S-D & DA Permanent Seal Bore Packer

Completion Equipment

ES-D & DA PERMANENT SEAL BORE PACKER

The ES-D Permanent Seal Bore Production Packer is a versatile tool that can be used for single or multiple zone completions. The ES-D is ideally suited for wells where high pressure, temperatures and corrosive fluids are anticipated. The packer is available in a variety of elastomers and seal bore materials to meet the most hostile downhole environments. The ES-D is recommended for injection, stimulation, testing

The Model "D" provides with Blank Bottom Guide and model DB bottom guide provides with threaded (Box or pin) distinguishes it from the Signature D. The Model PB guide can be threaded to accept a mill-out extension, seal-bore extension, or tubing.

ES-D

Applications

Permanent Gravel-Pack Packing Vertical, Deviated and Horizontal wellbores

Permanent sealbore production or isolation packing

Features and Benefits

Designed for ease of milling

Components keyed for milling. Wireline or Hydraulic set

Unique interlocking expandable metal backup rings contact casing, creating a positive barrier to pack ing element extrusion

Smooth, continuous ID sealing bore

Two opposed sets of full-circle, full-strength slips ensure packer will remain properly set

Packing element resists swab-off and packs off securely when packer is set

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.

Available in All API & Premium thread connections

ES -D Permanent Production Packer Specification Guide

Casing "H"		Recommended	Packer	Min Seal	Min ID	Baker E-4	Model
Size (In.)	Weight (lbs/Ft)	Casing ID Size (In.)	Max. OD (In.)	Bore ID of Packer (In.)	Thru Seals Assy.	Setting Tool	Hyd. Setting Tool Size
4-1/2	9.5-13.5	3.920-4.090	3.812	2.687	1.938	Size 10	2.375
	11.6-15.1	3.826-4.000	3.593	1.968	0.984		
5	11.5-13	4.494-4.560	4.250	2.687	1.938	Size 20	2.375
	15-20.8	4.156-4.408	3.960	2.687		Size 20	
5-1/2	13-17	4.892-5.044	4.560	2.687	1.938	Size 20	2.375
	20-23	4.670-4.778	4.430	2.687			2.875
	23-26	4.548-4.670	4.330	2.687			
6-5/8	20-32	5.675-6.049	5.468	2.687	1.938	Size 20	2.875
	24-32	5.675-5.921	5.350				
7	17-20	6.456-6.538	6.187	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	20-29	6.184-6.456	5.875				
	23-32	6.094-6.366	5.687				
	32-42.7	5.750-6.094	5.468				
	38-46.4	5.626-5.920	5.350				
7 5/8	24-33.7	6.765-7.025	6.375	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	33.7-39	6.625-6.765	6.187				
	45.3-51.2	6.251-6.435	5.875				
8-5/8	24-36	7.825-8.097	7.500	3.875 and 4	2.468 and 2.985	Size 20	2.875
	36-49	7.511-7.825	7.125				
9-5/8	36-53.5	8.535-8.921	8.125	4.750 and 4	3.875 and 2.985	Size 20	2.875

Model ES-DA Permanent Production Packer specification guide

Casing Size	Upper Seal Bore (In.)	Min. ID Through Seal Assy. (In.)	Lower Seal Bore (In.)**	Min. ID Through Seal Assy. (In.)
4-1/2”	2.500	1.875	1.968	1.312
5-1/2”	3.250	2.500	2.688	1.968
6-5/8”	4.000	3.250	3.250	2.406
7”	4.000	3.250	3.250	2.406
7-5/8”	4.000	3.250	3.250	2.406
9-5/8”	6.000	4.875	4.750	3.875

**Packer for these casing sizes also available with other seal bore and Seal assembly bore on order.

ES-F-1 FA-1 Permanent Seal Bore Packer

Completion Equipment

ES-F-1 & FA-1 PERMANENT SEAL BORE PACKER

ES-F-1 and production packers are the big-bore versions of the high-per- forming D retainer production packer. They feature the largest bore through any drillable packer.

ES "FA-1" production packer provides all the versatility and high-per- formance characteristics of the ES-D but with a larger sealing bore at the upper end. It's frequently used in complex multiple-string completions or when large tubing is run and it is necessary to maintain clearance through the packer. The "FA-1" is also used when the seal nipple is required to be compatible with the tubing ID.

