3/8 EUE	61350RS
	18.0 - 21.0	4.154 - 4.276	3.969	-	1.88	2-3/8 EUE	61352RS
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	-	2.00	2-3/8 EUE	61357RS
	20.0 - 23.0	4.670 - 4.778	4.500	-	2.00	2-3/8 EUE	61356RS
5-3/4	15.0 - 16.1	5.076 - 5.115	5.000	-	2.00	2-3/8 EUE	61357XRS
	17.6 - 19.4	4.958 - 5.021	4.875	-	2.00	2-3/8 EUE	61357YRS
	21.5 - 24.0	4.784 - 4.879	4.720	-	2.00	2-3/8 EUE	61357ZRS
6	17.0 - 20.0	5.352 - 5.450	5.188	-	2.00	2-3/8 EUE	61360RS

¹ Maximum OD is across retracted drag blocks.

OPTIONS: RS (Right-Hand Auto Set, Straight Pick-Up Release), RM (Right-Hand Manual Set, Straight Pick-Up Release)

LS (Left-Hand Auto Set, Straight Pick-Up Release), LM (Left-Hand Manual Set, Straight Pick-Up Release)

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

HD Retrievable Packer Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
6-5/8	20.0 - 24.0	5.921 - 6.049	5.750	-	2.50	2-7/8 EUE	61367RS
	24.0 - 32.0	5.675 - 5.921	5.500	-	2.50	2-7/8 EUE	61365RS
	32.0 - 35.0	5.575 - 5.675	5.375	-	2.00	2-3/8 EUE	61366RS
	36.7 - 40.2	5.375 - 5.501	5.188	-	2.00	2-3/8 EUE	61360RS
7	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	2-7/8 EUE	61372RS
	26.0 - 32.0	6.094 - 6.276	5.875	-	2.50	2-7/8 EUE	61370RS
	29.0 - 35.0	6.004 - 6.184	5.812	5.874 ¹	2.50	2-7/8 EUE	61371RS
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	-	2.50	2-7/8 EUE	61375RS
	33.7 - 39.0	6.625 - 6.765	6.453	6.499 ¹	2.50	2-7/8 EUE	61376RS
8-5/8	20.0 - 28.0	8.017 - 8.191	7.750	-	3.00	3-1/2 EUE	61385RS
	24.0 - 40.0	7.725 - 8.097	7.500	7.504 ¹	3.00	3-1/2 EUE	61387RS
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	-	4.00	4-1/2 EUE	61396RS
	43.5 - 53.5	8.535 - 8.755	8.250	-	4.00	4-1/2 EUE	61395RS
10-3/4	32.75 - 45.5	9.950 - 10.192	9.700	-	4.00	4-1/2 EUE	61301RS
	51.0 - 65.7	9.560 - 9.850	9.312	9.375 ¹	4.00	4-1/2 EUE	61310RS
	65.7 - 91.2	9.032 - 9.560	8.813	-	4.00	4-1/2 EUE	61399RS
11-3/4	42.0 - 65.0	10.682 - 11.084	10.438	10.500 ¹	4.00	4-1/2 EUE	61311RS
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	-	4.00	4-1/2 EUE	61313RS
16	65.0 - 109.0	14.688 - 15.250	14.438	-	5.00	6-5/8 API FULL HOLE TOOL JOINT	61316
18	78.0 - 96.5	16.986 - 17.194	16.750	-	5.00	6-5/8 API FULL HOLE TOOL JOINT	61318X
18-5/8	87.5 - 117.5	17.439 - 17.755	17.000	-	5.00	6-5/8 API FULL HOLE TOOL JOINT	61318
20	133.0 - 169.0	18.376 - 18.730	18.000	-	5.00	6-5/8 API FULL HOLE TOOL JOINT	61320

¹ Maximum OD is across retracted drag blocks.

OPTIONS: RS (Right-Hand Auto Set, Straight Pick-Up Release), RM (Right-Hand Manual Set, Straight Pick-Up Release)

LS (Left-Hand Auto Set, Straight Pick-Up Release), LM (Left-Hand Manual Set, Straight Pick-Up Release)

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

AS RETRIEVABLE BRIDGE PLUG

The **AS Retrievable Bridge Plug** is a high pressure plug for multiple zone and selective single zone operations such as acidizing, fracturing, cementing and testing. It features a large internal by-pass to reduce swabbing when running and retrieving. The by-pass closes during the setting of the plug and opens prior to releasing the upper slips to equalize pressure when unsetting. The by-pass is located directly below the upper slips to help wash debris when the by-pass is open.

This tool can be set in tension or compression. It can be set shallow in unsupported casing to contain pressure while working on wellhead equipment. It can be set in tension making it ideal for setting shallow to test wellhead equipment and also deep, high-pressure wells.

The **ASW Retrievable Bridge Plug** is a version of the AS Retrievable Bridge Plug that allows the plug to be set on wireline

or with a hydraulic setting tool, and retrieved with tubing. It cannot be reset in the wellbore once it is unset, but it can be pulled, re-dressed and run again. A Wireline Adapter Kit is required for this version.

Special Features

- 1/4 right-hand set and release (standard)
- Large internal by-pass
- Set shallow or deep
- Pressure equalization before release
- High pressure rating
- Additional J-slot arrangements available
- AS Bridge Plug is set mechanically in tension or compression
- ASW Bridge Plug version can be set using wireline or hydraulic setting tool



Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Thread Connection Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)					Std	Wireline Set
3-1/2	7.7 - 10.2	2.922 - 3.068	2.781	-	1.900 EUE	72535RR	72435RR
4	9.5 - 11.0	3.476 - 3.548	3.250	-	1.900 EUE	72540RR	-
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	2-3/8 EUE	72545RR	72445RR
	15.1	3.826	3.656	-	2-3/8 EUE	72544RR	72444RR
	15.1 - 16.6	3.754 - 3.826	3.625	-	2-3/8 EUE	72541RR	72441RR

¹Maximum OD is across retracted drag blocks.

OPTIONS: RR (Right-Hand Set, Right-Hand Release), LR (Left-Hand Set, Right-Hand Release)

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

AS Retrieval Bridge Plug Product Specifications (continued)

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Thread Connection Pin Down	Part Number	
Size (inches)	Weight (lbs/ft)					Std	Wireline Set
5	11.5 - 15.0	4.408 - 4.560	4.125	4.215 ¹	2-3/8 EUE	72550RR	72450RR
	18.0 - 21.0	4.154 - 4.276	3.969	4.010 ¹	2-3/8 EUE	72552RR	72452RR
5-1/2	9.0 - 13.0	5.044 - 5.192	4.812	-	2-3/8 EUE	72554RR	72454RR
	13.0 - 20.0	4.778 - 5.044	4.625	-	2-3/8 EUE	72555RR	72455RR
	20.0 - 23.0	4.670 - 4.778	4.500	-	2-3/8 EUE	72557RR	72457RR
6	17.0 - 20.0	5.352 - 5.450	5.188	-	2-3/8 NUE	72560RR	72460RR
6-5/8	17.0 - 24.0	5.921 - 6.135	5.750	-	2-3/8 EUE	72567RR	72467RR
	24.0 - 32.0	5.675 - 5.921	5.500	-	2-3/8 EUE	72565RR	72465RR
	32.0 - 35.0	5.575 - 5.675	5.375	-	2-3/8 NUE	72566RR	72466RR
7	17.0 - 26.0	6.276 - 6.538	5.969	6.062 ¹	2-3/8 EUE	72570RR	72470RR
	26.0 - 32.0	6.094 - 6.276	5.875	-	2-3/8 EUE	72571RR	72471RR
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	6.687 ¹	2-3/8 EUE	72575RR	72475RR
	29.7 - 33.7	6.765 - 6.875	6.527	-	2-3/8 EUE	72576RR	72476RR
	33.7 - 39.0	6.625 - 6.765	6.453	6.499 ¹	2-3/8 EUE	72577RR	72477RR
8-5/8	20.0 - 28.0	8.017 - 8.191	7.750	-	3-1/2 EUE	72581RR	72481RR
	24.0 - 40.0	7.725 - 8.097	7.500	-	3-1/2 EUE	72585RR	72485RR
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	-	3-1/2 EUE	72596RR	72496RR
	43.5 - 53.5	8.535 - 8.755	8.250	-	3-1/2 EUE	72595RR	72495RR
10-3/4	32.75 - 51.0	9.850 - 10.192	9.625	-	3-1/2 EUE	72501RR	72401RR
	51.0 - 65.7	9.560 - 9.850	9.312	9.374 ¹	3-1/2 EUE	72510RR	72410RR
11-3/4	42.0 - 71.0	10.586 - 11.084	10.375	10.500 ¹	3-1/2 EUE	72511RR	72411RR
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	-	3-1/2 EUE	72513RR	72413RR
14	82.5 - 101.5	12.600 - 12.876	12.438	12.500 ¹	3-1/2 EUE	72514RR	72414RR
16	65.0 - 109.0	14.688 - 15.250	14.438	-	4-1/2 IF TOOL JOINT	72516RR	-
18-5/8	87.5 - 117.5	17.439 - 17.755	17.000	-	4-1/2 IF TOOL JOINT	72518RR-X-BEE	-
20	133.0 - 169.0	18.376 - 18.730	18.000	-	4-1/2 IF TOOL JOINT	72520RR-X-BEE	-

¹Maximum OD is across retracted drag blocks.