The Model ES-F-1 and ES "FA-1" provides with Blank Bottom Guide and model ES-FB-1 and "FAB-1" bottom guide provides with threaded (Box or pin) distinguishes it from the Signature ES- F-1 and FA-1. The Model B-1 guide can be threaded to accept a mill-out extension, seal-bore extension, or tubing.

Applications

Permanent Gravel-Pack Packing
Vertical, Deviated and Horizontal wellbores
Permanent sealbore production or isolation packing

Features and Benefits

Designed for ease of milling

Components keyed for milling. Wireline or Hydraulic set

ES "FA-1" have larger diameter upper seal bore accepts an anchor seal assembly to maximize thru bore

Unique interlocking expandable metal backup rings contact casing, creating a positive barrier to packing element extrusion

Smooth, continuous ID sealing bore

Two opposed sets of full-circle, full-strength slips ensure packer will remain properly set

Packing element resists swab-off and packs off securely when packer is set

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.

Available in All API & Premium thread connections

ES-F-1

ES-FA-1

ES-F-1 FA-1 Permanent Seal Bore Packer

Completion Equipment

ES-F-1 Permanent Production Packer specification guide

Casing "H"		Recommended	Packer	Min Seal	Min ID	Baker E-4	Model
Size (In.)	Weight (lbs/Ft)	Casing ID Size (In.)	Max. OD (In.)	Bore ID of Packer (In.)	Thru Seals Assy.	Setting Tool	Hyd. Setting Tool Size
4-1/2	9.5-13.5	3.920-4.090	3.812	2.687	1.938	Size 10	2.375
	11.6-15.1	3.826-4.000	3.593	1.968	0.984		
5	11.5-13	4.494-4.560	4.250	2.687	1.938	Size 20	2.375
	15-20.8	4.156-4.408	3.960	2.687		Size 20	
5-1/2	13-17	4.892-5.044	4.560	2.687	1.938	Size 20	2.375
	20-23	4.670-4.778	4.430	2.687			2.875
	23-26	4.548-4.670	4.330	2.687			
6-5/8	20-32	5.675-6.049	5.468	2.687	1.938	Size 20	2.875
	24-32	5.675-5.921	5.350				
7	17-20	6.456-6.538	6.187	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	20-29	6.184-6.456	5.875				
	23-32	6.094-6.366	5.687				
	32-42.7	5.750-6.094	5.468				
	38-46.4	5.626-5.920	5.350				
7 5/8	24-33.7	6.765-7.025	6.375	3.250 and 2.687	2.375 and 1.938	Size 20	2.875
	33.7-39	6.625-6.765	6.187				
	45.3-51.2	6.251-6.435	5.875				
8-5/8	24-36	7.825-8.097	7.500	3.875 and 4	2.468 and 2.985	Size 20	2.875
	36-49	7.511-7.825	7.125				
9-5/8	36-53.5	8.535-8.921	8.125	4.750 and 4	3.875 and 2.985	Size 20	2.875

Model ES-FA-1 Permanent Production Packer specification guide

Casing Size	Upper Seal Bore	Min. ID Through Through	Lower Seal	Min. ID
4-1/2”	2.500	1.875	1.968	1.312
5-1/2”	3.250	2.500	2.688	1.968
6-5/8”	4.000	3.250	3.250	2.406
7”	4.000	3.250	3.250	2.406
7-5/8”	4.000	3.250	3.250	2.406
9-5/8”	6.000	4.875	4.750	3.875

**Packer for these casing sizes also available with other seal bore and Seal assembly bore

ES-SB & SAB Hydraulic Set

Permanent Seal Bore Packer

Completion Equipment

ES-SB & SAB HYDRAULIC SET PERMANENT SEAL BORE PACKER

The ES-SB is a hydraulic-set is permanent packer set by applied hydraulic pressure against a temporary plugging device set below the packer.

The "ES-SAB" has a large upper seal bore allowing the use of an anchor latch to create the largest possible
I.D. through the packer
and seals for

Applications

Permanent Gravel-Pack Packing
Vertical, Deviated and Horizontal wellbores
Permanent sealbore production or isolation packing

completions requiring large tubing sizes.