OPTIONS: RR (Right-Hand Set, Right-Hand Release), LR (Left-Hand Set, Right-Hand Release)

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

SPRING LOADED RETRIEVING TOOL

The **Spring Loaded Retrieving Tool** is used to run and retrieve the AS Retrievable Bridge Plug.

Special Features

- › Mill-toothed shoe
- › Sturdy design
- › Left-hand release standard
- › Straight set down to re-attach
- › Right-hand release available

Product Specifications

Size (inches)	Tool OD (inches)	Thread Connections Box Up	Part Number
3-1/2	2.750	1.900 EUE	57735
4	3.125	1.900 EUE	57740
4-1/2	3.625	2-3/8 EUE	57741
	3.656	2-3/8 EUE	57744
	3.750	2-3/8 EUE	57745
5	4.125	2-3/8 EUE	57750
	4.000	2-3/8 EUE	57752
5-1/2	4.500	2-3/8 EUE	57755
		2-7/8 EUE	57756
6	5.000	2-3/8 EUE	57760
6-5/8	5.437	2-7/8 EUE	57765
7	5.875	2-7/8 EUE	57770
7-5/8	6.375	2-7/8 EUE	57775
8-5/8	7.500	3-1/2 EUE	57785
9-5/8	8.250	3-1/2 EUE	57795
		4-1/2 EUE	57796
10-3/4	9.312	2-7/8 EUE	57701
		3-1/2 EUE	57710
11-3/4	10.370	4-1/2 EUE	57711
13-3/8	11.750	4-1/2 EUE	57713
14	12.000	4-1/2 IF TOOL JOINT	57714
16	14.000	4-1/2 IF TOOL JOINT	57716-XBEE
18-5/8	16.750	4-1/2 IF TOOL JOINT	57718-XBEE
20	17.500	4-1/2 IF TOOL JOINT	57720-XBEE

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Service Tools

WIRELINER ADAPTER KIT - FOR ASW RETRIEVABLE BRIDGE PLUG

The **Wireline Adapter Kit (WLAK)** for the **ASW Retrievable Bridge Plug** is used to set the ASW Retrievable Bridge Plug on electric wireline or with a hydraulic setting assembly on tubing. This WLAK is designed to be used on a Baker E-4 wireline powder charge, a hydraulic setting assembly, or any setting assembly with the same configuration.

The WLAK automatically disconnects from the AS Bridge Plug during packer setting to be easily retrieved and prepared to run again.



Product Specifications

Size (inches)	Tool OD (inches)	Wireline Setting Tool Box Up	Part Number
3-1/2	2.750	BAKER E-4, #05	72335
4-1/2	3.750	BAKER E-4, #10	72345
	3.620	BAKER E-4, #10	72341
	3.650	BAKER E-4, #10	72344
5-1/2	4.500	BAKER E-4, #20	72355WLAK
6-5/8	5.440	BAKER E-4, #20	72365
7	5.875	BAKER E-4, #20	72370
8-5/8 - 14	6.000	BAKER E-4, #20	72385

NOTE: Other sizes and connections available upon request.

Service Tools

TYPE T SQUEEZE PACKER

The **Type T Squeeze Packer** is a versatile, easy to use tension set tool which holds differential pressure from above or below. This packer is designed to run, set, reset and retrieve easily, even under adverse conditions. This packer can be set at any depth and is used when insufficient weight is available to set a compression packer. This packer is ideal for squeeze cementing, casing testing, stimulation treatments and straddle operations using a retrievable bridge plug.

An SC Tension Unloader is generally run above this packer allowing pressure equalization before release. The SC Tension Unloader also provides a by-pass when running and retrieving to minimize swabbing of the elements.

This packer features a full bore that minimizes the potential for screening out during fracturing, does not restrict the flow rates and allows the use of through-tubing tools without pulling the packer.

This packer also features an emergency release system that uses a high-ratio left-hand thread. Applying right-hand rotation of the tubing relaxes the packing elements and moves the lower cone well away from the slips allowing the slips to fully retract.

Special Features

- Holds pressure from above or below
- Safety release allows circulation around the slips
- Full opening
- Optional setting configuration
- Bi-directional slips



Type T Squeeze Packer Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
2-7/8	6.4 - 6.5	2.375 - 2.441	2.250	-	0.75	1.660 EUE	62125RM
4	9.5 - 11.0	3.476 - 3.548	3.250	-	1.63	2-3/8 EUE	62140RM
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	2.00	2-3/8 EUE	62145RM
	15.1 - 16.9	3.740 - 3.826	3.594	-	1.63	2-3/8 EUE	62143RM
5	13.0 - 18.0	4.276 - 4.494	4.125	-	2.00	2-3/8 EUE	62150RM
	18.0 - 20.8	4.156 - 4.276	4.000	-	2.00	2-3/8 EUE	62152RM
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	-	2.00	2-3/8 EUE	62155RM
	20.0 - 23.0	4.670 - 4.778	4.500	-	2.00	2-3/8 EUE	62157RM
6	14.0 - 20.0	5.352 - 5.552	5.188	-	2.00	2-3/8 EUE	62160RM
6-5/8	24.0 - 28.0	5.791 - 5.921	5.625	-	2.50	2-7/8 EUE	62165RM
7	17.0 - 26.0	6.276 - 6.538	6.000	6.057 ¹	2.50	2-7/8 EUE	62171RM
	26.0 - 32.0	6.094 - 6.276	5.875	-	2.50	2-7/8 EUE	62170RM
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	-	2.50	2-7/8 EUE	62175RM
	33.7 - 39.0	6.625 - 6.765	6.453	-	2.50	2-7/8 EUE	62177RM
8-5/8	20.0 - 28.0	8.017 - 8.191	7.750	-	3.00	3-1/2 EUE	62186RM
	28.0 - 40.0	7.725 - 8.097	7.500	-	3.00	3-1/2 EUE	62185RM
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	-	3.00	3-1/2 EUE	62195RM
	43.5 - 53.5	8.535 - 8.755	8.250	-	3.00	3-1/2 EUE	62196RM
10-3/4	32.75 - 55.5	9.760 - 10.192	9.500	-	4.00	4-1/2 EUE	62110RM
	60.7 - 85.3	9.156 - 9.660	9.000	-	4.00	4-1/2 EUE	62110XRM
13-3/8	48.0 - 77.0	12.275 - 12.715	12.000	-	4.00	4-1/2 EUE	62113RM

¹Maximum OD is across retracted drag blocks.

OPTIONS: RS (Right-Hand Set w/Automatic J-Slot), RM (Right-Hand Set w/Manual J-Slot),

LS (Left-Hand Set w/Automatic J-Slot), LM (Left-Hand Set w/Manual J-Slot)

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

SC TENSION UNLOADER

The **SC Tension Unloader** provides a means of equalizing tubing and annulus pressures when used with a tension packer. It also serves as a by-pass to allow fluid to pass through the mandrel of the packer while running the tubing string in and out of the well.

Special Features

- Apply set-down weight to open, and tension to close
- Unloads pressure from either direction
- May be run in open or closed position
- Bonded seal allows repeated opening
- Transmits torque for packer operations



Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
7/8	2.250	0.88	1.660 EUE	52504
1-5/8	3.250	1.63	2-3/8 EUE	52506
2-3/8	3.750	2.00	2-3/8 EUE	52520
2-7/8	4.500	2.50	2-7/8 EUE	52525
3-1/2	5.250	3.00	3-1/2 EUE	52535
4-1/2	6.250	4.00	4-1/2 EUE	52545

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

DA-II UNLOADER

The **DA-II Unloader** is designed as a high-pressure accessory for compression set packers. This unloader is run above the packer in the open position. After the packer is run to setting depth, the procedures required to set the packer will automatically close the unloader. The J-slot locks in both the open and closed positions. With the packer set and the unloader closed, well operations may proceed.

When run above a compression set packer, this unloader is opened by rotating the tubing 1/4 turn and picking up (standard is right-hand close, right-hand open). After opening the unloader, allow differential pressure to equalize before releasing the packer below.

Special Features

- Standard J-slot locks in open and closed positions
- Standard J-slot is right-hand close, right-hand open
- J-slot is available in various configurations



Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
4-1/2	3.750	2.00	2-3/8 EUE	53145
5-1/2	4.500	2.50	2-7/8 EUE	53155
7	5.500	3.00	3-1/2 EUE	52873

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

TYPE C PERFORATION WASH TOOL

The **Type C Perforation Wash Tool** is for washing or acidizing perforations in casing and sand screens. It is also used for checking non-perforations, to verify injection rates and penetration, or for opening voids behind the casing for more effective gravel pack operations. The straddle interval is easily field converted from one foot (1ft) to any distance by simply adding tubing above the bottom cups.