It is ideal for highly deviated and/or single-trip production and injection applications. This packer includes a one-piece mandrel, which eliminates a potential leak path. It has a low profile for greater running clearance to help reduce problems that may occur when running in highly deviated and horizontal wells

Features and Benefits

Designed for ease of milling Components keyed for milling. Hydraulic set

Solid construction enables faster run-in without fear of impact damage or premature setting, making significant rig-time savings possible

Unique interlocking expandable metal backup rings contact casing, creating a positive barrier to packing element extrusion

Smooth, continuous ID sealing bore

Two opposed sets of full-circle, full-strength slips ensure packer will remain properly set

Packing element resists swab-off and packs off securely when packer is set

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.

Available in All API & Premium thread connections

ES-SB & SAB Hydraulic Set

Permanent Seal Bore Packer

Completion Equipment

ES-SB Permanent Production Packer specification guide

Casing		Recommended	Gauge	Min. Sealbore	Min. ID Thru
Size	Weight (lbs/Ft)	Casing ID Size (In.)	Of Packer (Inch)	ID Of Packer (Inch)	Seals (Inch)
5“	15-21	4.126-4.408	3.968	1.968	1.312
5-1/2”	13-17	4.892-5.125	4.500	2.500	1.865
6-5/8”	17-20	6.049-6.175	5.687	3.250	2.406
	17-32	5.675-6.175	5.468	3.250	2.406
7”	17-20	6.456-6.538	6.187	3.250	2.406
	20-32	6.094 – 6.456	5.687	3.250	
	32-38	5.920 – 6.094	5.468	3.250	
7-5/8”	24-33.7	6.765-7.025	6.375	3.250	2.406
	33.7-39	6.625-6.765	6.187	3.250	
8-5/8”	24-36	7.825-8.097	7.500	4.000	3.000
9-5/8”	32.3-53.0	8.535-9.001	8.125	4.750	3.000

Model ES-SAB Permanent Production Packer specification guide

Casing Size	Upper Seal Bore (In.)	Min. ID Through Seal Assy. (In.)	Lower Seal Bore (In.)**	Min. ID Through Seal Assy.
4-1/2”	2.500	1.875	1.968	1.312
5-1/2”	3.250	2.500	2.688	1.968
6-5/8”	4.000	3.250	3.250	2.406
7”	4.000	3.250	3.250	2.406
7-5/8”	4.000	3.250	3.250	2.406
9-5/8”	6.000	4.875	4.750	3.875

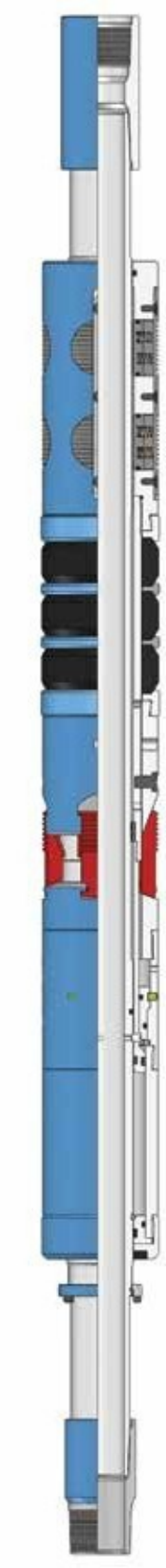
**Packer for these casing sizes also available with other seal bore and Seal assembly bore on order.

E-mail: info@enesolservice.com www.enersolservice.com

ES-FH Hydraulic Set Retrievable Packer

Completion Equipment

ES-FH HYDRAULIC SET RETRIVABLE PACKER



The Model ES-FH Double-Grip Hydrostatic Single String Packer is a retrievable packer set by either the hydrostatic head of the well, tubing pressure, or both and retrieve by straight pull at a specified shear vale.

The Model ES-FH Hydrostatic Pack- er is set by pressurizing the string to obtain a pressure differential in the packer. Temporary plugging below the packer is necessary. Plugging is typically done with a Pressurization Sub, E-Hydro-Trip Sub, Sliding Sleeve or Landing Nipple used with Blanking Plug or another Hydraulic Setting Device.

Applications

Production, injection, and zonal isolation
Single-string selective completions or dual-string completions with multiple packers.
Deviated wells or other applications when rotation for installation or removal is not beneficial.