Special Features

- Straddle-spacing easily adjusted in the field
- Reverse circulate without manipulation
- No ball and seat required

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)				
3-1/2	9.2 - 10.2*	2.922 - 2.992	2.810	1.900 NUE	46035
4	9.5 - 13.4*	3.340 - 3.548	3.250	1.900 NUE	46040
4-1/2	9.5 - 11.6	4.000 - 4.090	3.690	1.900 NUE	46045
5	13.0 - 15.0	4.408 - 4.494	4.000	1.900 NUE	46050
	18.0 - 20.3	4.184 - 4.276	4.000	1.900 NUE	46051
5-1/2	13.0 - 20.0	4.778 - 5.044	4.625	2-7/8 EUE	46055
6-5/8	20.0 - 24.0	5.921 - 6.049	5.750	3-1/2 EUE / 4-1/2 STC	46065
7	20.0 - 29.0	6.184 - 6.456	6.000	3-1/2 EUE	46070
9-5/8	29.3 - 53.5*	8.535 - 9.063	8.450	3-1/2 EUE	46095
10-3/4	40.5 - 55.5*	9.760 - 10.050	9.710	3-1/2 EUE	46010

* May require cup change.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



STRADASNAP PACKER

The **Stradasnap Packer** consists of a modified Snapset II Packer combined with an AS-III Packer. A Stradasnap Packer is used for selectively treating short intervals of casing perforations to evenly break down the entire formation. The span covered is determined by the spacing between the two sets of packing elements and is adjustable to any distance down to eighteen inches.

The bottom of the Stradasnap Packer is plugged by using an Equalizing Standing Valve (or similar device). A Spot Control Valve or Acid Valve can be run above the Stradasnap Packer to control the tubing hydrostatic pressure across the perforations and contain the acid in the tubing when moving the packer to another perforation.

After locating the Stradasnap Packer across the lower most perforation, the Stradasnap Packer is set and the perforation is treated. Straight pick-up of the tubing releases the Stradasnap Packer to be moved up to the next perforation. Repeat the setting procedure to reset. When retrieving the Stradasnap Packer, retrieve the Spot Control Valve or Acid Valve so that tubing fluid can be dumped through the ports between the packing elements to prevent pulling a wet string.

Special Features

- Combination of existing packers
- Straight pull release
- Adjustable spacing with pup joint

Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
4-1/2	9.5 - 13.5	3.920 - 4.090	3.750	-	1.94	2-3/8 EUE	64545
5	11.5 - 15.0	4.408 - 4.560	4.125	4.220 ¹	1.94	2-3/8 EUE	64550
	18.0 - 21.0	4.154 - 4.276	4.000	-	1.94	2-3/8 EUE	64552
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	-	1.94	2-3/8 EUE	64555
				-	2.38	2-7/8 EUE	64556
6-5/8	24.0 - 32.0	5.675 - 5.921	5.500	-	2.50	2-7/8 EUE	64565
7	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	2-7/8 EUE	64572
				-	2.50	2-7/8 EUE	64570
	26.0 - 32.0	6.094 - 6.276	5.875	-	3.00	3-1/2 EUE	64573
9-5/8	43.5 - 53.5	8.535 - 8.755	8.250	-	4.00	4-1/2 EUE	64595

¹ Maximum OD is across retracted drag blocks.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Service Tools

HD ABANDONMENT PACKER

The **HD Abandonment Packer** is a heavy duty service packer ideally suited for all types of squeeze cementing, formation fracturing, high pressure acidizing, etc. This packer is a large opening compression set packer with hydraulic button-type hold down. This packer withstands high pressure from above or below and uses a 3-element packing system, J-slot, and a drag block mechanism for easy setting. This packer

has a built-in unloader which circulates across the hold down buttons to improve retrievability and run in performance

Special Features

- Heavy duty mandrels for high load capacity
- Extra lower slips to distribute hanging load

Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
6-5/8	24.0 - 32.0	5.675 - 5.921	5.500	-	2.50	3-1/2 IF TOOL JOINT	61565-XBEC
7	17.0 - 26.0	6.276 - 6.538	6.000	6.062 ¹	2.50	3-1/2 IF TOOL JOINT	61572-XBEC
	26.0 - 32.0	6.094 - 6.276	5.875	-	2.50	3-1/2 IF TOOL JOINT	61570-XBEC
7-5/8	33.7 - 39.0	6.625 - 6.765	6.453	6.500 ¹	2.50	3-1/2 IF TOOL JOINT	61576RS-XBEC
9-5/8	32.3 - 43.5	8.755 - 9.001	8.500	-	3.50	4-1/2 EUE	61596HD
						4-1/2 IF TOOL JOINT	61596-XBEE
	43.5 - 53.5	8.535 - 8.755	8.250	-	3.50	4-1/2 EUE	61595HD
						4-1/2 IF TOOL JOINT	61595-XBEE
10-3/4	32.75 - 45.5	9.950 - 10.192	9.700	-	3.50	4-1/2 IF TOOL JOINT	61501-XBEE
	51.0 - 65.7	9.560 - 9.850	9.312	9.374 ¹	3.50	4-1/2 IF TOOL JOINT	61510-XBEE
	65.7 - 91.2	9.032 - 9.560	8.813	-	3.50	4-1/2 IF TOOL JOINT	61599-XBEE
11-3/4	42.0 - 65.0	10.682 - 11.084	10.438	10.500 ¹	3.50	4-1/2 IF TOOL JOINT	61511-XBEE
13-3/8	54.5 - 77.0	12.275 - 12.615	12.000	-	3.50	4-1/2 EUE	61513HD
						4-1/2 EUE	61513HD-YBAG
						4-1/2 IF TOOL JOINT	61513LS-XBEE
						4-1/2 IF TOOL JOINT	61513-XBEE

¹ Maximum OD is across retracted drag blocks.

OPTIONS: LM (Left-Hand Manual), LS (Left-Hand Auto), RM (Right-Hand Manual), RS (Right-Hand Auto)

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



ABANDONMENT VALVE

The **Abandonment Valve** provides a means for temporarily abandoning a well without tripping out a workstring. This valve is run in conjunction with a heavy duty service packer. The Abandonment Valve and packer are designed to allow heavy loads to hang through them and thus allowing a workstring to hang below during abandonment. The most common use of the Abandonment Valve and packer combination is offshore for storm abandonment, but can also be used for working on BOP's during drilling without tripping the drill string out.

This valve uses a colleted sliding valve (lower collet) that is opened and closed by the disconnect and reconnect operations. The valve is designed so that the flow slots in the valve line up with the flow slots in the valve case to allow for higher rates of circulation without damaging the valve.

This valve uses a colleted latch that has a left-hand buttress thread allowing easy insertion of the latch while providing a strong connection. The colleted latch is supported during loading to ensure the latch threads stay completely engaged. All external threads are locked with set screws to ensure against backing off during packer setting.

Special Features

- Right-hand release
- Straight set down re-attachment
- 2.75" ID with Pump-Out Plug removed
- Screw-on casing centralizer ring



Product Specifications

Size (inches)	Tool OD (inches)	Thread Connections Box Up / Pin Down	Part Number
3-5/8	3.600*	2-3/8 IF TOOL JOINT	61736
5-1/8	5.125*	3-1/2 IF TOOL JOINT	61751
6-1/4	6.250*	4-1/2 IF TOOL JOINT	61762

* OD of centralizer ring is larger than the basic tool OD.
 NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Centralizer Sizes

Casing Size (inches)	Centralizer OD (inches)
7	5.75
9-5/8	8.13
10-3/4	9.25
11-3/4	10.25
13-3/8	11.63
14	11.63

Service Tools

BALL ABANDONMENT VALVE

The **Ball Abandonment Valve** provides a means for temporarily abandoning a well without tripping out a workstring. The valve is run in conjunction with a heavy duty service packer. The Ball Abandonment Valve and Packer are designed to allow heavy loads to hang through them and thus allowing a workstring to hang below during abandonment. The most common use of the Ball Abandonment Valve and Packer combination is offshore for storm abandonment, but can also be used for working on BOP's during drilling without tripping the drill string out.

The Ball Abandonment Valve uses a ball valve that is opened and closed by raising and lowering the workstring. The ball valve is designed to allow full movement

through the workstring and allows for higher rates of circulation without damaging the valve.

The Ball Abandonment Valve uses a colleted latch that has a left-hand buttress thread that allows easy insertion of the latch while providing a strong connection. The colleted latch is supported during loading to ensure the latch threads stay completely engaged. All external threads are locked with set screws to ensure against backing off during packer setting.

Special Features

- Full opening through ball valve
- Right-hand release, straight set down to re-attach



Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
6-1/4	6.500*	2.70	4-1/2 IF TOOL JOINT	62262

* OD of centralizer ring is larger than the basic tool OD.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Centralizer Sizes

Casing Size (inches)	Centralizer OD (inches)
9-5/8	8.13
10-3/4	9.25
11-3/4	10.25
13-3/8	11.63

ABANDONMENT PACKER ACCESSORIES

D&L has accessories available to run in conjunction with the Abandonment Packer: a High Load Swivel and a Plug Catcher.

The **High Load Swivel** allows an Abandonment Packer (ASI-X Design) to be unset with pipe weight hanging below. This swivel can be rotated with up to 80,000 lbs. hanging through it.

The **Pump-Out Plug Catcher** is designed to catch the Pump-Out Plug in the Abandonment Valve while maintaining a large flow area around the plug.