Features and Benefits

Hydraulically activated, hydrostatic-set, low-pressure, rig-pump-capable activation
Field-adjustable shear release
No tubing manipulation required to set the Packer
Operationally simple
Triple-seal multi-Durometer elements ensure pressure integrity over a wide range of temperatures and conforms easily to casing irregularities
Hydraulic Hold-Down Buttons activated by well pressure enables the bidirectional gripping of Packer to withstand high differential pressure from below the packer.
Ability to withstand high hydrostatic pressure
Setting mechanism ensures sustained pack off force throughout the life of the packer.
Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
Available in All API & Premium thread connections

ES-HS Hydraulic Set Double Grip Retrievable Packer

Completion Equipment

ES-HS HYDRAULIC SET DOUBLE GRIP RETRIEVABLE PACKER

The Model ES-HS Double-Grip Packer is a retrievable packer set by tubing pressure and retrieves by straight pull at a specified shear vale.

The Model ES-HS Hydrostatic Packer is set by pressurizing the string to obtain a pressure differential in the packer. Temporary plugging below the packer is necessary. Plugging is typically done with a Pressurization Sub, E-Hydro-Trip Sub, Sliding Sleeve or Landing Nipple used with Blanking Plug or another Hydraulic Setting Device.

Applications

Production, injection, and zonal isolation

Single-string selective completions or dual-string completions with multiple packers.

Deviated wells or other applications when rotation for installation or removal is not beneficial.

Features and Benefits

Hydraulically activated

Field-adjustable shear release

No tubing manipulation required to set the Packer

Operationally simple Positive

casing grip to secure packer

Equalizing system above the element enables the Packer Easy running against well pressure and unloads the tubing during retrieving.

Triple-seal multi-Durometer elements ensure pressure integrity over a wide range of temperatures and conforms easily to casing irregularities

Hydraulic Hold-Down Buttons activated by well pressure enables the bidirectional gripping of Packer to withstand high differential pres sure from below the packer.

Ability to withstand high hydro static pressure

Setting mechanism ensures sustained packoff force through out the life of the packer.

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.

Available in All API & Premium thread connections

E-mail: info@enesolservice.com www.enersolservice.com

ES-HS Hydraulic Set Double Grip Retrievable Packer

Completion Equipment

ES-HS HYDRAULIC SET DOUBLE GRIP RETRIEVABLE PACKER

The Model ES-HS Double-Grip Packer is a retrievable packer set by tubing pressure and retrieves by straight pull at a specified shear vale.

The Model ES-HS Hydrostatic Packer is set by pressurizing the string to obtain a pressure differential in the packer.

Temporary plugging below the packer is necessary. Plugging is typically done with a Pressurization Sub, E-Hydro-Trip Sub, Sliding Sleeve or Landing Nipple used with Blanking Plug or another Hydraulic Setting Device.

Applications

- Production, injection, and zonal isolation
- Single-string selective completions or dual-string completions with multiple packers.
- Deviated wells or other applications when rotation for installation or removal is not beneficial.

Features and Benefits

- Hydraulically activated Field-adjustable shear release
- No tubing manipulation required to set the Packer
- Operationally simple Positive casing grip to secure packer
- Equalizing system above the element enables the Packer Easy running against well pressure and unloads the tubing during retrieving.
- Triple-seal multi-Durometer elements ensure pressure integrity over a wide range of temperatures and conforms easily to casing irregularities
- Hydraulic Hold-Down Buttons activated by well pressure enables the bidirectional gripping of Packer to withstand high differential pres sure from below the packer.
- Ability to withstand high hydro static pressure
- Setting mechanism ensures sustained packoff force through out the life of the packer.
- Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
- Available in All API & Premium thread connections

ES-HS Hydraulic Set Double Grip Retrievable Packer

Completion Equipment

ES-HS Hydraulic set retrievable Packer specification guide

Casing		Recommended	Gauge OD	Min.ID	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Of Packer (Inch)	Connection
4-1/2"	9.5-13.5	3.910 - 4.090	3.800	1.9	2-3/8" EU
5"	15-18	4.250 - 4.408	4.125	1.9	
	11.5-15	4.408 – 4.560	4.250	1.9	
5-1/2"	13.0-15.5	4.950 - 5.190	4.781	2	2-3/8" EU
	15.5-20.0	4.778- 4.950	4.641		
	20.0-23.0	4.625- 4.778	4.500		
	26	4.500	4.250		
6-5/8"	20 - 24	5.921- 6.049	5.661	2 or 2.42	2-3/8" & 2-7/8" EU
	24 - 28	5.791- 5.921	5.625		
	28 - 32	5.675 - 5.791	5.484		
7"	17.0-23.0	6.366- 6.538	6.154	2.42 or 3.00	2-7/8" & 3-1/2" EU
	23.0-26.0	6.276- 6.366	6.078		
	26.0-29.0	6.184- 6.276	5.968		
	26.0-32.0	6.094- 6.276	5.891		
	32.0-35.0	6.004- 6.094	5.817		
7 5/8"	20-24	7.025- 7.125	6.810	2.42 or 3.00	2-7/8" & 3-1/2" EU
	24-29.7	6.800-7.030	6.670		
	33.7-39	6.625- 6.765	6.453		
9-5/8"	40-47	8.681 – 8.835	8.463	3.00 or 3.95	3-1/2"& 4-1/2" EU
	47-53.5	8.535 - 8.681	8.354		