High Load Swivel

Product Specifications

Tool Description	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
High Load Swivel	6.250	3.00	4-1/2 IF TOOL JOINT	61662
Plug Catcher	6.500	1.75	4-1/2 IF TOOL JOINT	61663

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Plug Catcher

Service Tools

MODEL “H” HYDRAULIC SETTING TOOL

The **Model “H” Hydraulic Setting Assembly (HST)** is a hydraulic setting tool designed for setting packers and plugs without pipe manipulations. It is used to set packers and plugs that are normally set with a Model “E-4” Wireline Pressure Setting Assembly (or similar wireline setting equipment). The same adapter kit that is used on wireline can be used with the Model “H” HST.

The Model “H” HST and packer (or plug) is run in on the tubing to the desired setting depth and a ball is dropped to the HST. Pressure is applied to close the fill ports, which also opens the setting pistons to pressure. As pressure is applied, force is transmitted to the packer (or plug) to set. Tubing tension can also be applied to supplement the setting force generated by the pressure applied.

The standard setting tool comes with three pistons, but additional pistons can be added to reduce setting pressure.

Special Features

- Large internal by-pass
- Tubing fills automatically as HST is run in the hole
- Premature setting is prevented by means of a shear screw in the cross link sleeve
- Ported top sub permits circulation through the HST
- Use existing wireline adapter kits



Product Specifications

Size (inches)	Tool Max PSI	Max Pull (lbs)	Tool OD (inches)	Total Effective Piston Area (in ²)	Connection		Part Number
					Top	Bottom (Baker E-4)	
#05	10,000	31,000	1.718	1.49	1.315 EUE	SIZE 05	39105
#10	10,000	75,000	2.750	3.44	1.900 EUE	SIZE 10	39110-3
				6.88	1.900 NUE	SIZE 10	39110
#20	6,000	120,000	3.81	13.980	2-3/8 EUE	SIZE 20	39120-2
	4,000	120,000	3.81	20.940	2-3/8 EUE	SIZE 20	39120-3

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

LC HYDRAULIC SETTING TOOL

The **LC Hydraulic Setting Tool (HST)** is used to set packers and plugs on tubing that are normally set on wireline. This allows setting in high-angle wells or deviated wells where it is difficult to use wireline equipment. The LC HST allows for packers and plugs to be set with a combination of hydraulic and mechanical forces. This can reduce the setting pressure needed by supplementing the set with tubing tension. A single size LC HST may be used to set a multitude of packer sizes by simply attaching the proper size LC Hydraulic Adapter Kit.

Special Features

- Heavy-duty design
- Multiple setting chambers for lower setting pressures
- Operable in heavy mud systems
- Can be equipped to operate in high temperatures
- Circulation through the tool during run in



Product Specifications

Tool	Setting Area (in ² /Cylinder)	Tool OD (inches)	Tool ID (inches)	Thread Connection Box Up / Pin Down	Part Number
LC-15	4.70	3.718	1.50	2-7/8 EUE	39415
LC-20	4.60	4.375	2.00	3-1/2 IF TOOL JOINT	39420
LC-20HD	4.60	4.375	1.75	3-1/2 IF TOOL JOINT	39420HD

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

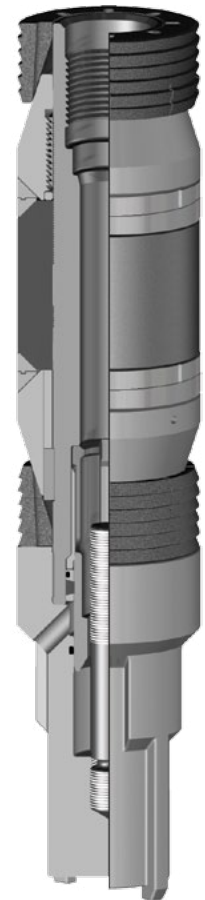
Service Tools

CEMENT RETAINER

The **Cement Retainer** is a drillable packer that provides the end user with a tool that will consistently contain well pressures at elevated temperatures and pressures. This tool is designed to be used for remedial cementing operations and light service applications. This tool permits faster removal from the well with either rotary or cable tool methods due to its compact size and the selection of high quality construction materials.

Special Features

- Surface controlled valve
- Allows pressure testing before squeeze
- Valve automatically closes when the stinger is removed, locking in the squeeze pressure
- Valve protects sensitive zones in low fluid wells
- Simple conversion to bridge plug
- Mechanical or wireline set available
- Components rotationally locked for easy drillout



Wireline Set
Cement Retainer



Mechanical
Slip Kit

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Part Number
Size (inches)	Weight (lbs/ft)			
4-1/2	9.5 - 15.1	3.826 - 4.090	3.612	84045
5	11.5 - 18.0	4.276 - 4.560	3.937	84050
5-1/2	13.0 - 23.0	4.670 - 5.044	4.315	84055
6-5/8	17.0 - 32.0	5.675 - 6.135	5.375	84065
7	17.0 - 35.0	6.004 - 6.538	5.680	84070
7-5/8	20.0 - 39.0	6.625 - 7.125	6.313	84075
8-5/8	24.0 - 52.0	7.435 - 8.097	6.897	84085
9-5/8	29.3 - 58.4	8.435 - 9.063	8.125	84095
10-3/4	32.75 - 60.7	9.660 - 10.192	9.437	84010
11-3/4	38.0 - 60.0	10.772 - 11.150	10.437	84011
13-3/8	48.0 - 72.0	12.347 - 12.715	12.000	84013
16	65.0 - 128.0	14.438 - 15.250	14.070	84016

OPTIONS: MS (Mechanical Set), WS (Wireline Set)

NOTE¹: Conversion Kits are available for converting either way.

NOTE²: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

CR BRIDGE PLUG

The **CR Bridge Plug** provides the end user with tools that will consistently contain well pressures at elevated temperatures and pressures. This plug permits faster removal from the well with either rotary or cable tool methods due to its compact size and the selection of high quality construction material.

The short, compact, interlocked construction assures the user that the CR Bridge Plug will provide faster, safer run-in, dependable set and pack-off and hold pressure that is safe for the casing weight and grade. The interlock construction and compact size requires minimal material removal during drill out. The outside diameter of these products has been held to a minimum to provide maximum tool-to-casing clearance for

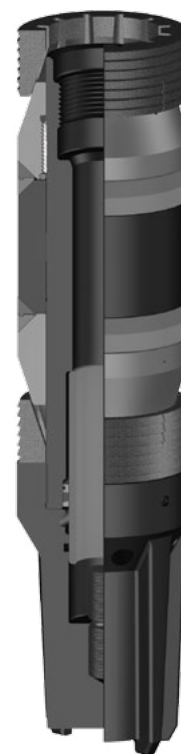
safe running and maximum fluid by-pass area during displacement procedures even in heavy mud systems.

A Wireline Adapter Kit (WLAK) and Hydraulic Setting Tool are used for setting CR Bridge Plugs.

NOTE: The CR Bridge Plug is designed to provide a temporary wellbore seal. For a permanent wellbore seal, cement must be set on top of the plug.

Special Features

- Convertible to Cement Retainer
- Sets on wireline or on tubing with mechanical setting tool



Wireline Set
 Cement Retainer



Mechanical
 Slip Kit

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Part Number
Size (inches)	Weight (lbs/ft)			
4-1/2	9.5 - 15.1	3.826 - 4.090	3.612	84245
5	11.5 - 18.0	4.276 - 4.560	3.937	84250
5-1/2	13.0 - 23.0	4.670 - 5.044	4.315	84255
6-5/8	17.0 - 32.0	5.675 - 6.135	5.375	84265
7	17.0 - 35.0	6.004 - 6.538	5.680	84270
7-5/8	20.0 - 39.0	6.625 - 7.125	6.313	84275
8-5/8	24.0 - 52.0	7.435 - 8.097	6.897	84285
9-5/8	29.3 - 58.4	8.435 - 9.063	8.125	84295
10-3/4	32.75 - 60.7	9.660 - 10.192	9.437	84210
11-3/4	38.0 - 60.0	10.772 - 11.150	10.437	84211
13-3/8	48.0 - 72.0	12.347 - 12.715	12.000	84213
16	65.0 - 128.0	14.438 - 15.250	14.070	84216

OPTIONS: MS (Mechanical Set), WS (Wireline Set)

NOTE¹: Conversion Kits are available for converting either way.

NOTE²: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

CIW BRIDGE PLUG

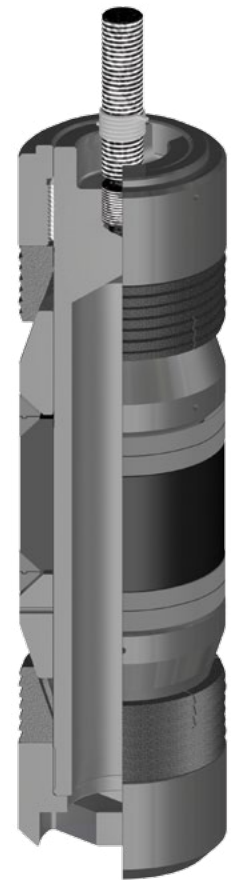
The **CIW Bridge Plug** is designed to have excellent running characteristics and secure sets. This plug can be set on different types of Wireline Pressure Setting Tools as well as with Hydraulic Setting Tools. This plug is designed for rapid drill-out while maintaining sufficient strength during the set. It is designed for high differential pressures and temperatures up to 250°F with standard Nitrile element and O-ring. Different elastomers are available for higher temperatures.

The short, compact, interlocked construction assures the CIW Bridge Plug will provide faster, safer run-in, dependable set and pack-off, and hold

pressure that is safe for the casing weight and grade. The interlock construction and compact size requires minimal material removal during drill out.

Special Features

- Electric, wireline or hydraulic set
- Drillable, cast iron construction
- One piece break-apart slips
- Rubber extrusion resisting backups on elements
- Sets with common setting sleeves
- Locking mechanism for ease in drilling multiple plugs



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Part Number
Size (inches)	Weight (lbs/ft)			
3-1/2	7.7 - 10.2	2.922 - 3.068	2.750	85035
4-1/2	9.5 - 15.1	3.826 - 4.090	3.613	85045
5-1/2	13.0 - 23.0	4.670 - 5.044	4.315	85055
7	17.0 - 35.0	6.004 - 6.538	5.680	85070
7-5/8	20.0 - 39.0	6.625 - 7.125	6.312	85075
8-5/8	24.0 - 52.0	7.435 - 8.097	7.125	85085
9-5/8	29.3 - 61.1	8.375 - 9.063	8.125	85095
10-3/4	32.75 - 60.7	9.660 - 10.192	9.437	85010
11-3/4	38.0 - 60.0	10.772 - 11.150	10.437	85011
13-3/8	48.0 - 72.0	12.347 - 12.715	12.000	85013
16	65.0 - 128.0	14.438 - 15.250	14.125	85016

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

WIRELINER ADAPTER KIT - FOR CEMENT RETAINER & CR BRIDGE PLUG

The **Wireline Adapter Kit (WLAK) for Cement Retainers and CR Bridge Plugs** is used to set Cement Retainers and CR Bridge Plugs on electric wireline or with a hydraulic setting assembly on tubing. The WLAK is designed to be used on a Baker E-4 wireline powder charge or hydraulic setting assembly or any setting assembly with the same configuration.

The WLAK automatically disconnects from the Bridge Plug during packer setting to be easily retrieved and prepared to run again.



Product Specifications

Size (inches)	Tool OD (inches)	Wireline Setting Tool Box Up	Part Number
4-1/2	3.500	BAKER E-4, #10	52345
5-1/2	4.000	BAKER E-4, #20	52355
7	5.688	BAKER E-4, #20	52370
9-5/8	8.125	BAKER E-4, #20	52395

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

WIRELINER ADAPTER KIT - FOR CIW BRIDGE PLUG

The **Wireline Adapter Kit (WLAK) for CIW Bridge Plugs** is used to set CIW Bridge Plugs on electric wireline or with a hydraulic setting assembly on tubing. The WLAK is designed to be used on a Baker E-4 wireline powder charge or hydraulic setting assembly, but can be used with any setting assembly with the same configuration.



Product Specifications

Size (inches)	Tool OD (inches)	Wireline Setting Tool Box Up	Part Number
3-1/2	2.600	BAKER E-4, #05	85535
4-1/2	3.500	BAKER E-4, #10	85545
5-1/2	4.240	BAKER E-4, #20	85555
7	5.250	BAKER E-4, #20	85570
8-5/8	6.750	BAKER E-4, #20	85585
9-5/8	7.750	BAKER E-4, #20	85595
10-3/4	8.750	BAKER E-4, #20	85510
11-3/4	10.200	BAKER E-4, #20	85511
13-3/8	11.000	BAKER E-4, #20	85513
16	13.500	BAKER E-4, #20	85516

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

DLT RETRIEVABLE PACKER

The **DLT Retrievable Packer** is a compression set packer with hydraulic hold down that is designed to provide an extra measure of dependability for rugged service. The hydraulic actuated upper hold-down provides more than the usual surface area to ensure that the packer will not move up the hole. It is ideally suited for high pressure, high temperature service work.

Some unique features of this packer include positive rotational locks on all internal connections, which allow for extreme values of torque (left-hand or right-hand) to be transmitted through the packer. Backup rings on all the o-rings provide for more reliable sealing at high temperature and pressure.

This packer also comes with extra-long top and bottom subs which allow for hydraulic tong make-up and break out.

Special Features

- ▶ Hydraulic actuated upper hold down slips
- ▶ Positive rotational locks on all internal connections
- ▶ Backup rings on all o-rings provide for more reliable sealing at high temperatures and high pressures
- ▶ Available with extra-long top and bottom subs allowing hydraulic tong make-up and break out



Product Specifications

Casing		Recommended Hole Size (inches)	Gage OD (inches)	Max OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)						
7	17.0 - 23.0	6.366 - 6.538	6.188	6.200 ¹	2.69	3-1/2 IF TOOL JOINT	68873A
	26.0 - 32.0	6.094 - 6.276	5.954	-	2.69	3-1/2 IF TOOL JOINT	68873B
	32.0 - 38.0	5.920 - 6.094	5.781	-	2.69	3-1/2 IF TOOL JOINT	68873C
	38.0 - 46.4	5.626 - 5.920	5.525	-	2.69	3-1/2 IF TOOL JOINT	68873D
7-5/8	24.0 - 29.7	6.875 - 7.025	6.672	-	2.69	3-1/2 IF TOOL JOINT	68875A
	33.7 - 39.0	6.625 - 6.765	6.453	-	2.69	3-1/2 IF TOOL JOINT	68875B
9-5/8	32.3 - 43.5	8.755 - 9.001	8.584	-	3.75	4-1/2 IF TOOL JOINT	68896
	43.5 - 53.5	8.535 - 8.755	8.365	-	3.75	4-1/2 IF TOOL JOINT	68895
	58.4 - 59.4	8.407 - 8.435	8.250	-	3.75	4-1/2 IF TOOL JOINT	68894
10-3/4	51.0 - 55.5	9.760 - 9.850	9.500	-	3.75	4-1/2 IF TOOL JOINT	68810A
	60.7 - 65.7	9.560 - 9.660	9.375	-	3.75	4-1/2 IF TOOL JOINT	68810B
	71.1 - 73.2	9.406 - 9.450	9.125	-	3.75	4-1/2 IF TOOL JOINT	68810C
11-3/4	42.0 - 54.0	10.880 - 11.084	10.625	-	3.75	4-1/2 IF TOOL JOINT	68811A
	60.0 - 71.0	10.586 - 10.772	10.406	-	3.75	4-1/2 IF TOOL JOINT	68811B
13-3/8	48.0 - 77.0	12.275 - 12.715	12.000	-	3.75	4-1/2 IF TOOL JOINT	68813
	80.7 - 92.0	12.031 - 12.215	11.750	-	3.75	4-1/2 IF TOOL JOINT	68813B
14	82.5 - 92.68	12.700 - 12.876	12.500	-	3.75	4-1/2 IF TOOL JOINT	68814A

¹ Maximum OD is across retracted drag blocks.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

V-III UNLOADER

The **V-III Unloader** is designed as a high-pressure accessory for the DLT Retrievable Packer designed to withstand severe operating conditions. This unloader provides a means of equalizing tubing and annulus pressures as well as a by-pass to allow fluid to pass through the mandrel of the packer while running the tubing string in and out of the well. Circulating can be established to spot fluids to the packer or circulating debris from the hole.

Special Features

- Standard slot locks in open and closed positions
- Standard slot is right-hand close, right-hand open
- Additional J-slot arrangements available

Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
3-1/2	5.500	2.69	3-1/2 IF TOOL JOINT	52735
4-1/2	7.250	3.75	4-1/2 IF TOOL JOINT	52745

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



STORM VALVE

The **Storm Valve** is designed to run above a compression set packer similar to the DLT Retrievable Packer. The Storm Valve allows the drill pipe or tubing close to the surface to be disconnected without tripping the entire string. It is designed to be used in situations where the rig must be abandoned quickly. It can also be used for changing surface equipment without tripping a drill string. And it will remain closed to provide a secure seal until the drill pipe or tubing is re-connected.

Special Features

- Rugged, field proven design
- Pump-out plug allows full access for wireline and circulation
- Automatic valve operation during disconnect and reconnect operations



Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
4-3/4	5.469	1.50	3-1/2 IF TOOL JOINT	68210
6-1/8	6.125	2.00	4-1/2 IF TOOL JOINT	68220

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

BUMPER SUB

The **Bumper Sub** is a heavy duty travel joint that is designed to transmit high torque. A hex-shaped mandrel is incorporated in the tool design providing a large contact surface which transmits the torque through the tool. Proven bonded seals are used to provide a seal across the full stroke of the bumper sub.