E-mail: info@enesolservice.com www.enersolservice.com

ES-HP Hydraulic Set

Retrievable Production Packer

Completion Equipment

ES-HP HYDRAULIC SET RETRIEVABLE PRODUCTION PACKER

The ES-HP hydraulics set retrievable production Packer is set by hydraulic pressure on the tubing string and retrieved by straight pull. The packer features no downward mandrel movement during setting so it can be run in stacked applications. This feature also eliminates the need for staggering the setting pressures between packers, since all packers in the well can be reliably set simultaneously. The ES-HP packer is ideally suited for running below dual string packers as well, and may be set after the well has been flanged up.

With the ES-HP packer, the tubing may be landed in tension, compression or neutral, in deviated and horizontal holes. It may also be run in applications using gas lift mandrels and safety valves where tubing rotation is not desirable.

Applications

Production
Injection
Offshore completions with safety valves, gas lift mandrels
Horizontal and deviated wells
Stacked and dual string applications
Zonal Isolation
Coil tubing completions

Features and Benefits

Adjustable straight pull release Can be landed in tension, neutral or compression
No downward mandrel movement for stacked applications
Elastomer and metallurgical options available for hostile environments
Compensating piston counteracts pressure from below
Works with tubing disconnect tools and expansion joints
Can be run with a T-2 On-Off Tool and wireline plug to act as a bridge plug
Ideal for use with fiber glass tubing, or coil tubing.
Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.
Available in All API & Premium thread connections

ES-HP Hydraulic Set

Retrievable Production Packer

EnerSol
Solution for Energy

Completion Equipment

ES-HP Hydraulic set Retrievable Packer specification guide

Casing		Recommended	Gauge OD	Min.ID	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Of Packer (Inch)	Connection
4-1/2”	9.5-13.5	3.910 - 4.090	3.800	1.9	2-3/8” EU
5”	15-18	4.250 - 4.408	4.125	1.9	
	11.5-15	4.408 – 4.560	4.250	1.9	
5-1/2”	13.0-15.5	4.950 - 5.190	4.781	2	2-3/8” EU
	15.5-20.0	4.778- 4.950	4.641		
	20.0-23.0	4.625- 4.778	4.500		
	26	4.500	4.250		
6-5/8”	20 - 24	5.921- 6.049	5.661	2 or 2.42	2-3/8” & 2-7/8” EU
	24 - 28	5.791- 5.921	5.625		
	28 - 32	5.675 - 5.791	5.484		
7”	17.0-23.0	6.366- 6.538	6.154	2.42 or 3.00	2-7/8” & 3-1/2” EU
	23.0-26.0	6.276- 6.366	6.078		
	26.0-29.0	6.184- 6.276	5.968		
	26.0-32.0	6.094- 6.276	5.891		
	32.0-35.0	6.004- 6.094	5.817		
7 5/8”	20-24	7.025- 7.125	6.810	2.42 or 3.00	2-7/8” & 3-1/2” EU
	24-29.7	6.800-7.030	6.670		
	33.7-39	6.625- 6.765	6.453		
9-5/8”	40-47	8.681 – 8.835	8.463	3.00 or 3.95	3-1/2”& 4-1/2” EU
	47-53.5	8.535 - 8.681	8.354		

E-mail: info@enesolservice.com www.enersolservice.com

ES-TS Tension Set Packer

Completion Equipment

ES-TS TENSION SET PACKER

The ES-TS tension packer is a compact, economical, retrievable packer. Primarily used in water flood applications, it can also be used for production, treating operations, and when a set-down packer is impractical. And because the ES-TS is tension-set, it is ideally suited for shallow wells where set-down weight is not available.