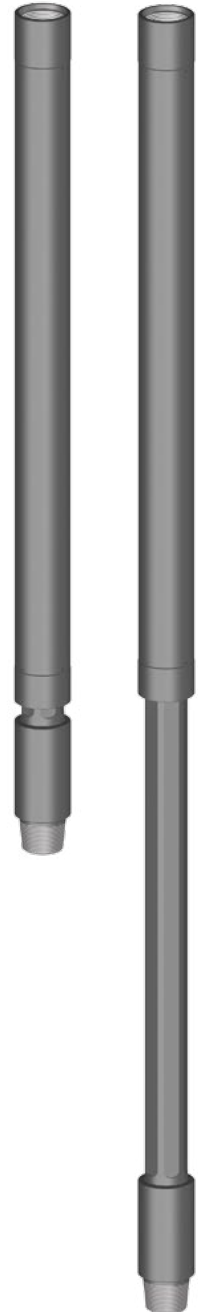
Special Features

- Heavy duty design
- Large contact surfaces to transmit high torque thru tool
- Bonded seals provide seal on full stroke
- Other extended lengths available

Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
3-1/2	4.750	2.50	3-1/2 IF TOOL JOINT	53335
4-1/2	6.250	3.75	4-1/2 IF TOOL JOINT	53345
	6.500	3.75	4-1/2 IF TOOL JOINT	53346

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



RR SAFETY JOINT

The **RR Safety Joint** is a means for backing off a workstring from tools below. Right-hand rotation and reciprocation is needed to back off the release mechanism. Shear screws hold the mandrel locked until a straight pull shears the screws. This insures the back-off mechanism does not operate until needed.

Special Features

- Shear release to eliminate premature back-off
- Heavy duty construction

Product Specifications

Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
2-3/8	3.250	1.88	2-3/8 EUE	57020
2-7/8	4.500	2.50	2-7/8 EUE	57025
3-1/2	5.250	2.69	3-1/2 IF TOOL JOINT	57035-BEC
4-1/2	6.250	3.75	4-1/2 IF TOOL JOINT	57045-BEE

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Service Tools

DL-CS ANCHOR

The **DL-CS Anchor** is used to anchor downhole equipment from rotating and/or moving up the hole. The anchor is designed to resist up to 12,000 Ft-lbs of torque with a unique cone and slip design while preventing movement up or down hole. It can be set in casing or open hole.

Special Features

- Heavy duty design
- Hex mandrel for torque transmission
- Adjustable shear set and release

Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Thread Connection Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)				
5-1/2	13.0 - 23.0	4.670 - 5.044	4.375	2-7/8 IF TOOL JOINT / 2-3/8 IF TOOL JOINT	32255
7	17.0 - 23.0	6.366 - 6.538	6.125	3-1/2 IF TOOL JOINT / NO THREAD	32272
	26.0 - 35.0	6.004 - 6.276	5.875	3-1/2 IF TOOL JOINT / NO THREAD	32270
7-5/8	24.0 - 39.0	6.625 - 7.025	6.375	3-1/2 IF TOOL JOINT / NO THREAD	32275
8-5/8	24.0 - 40.0	7.725 - 8.097	7.500	3-1/2 IF TOOL JOINT / NO THREAD	32285
				4-1/2 IF TOOL JOINT / NO THREAD	32285-XBEE

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



AXIAL INSTALLATION HD PACKER

The **Axial Installation (AI) HD Packer** is a heavy-duty service packer ideally suited for all types of squeeze cementing, formation fracturing, high pressure acidizing, etc. It is a large opening compression set packer with hydraulic button-type hold down. It is set and unset with simple up and down motion. This motion is controlled with a continuous J-slot so multiple settings are possible. This packer withstands high pressure from above or below and uses a 3-element packing system, J-slot, and a drag block mechanism for easy setting. The packer has a built-in unloader which circulates across the hold down buttons to improve retrievability and run in performance.

Special Features

- Heavy duty design
- No rotation at surface
- Built-in unloader



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
5-1/2	14.0 - 20.0	4.778 - 5.012	4.625	2.00	2-3/8 EUE	62557
	20.0 - 23.0	4.670 - 4.778	4.500	2.00	2-3/8 EUE	62556
6-5/8	24.0 - 32.0	5.675 - 5.921	5.500	2.50	2-7/8 EUE	62565

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Service Tools

WR BRIDGE PLUG

The **WR Bridge Plug** is a wireline set, wireline retrieve, packer-type bridge plug capable of holding differential pressure from above or below. The WR Bridge Plug is used as a temporary bridge plug for acidizing, fracturing, cementing, casing pressure tests, wellhead replacement, and zone isolation. The WR Bridge Plug utilizes standard wireline or hydraulic setting tools.

Special Features

- Wireline set/ wireline retrieve
- 10,000 psi differential pressure rating above and below the plug
- Bi-directional slips
- Equalization feature prevents premature release against differential pressure



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Top Connection	WLAK	Retrieving Tool	Part Number
Size (inches)	Weight (lbs/ft)						
3-1/2	7.7-10.2	2.922-3.068	2.700	5/8-18 UNF PIN	73535-05	73535RT	73535
4	9.5-11.0	3.476-3.548	3.250	5/8-18 UNF PIN	73535-05	73540RT	73540
	10.46-12.95	3.340-3.476	3.187	5/8-18 UNF PIN	73535-05	73540RT	73541
4-1/2	9.5-13.5	3.920-4.090	3.750	1,000-8 UNC PIN	73545-10	73545RT	73545
	13.5-15.1	3.826-3.920	3.650	1,000-8 UNC PIN	73545-10	73545RT	73544
	15.1-16.6	3.754-3.826	3.625	1,000-8 UNC PIN	73545-10	73545RT	73543
5	11.5-15.0	4.408-4.560	4.125	1,000-8 UNC PIN	73545-10	73545RT	73550
	18.0-21.0	4.154-4.276	3.969	1,000-8 UNC PIN	73545-10	73545RT	73552
5-1/2	13.0-20.0	4.778-5.044	4.625	7/8-14 UNF PIN	73557-20	73557RT	73555
	20.0-23.0	4.670-4.778	4.500	7/8-14 UNF PIN	73557-20	73557RT	73557
	23.0-26.0	4.548-4.670	4.406	7/8-14 UNF PIN	73554-20	73554RT	73554
7	17.0-26.0	6.276-6.538	5.969	7/8-14 UNF PIN	73570-20	73570RT	73570
	26.0-32.0	6.094-6.276	5.875	7/8-14 UNF PIN	73570-20	73570RT	73571

*73035 and 73040 are currently available as reduced pressure rated versions of 73535 and 73540 respectively. 73035 is rated to 6,000 psi below, and 73040 is rated to 4,500 psi below. 73535 and 73540 will both be rated to 10,000 psi above and below, when available.

Service Tools

QUARTER TURN ROD TUBING ANCHOR

The Quarter Turn Rod Tubing Anchor is a mechanically set, retrievable, tubing anchor designed to allow increased fluid bypass in the annulus. The anchor is suited for treating, testing, injecting, pumping wells, and flowing wells, deep or shallow. The slip design allows the anchor to be left in tension or compression, depending on well conditions and the required application. The J-slot design allows easy setting and releasing with 1/4 turn right-hand set, right-hand release.



Product Specifications

Casing		Recommended Hole Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
Size (inches)	Weight (lbs/ft)					
5-1/2	13.0 - 23.0	4.670 - 5.044	4.500	2.00	2-7/8 EUE	31556

Service Tools

Tool Accessories



Tool Accessories CONTENTS

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DT-2 ON/OFF TOOL

The **DT-2 On/Off Tool** is a tubing seal receptacle allowing isolation of a lower zone using a wireline blanking plug. The tubing string can then be removed from the well. When re-run, the tubing string automatically re-engages to the stinger, and the blanking plug can be retrieved by wireline.

The DT-2 On/Off Tool is run above an ASI-X Packer, a VSI-X Packer or a Permapak Seal Bore Packer with a latch seal mandrel.

NOTE: Stingers sold separately.

Special Features

- Blanking plug seats in top of stinger to prevent debris build-up
- Bonded seal allows disconnects and re-connects
- Right-hand or left-hand release
- Milling shoe allows rotation through debris



DT-2 On/Off Tool



Stinger

Product Specifications

Casing / Tubing Size (inches)	Tool OD (inches)	Thread Connections Box Up	Part Number
2-7/8	2.250	1.900 NUE	51227
		1.900 EUE	51228
3-1/2	2.750	1.900 EUE	51235
4	3.250	1.900 EUE	51240
			51240-XBAB
	3.125	2-3/8 EUE	51240-1295
4-1/2	3.437	1.900 EUE	51242
	3.580	1.900 EUE	51243
	3.656	2-3/8 EUE	51244
	3.750	2-3/8 EUE	51245
5	3.750	2-3/8 EUE	51252
	4.250	2-3/8 EUE	51250

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

DT-2 On/Off Tool Product Specifications (continued)

Casing / Tubing Size (inches)	Tool OD (inches)	Thread Connections Box Up	Part Number
5-1/2	4.375	2-3/8 EUE	51254
	4.500	2-3/8 EUE	51255
	4.406	2-7/8 EUE	51251
	4.500	2-7/8 EUE	51256
6-5/8	5.500	2-3/8 EUE	51265
		2-7/8 EUE	51266
		3-1/2 EUE	51267
7	5.875	2-3/8 EUE	51270
		2-7/8 EUE	51271
	5.250	3-1/2 EUE	51268
	5.875	3-1/2 EUE	51273
7-5/8	6.375	2-7/8 EUE	51275
		3-1/2 EUE	51276
		4-1/2 EUE	51277
8-5/8	7.500	2-7/8 EUE	51285
		3-1/2 EUE	51286
		4-1/2 EUE	51287
9-5/8	8.250	2-7/8 EUE	51292
			51295
		3-1/2 EUE	51296
		4-1/2 EUE	51297
10-3/4	9.310	3-1/2 EUE	51210
		4-1/2 EUE	51210D
			51201
11-3/4	10.000	2-7/8 EUE	51211B
13-3/8	11.875	4-1/2 EUE	51213

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

PROFILE NIPPLE

The **Profile Nipple** is designed to allow common slickline plugs and equipment to be placed successfully downhole. API and Premium threads can be cut on the nipples to reduce crossovers. Common profile and sizes are available.

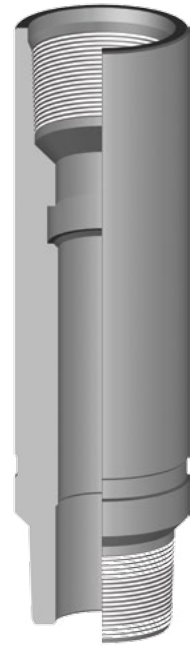
Special Features

- ID profiles made per customer requirements
- API and Premium threads available
- “F”, “R”, “DX”, and “DXN” profiles available
- CRA trim available

Product Specifications

Tubing Size (inches)	Profile Size (inches)	Profiles
1.900	1.500	DX DXN
2-3/8	1.437	F
	1.500	F R DX DXN
	1.625	F
	1.781	F R
	1.812	F R
	1.875	F R DX DXN
2-7/8	1.812	F R
	1.875	F R DX DXN
	2.130	R
	2.187	F R
	2.250	F R
	2.312	R DX DXN
3-1/2	2.250	F
	2.312	DX
	2.562	F R
	2.750	F R DX DXN
	2.812	F R DX DXN

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Box X Pin



Pin X Pin

BIT RELEASE JOINT

The **Bit Release Joint** is used in operations for drilling out cement, cast iron bridge plugs, composite bridge plugs, and other drillable tools and thereby leaving the drill string intact as the production string. The spring loaded check valve prevents tubing back-flow during drill out. After drill out, a ball is dropped through the drill string and seats in the piston. Pressure applied to the drill string forces the drill bit to release and fall to the bottom of the hole.

Special Features

- Simple design
- Dual float option
- Full opening after release
- High shear option available



Product Specifications

Thread Connections		Tool OD (inches)	Part Number
Top	Bottom		
2-3/8 EUE	2-3/8 REGULAR TOOL JOINT	3.500	80120
2-7/8 EUE	2-7/8 REGULAR TOOL JOINT	3.750	80125
4" IF TOOL JOINT	4-1/2 REGULAR TOOL JOINT	6.500	80145

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

SAFETY JOINT - SHEAR, ROTATIONAL & SWIVEL SHEAR

The **Safety Joint** allows positive release of the tubing string in completions where retrieval problems are anticipated. These safety joints are available in straight pull shear release, rotational release, and swivel shear release versions.

Product Specifications - Shear Safety Joint

Tubing Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
1-1/4	2.060	1.25	1-1/4 NPT	56912NPT
1.660	2.063	1.25	1.660 NUE	56916N
1.900	2.300	1.50	1.900 NUE	56919N
	2.500	1.50	1.900 EUE	56919E
2-3/8	3.063	2.00	2-3/8 EUE	56920K
2-7/8	3.688	2.50	2-7/8 EUE	56927K
3-1/2	4.500	3.00	3-1/2 EUE	56935K
4	5.000	3.50	4" EUE	56940K
4-1/2	5.560	4.00	4-1/2 EUE	56945K
5	5.560	4.50	5" LTC	56950K
5-1/2	6.050	4.67	5-1/2 LTC	56955K

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Shear Safety Joint



Rotational Safety Joint



Swivel Shear Safety Joint

Product Specifications - Rotational Safety Joint

Tubing Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
1.660	2.250	1.38	1.660 NUE	56816N
1.900	2.500	1.61	1.900 EUE	56819
2-3/8	3.060	2.00	2-3/8 EUE	56820
2-7/8	3.690	2.50	2-7/8 EUE	56827EH
3-1/2	4.250	3.00	3-1/2 NUE	56835
	4.500	3.00	3-1/2 EUE	56835E
4-1/2	5.200	4.00	4-1/2 EUE	56845-BAG
	5.000	4.00	4-1/2 LTC	56845LTC

OPTIONS: RH (Right-Hand Release), LH (Left-Hand Release)

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Product Specifications - Swivel Shear Safety Joint

Tubing Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
2-3/8	3.060	2.00	2-3/8 EUE	56320
2-7/8	3.690	2.50	2-7/8 EUE	56327E
3-1/2	4.500	3.00	3-1/2 EUE	56335
4-1/2	5.560	4.00	4-1/2 EUE	56345
			4-1/2 LTC	56345-XBCA
	5.000	3.92	4-1/2 LTC	56346-XBAC

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

PUMP-OUT PLUG

The **Pump-Out Plug** is available with a variety of threads allowing installation to the bottom of the tubing string to isolate the tubing from the annulus. To remove the plug, pressure is applied to the tubing and the Pump-Out Plug is removed to allow full opening. The pump-out pressure value is easily adjusted in the field by adding or removing shear screws. Also available with ball seat.

Special Features

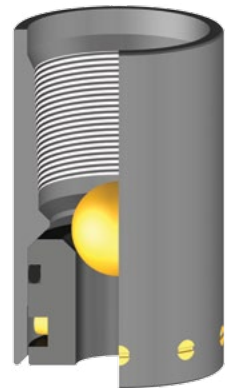
- Ball seat available
- Adjustable shear value (high shear available)
- Special Pump-Out Plug designs available



Pump-Out Plug
w/ Shear Screws

Product Specifications

Tubing Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connection Box Up	Part Number
1.050	1.660	-	1.050 EUE	59710E
1.315	1.900	1.20	1.315 EUE	59713E
1.660	2.062	1.38	1.660 NUE	59716N
1.660	2.200	1.38	1.660 EUE	59716E
1.900	2.500	1.50	1.900 EUE	59719E
	2.200	1.50	1.900 NUE	59719N
2-3/8	3.060	2.00	2-3/8 EUE	59720E
2-7/8	3.670	2.50	2-7/8 EUE	59727E
3-1/2	4.500	3.46	3-1/2 EUE	59735E
		2.88	3-1/2 EUE	59736E
4-1/2	5.560	4.00	4-1/2 EUE	59745E
			4-1/2 LTC	59745LTC
5-1/2	6.000	5.13	5-1/2 LTC	59755LTC
6-5/8	7.390	6.23	6-5/8 LTC	59766LTC
7	7.650	6.60	7" LTC	59770LTC
8-5/8	9.620	8.18	8-5/8 LTC	59786LTC
9-5/8	10.620	9.17	9-5/8 LTC	59796LTC



Pump-Out Plug
w/ Shear Screws
and Ball Seat

OPTIONS: Available with high shear, also with ball and ball seat.

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

DOWNHOLE TUBING/CASING SWIVEL

The **Downhole Tubing/Casing Swivel** isolates tools, casing, or tubing from rotation above. Bronze bearing rings insure smooth rotation under load. Simple design allows for easy tool redress.

Special Features

- Simple design for easy redress
- Full casing/tubing ID

Product Specifications - Tubing Swivel

Tubing Size (inches)	Swivel OD (inches)	Swivel ID (inches)	Thread Connection Box Up / Pin Down	Part Number
1.900	2.750	1.43	1.900 EUE / 1.900 NUE	83019
2-3/8	3.580	2.00	2-3/8 EUE	83021
	3.750	2.00	2-3/8 EUE	83020
2-7/8	4.400	2.50	2-7/8 EUE	83025
3-1/2	5.000	3.00	3-1/2 EUE	83035
4	4.500	3.38	4" NUE	83040
4-1/2	5.750	4.00	4-1/2 LTC	83045
	6.000	4.00	4-1/2 EUE	83046
5	5.875	4.50	5" LTC	83051
	6.250	4.50	5" LTC	83050
5-1/2	6.450	4.80	5-1/2 LTC	83056

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Tubing Swivel

Product Specifications - Casing Swivel

Casing OD (inches)	Swivel OD (inches)	Swivel ID (inches)	Thread Connection Box Up / Pin Down	Part Number
7	8.500	6.25	7" LTC	48070
		6.50	7" BUTTRESS	48070B
9-5/8	12.000	9.00	9-5/8 LTC	48095
			9-5/8 BUTTRESS	48095B
			9-5/8 LTC	48013

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Casing Swivel

CROSS FLOW ASSEMBLY

The **Cross Flow Assembly** is designed to allow for a fluid path between the casing annulus and tailpipe below a packer. It primarily is used for gaslift operations where gas from above a set retrievable production packer is directed through the packer and tailpipe to be used to lift produced fluids. The produced fluids and gas are routed through the Cross Flow Assembly into the production string. The ported sub on bottom allows long tailpipe sections below the packer since the weight of the tailpipe hangs on the bottom of the packer.

The Cross Flow Assembly is designed to screw into the top of a standard retrievable production packer (such as an ASI-X Packer). The setting and retrieving of the production packer is not altered by the addition of the Cross Flow Assembly.