The packer can be set by applying right hand torque to the tubing. While the right hand torque applied, the tubing is picked up and appropriate amount of tension is applied to set the Packer. Packer can be released by simply picking up the tubing. The shear release mechanism uses slotted brass shear screws which can be easily accessed for adjustment in the field.

Applications

Production
Injection
Completion, Well servicing and treating operation

Features and Benefits

Case Hardened Drag blocks make for extended life.

Full bore Mandrel.

Automatic J-slot provides for easy release.

Incorporates both a rotational and a field adjustable shear safety release.

Uses proven one-piece packing element.

Available in all metallurgical and Elastomers conforming to NACE

MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well

Services requirements.

Available in All API & Premium thread connections

Casing		Recommended	Gauge OD	Min.ID	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Of Packer (Inch)	Connection
5-1/2"	13.0-14.0	5.012	4.813	2.40	2-3/8" & 2-7/8" EUE
	14.0-20.0	4.778- 5.012	4.625	2.40	
	20.0-23.0	4.670- 4.778	4.500	2.40	
	23.0-26.0	4.548- 4.670	4.406	2.40	2-7/8" & 3-1/2" EUE
7"	17.0-20.0	6.456-6.538	6.250	3.00	
	17.0-26.0	6.276 - 6.538	6.000	3.00	
	26.0-32.0	6.094 - 6.276	5.875	3.00	
	29.0-35.0	6.004 - 6.184	5.812	3.00	
	35.0	6.004	5.812	3.00	
9-5/8"	32.3-43.5	8.755 - 9.001	8.500	4.00	4-1/2" EUE
	43.5-53.5	8.535- 8.755	8.250	4.00	

ES-CS Compression Set Packer

Completion Equipment

ES-CS COMPRESSION SET PACKER

The ES-CS compression pack- er is a compact, economical, retrievable packer. Primarily used in waterflood applications, it can also be used for production, treating operations,andwhenaset-downpacker isimpractical. Andbecausethe ES-TSis compression-set, it is ideally suited for shallow wells where set-down weight is not available.

The packer can be set by applying right hand torque to the tubing. While the right hand torque applied, the tubing is lowered and appropriate amount of set down weight is applied to set the Packer. Packer can be released by simply picking up the tubing. The shear release mechanism uses slotted brass shear screws which can be easily accessed for adjustment in the field.

Applications

Production Injection

Completion, Well servicing and treating operation

Features and Benefits

Case Hardened Drag blocks make for extended life.

Fullbore Mandrel

Automatic J-slot provides for easy release.

Incorporates both a rotational and a field adjustable shear safety release.

Uses proven one-piece packing element.

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/ H2S, CO2 well services requirements.

Available in All API & Premium thread connections

Casing		Recommended	Gauge OD	Min.ID	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Of Packer (Inch)	Connection
5-1/2"	13.0-14.0	5.012	4.813	2.40	2-3/8" & 2-7/8" EUE
	14.0-20.0	4.778- 5.012	4.625	2.40	
	20.0-23.0	4.670- 4.778	4.500	2.40	
	23.0-26.0	4.548- 4.670	4.406	2.40	2-7/8" & 3-1/2" EUE
7"	17.0-20.0	6.456-6.538	6.250	3.00	
	17.0-26.0	6.276 - 6.538	6.000	3.00	
	26.0-32.0	6.094 - 6.276	5.875	3.00	
	29.0-35.0	6.004 - 6.184	5.812	3.00	
	35.0	6.004	5.812	3.00	
	32.3-43.5	8.755 - 9.001	8.500	4.00	
9-5/8"	43.5-53.5	8.535- 8.755	8.250	4.00	4-1/2" EUE

E-mail: info@enesolservice.com www.enersolservice.com

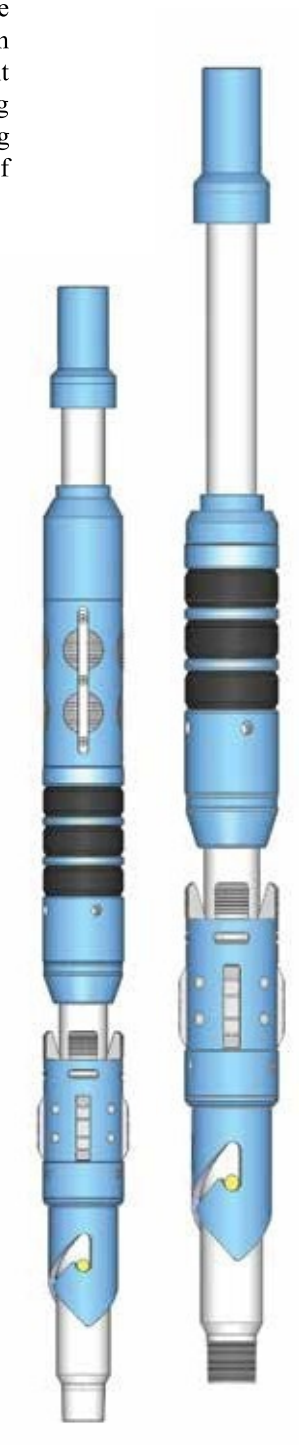
ES-"CR-3" Mechanical Set Retrievable Packer