Special Features

- Simple design
- Easily re-dressed
- Adaptable to different retrievable packers

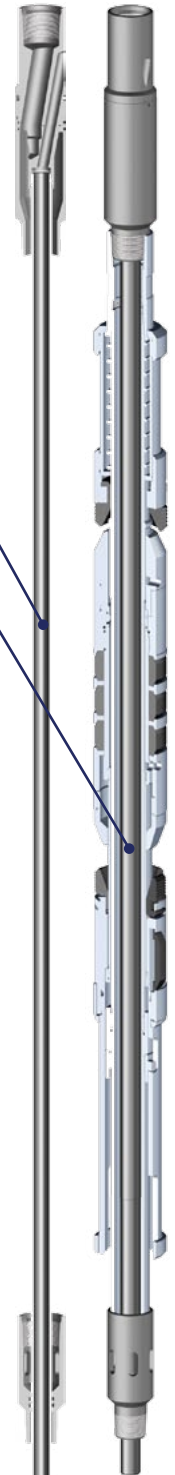
Product Specifications

Tubing Size (inches)	Production ID (inches)	Vent ID (inches)	Thread Connection Box Up / Pin Down	Part Number
1.900	1.19	0.62	1.900 NUE w/1/4" NPT PORT	67646
2-3/8	1.12	0.62	2-3/8 EUE	67645RCF
2-7/8	1.63	0.88	2-7/8 EUE / 2-3/8 EUE	67656
3-1/2	2.00	2.00	3-1/2 EUE	67670-3500EU
4	3.50	2.00	2-3/8 NUE / 4" NUE	67640
	2.00	2.00	4" NUE	67670-4000NU
5	2.50	2.39	2-3/8 EUE	67650LCFV
5-1/2	1.25	0.88	2-7/8 EUE	67657
				67656-BBA
				67656-XBAC
5-3/4	2.00	2.00	4" NUE	67640LCF
7	1.25	1.25	3-1/2 EUE	67673
	2.50	2.50	5" LTC	67650LCF
			2-3/8 EUE	67650LCF-E
	1.25	1.25	3-1/2 EUE	67673-E
				67673-XBAC

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

Cross Flow Assembly

Cross Flow Assembly with ASI-X Packer



EXPANSION JOINT

The **Expansion Joint** is used to allow expansion and contraction during injection or production operations. They are also used between packers to allow stroke for setting and releasing packers and provides for rotation through the tool. Available with optional seals for low to high temperatures and in lengths up to twenty (20) feet.

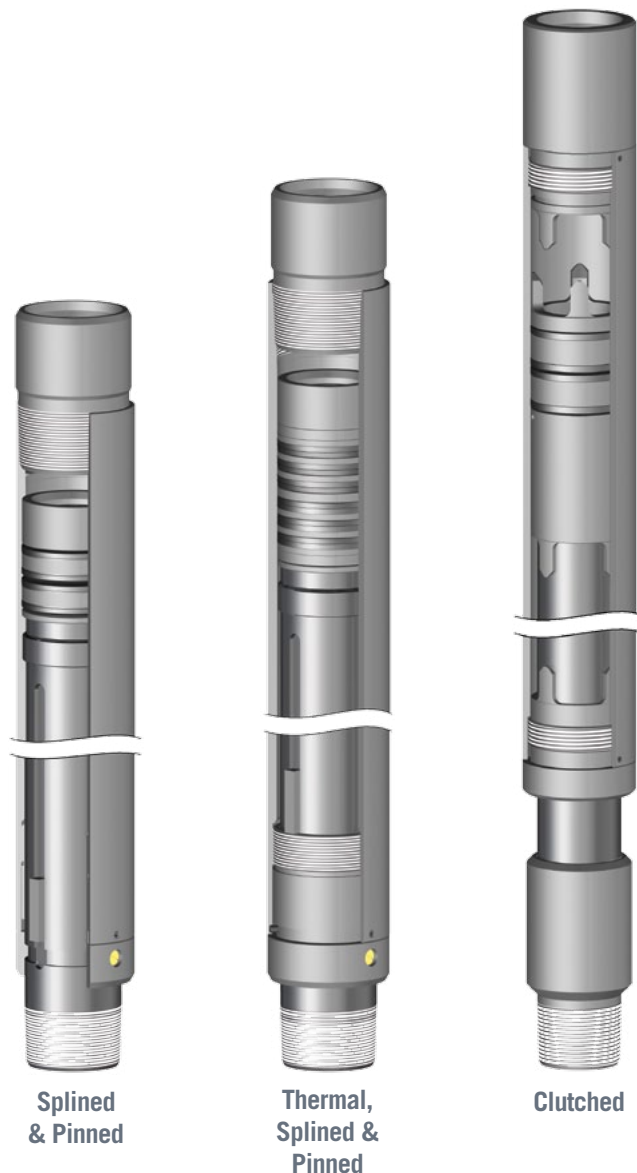
Special Features

- Pinned (P/N 537xx)
- Splined (Keyed) (P/N 538xx)
- Clutched (P/N 539xx)
- Thermal (P/N 532xx)
 - Combinations of two or more options available in one tool.

Product Specifications

Tubing Size (inches)
1.900
2-3/8
2-7/8
3-1/2
4
4-1/2
5
5-1/2
7
9-5/8

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



Splined
& Pinned

Thermal,
Splined &
Pinned

Clutched

PUMP-OUT CEMENTING SLEEVE

The **Pump-Out Cementing Sleeve** is used for cementing tubing strings in both cased and open holes. It allows for internal parts to be pumped out after the cementing process leaving a full open bore with no loss of tubing strength. It is available in a variety of materials. A basket or packer placed below the sleeve provides a seal-point for pumping cement up the outside of the tubing string.

Special Features

- Full ID after pump out
- Simple design
- Adjustable shear value

Product Specifications

Size (inches)	Tool OD (inches)	Ball Seat ID (inches)	ID After Pump Out (inches)	Thread Connections Box Up / Pin Down	Part Number
2-3/8	3.250	1.00	1.93	2-3/8 EUE	22020
					22021
2-7/8	3.750	1.25	2.40	2-7/8 EUE	22027
3-1/2	4.410	1.25	2.90	3-1/2 EUE	22035
4	4.630	1.25	3.45	4" NUE	22040
4-1/2	5.500	1.25	3.97	4-1/2 LTC	22045
5-1/2	6.130	1.25	4.63	5-1/2 LTC	22055

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



TYPE E VALVE

The **Type E Valve** converts double-grip mechanical packers like the ASI-X Packer into Retrievable Bridge Plugs. The valve is in the open position when running and closed by the rotation required to set the packer. When retrieving, the valve is opened by the rotation required to release the packer. Safety dogs lock the tool and valve together during running and retrieving.

Special Features

- Valve locked closed
- Bonded seals
- Equalized before releasing packer
- Safety interlock when running and retrieving

Product Specifications

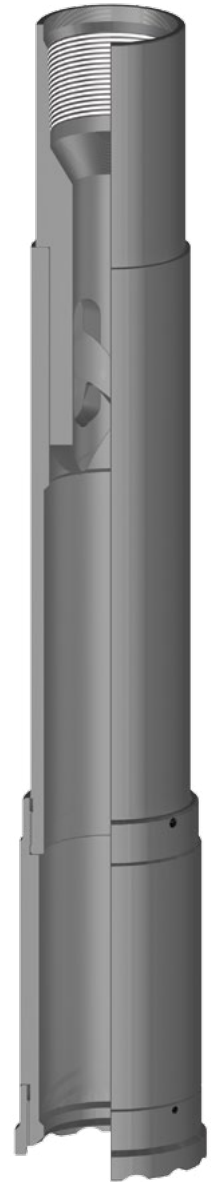
Size (inches)	Tool OD (inches)	Thread Connection Pin Down	Part Number
1.900	2.130	1.900 NUE	12435
2-3/8	3.094	2-3/8 EUE	12445
2-7/8	3.094	2-7/8 EUE	12455
4-1/2	4.750	4-1/2 EUE	12495

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.



RUNNING TOOL - FOR TYPE E VALVE

The **Running Tool for the Type E Valve** is designed to be used with the Type E Valve to convert double grip mechanical packers (like the ASI-X Packer) into a retrievable bridge plug. This Running Tool features cutting teeth on the running shoe for breaking up compacted trash for easy removal. Running shoes are available in different OD sizes to aid for centering the running tool in larger casing if needed.



Product Specifications

Casing Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connection Box Up	Part Number
3-1/2	2.750	1.16	1.900 NUE	12435RT
4-1/2	3.680	1.78	2-3/8 EUE	12444RT
	3.750	1.78	2-3/8 EUE	12445RT
5-1/2	4.500	1.78	2-7/8 EUE	12455RT
			2-3/8 EUE	12456RT
7	5.880	1.78	2-7/8 EUE	12470RT
10-3/4	9.700	3.00	4-1/2 EUE	12401RT

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

ANNULUS OPERATED TUBING DRAIN

The **Annulus Operated Tubing Drain** is an annulus pressure operated drain valve that can be opened to allow fluid to drain from the tubing on a trip out. Shear screws hold the valve closed until enough pressure is applied to the annulus to shear the screws. Once the valve is opened, it cannot be closed.



Product Specifications

Tubing Size (inches)	Tool OD (inches)	Tool ID (inches)	Thread Connections Box Up / Pin Down	Part Number
2-7/8	3.750	2.50	2-7/8 EUE	55025
3-1/2	4.750	3.00	3-1/2 EUE	55035

NOTE: All pricing includes standard Nitrile trim. Other sizes and connections available upon request.

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