Completion Equipment

ES-"CR-3"MECHANICAL SET RETRIEVABLE PACKER

The CR-3 Packer is a Mechanical compression-set production packer intended for a broad range of production applications. It is a compression-set packer, suitable for stimulation and treating applications in a single/double-grip configuration. Applications in which excessive bottom hole pressures have been depleted, a single-grip version can be used as an economical production packer.

It is set by applying a quarter turn to the right at the packer followed by set down weight. The packer is released by straight pick up to open the large by-pass allowing equalization. After equalization, the packing elements release reducing tendency of swabbing when pulling out of wellbore.



Applications

Squeeze Cementing

Acidizing

Formation fracturing Well

Testing & Servicing

Features and Benefits

Holds high pressure differentials from above or below.

The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, and straight pull release.

Reliable Three-piece, dual-durometer sealing elements provide better pack off Bypass valve is below upper slips so the debris is washed from slips when the valve is opened Benefits.

Bypass valve opens before upper slips are released

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections and Elastomers type

ES-"CR-3" Mechanical Set Retrievable Packer

EnerSol
Solution for Energy

Completion Equipment

CR-3 PACKER Technical information

Casing		Recommended	Gauge OD	Min.ID	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Of Packer (Inch)	Connection
4-1/2	9.5-13.5	3.920-4.090	3.786	1.938	2-3/8" EUE
	15.1	3.826	3.620	1.500	
5-1/2	14-15.5	4.950-5.012	4.796	1.995	*2-3/8" & 2-7/8" EUE
	15.5-20	4.778-4.950	4.656	1.995	
	20-23	4.670"- 4.778	4.515	1.995	
	26.8	4.375	4.406"	1.995	
6-5/8	20	6.049	5.827	2.406	2-3/8" & 2-7/8" EUE
	24-28	5.791-5.921	5.603	2.406	
	28-32	5.675-5.791	5.490	2.406	
7	17-20	6.456-6.538	6.281	2.441	**2-7/8" & 3-1/2" EUE
	20-26	6.276 - 6.456	6.093	2.441	
	26-29	6.184- 6.276	5.939	2.441	
	32-35	6.004 - 6.094	5.827	2.441	
7-5/8	24	7.025	6.827	2.441	**2-7/8" & 3-1/2" EUE
	24-29.7	6.875 -7.025	6.687	3.000	
9-5/8	40-47	8.681 - 8.835	8.453	3.958	
	47-53.5	8.535 - 8.681	8.233	3.958	

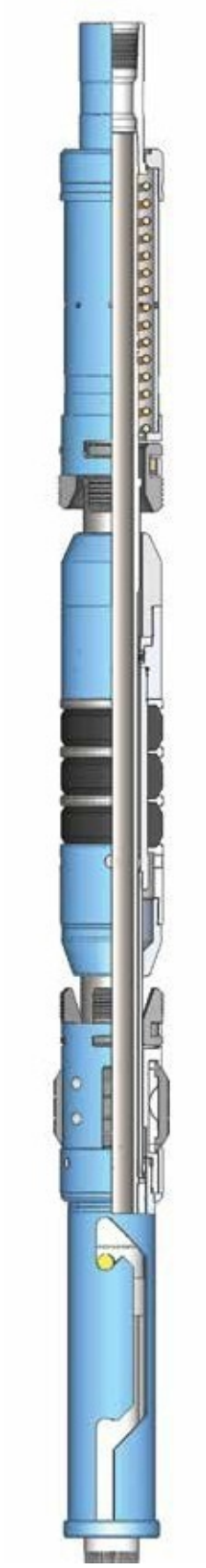
* For casing Size 5-1/2" the packer can also be supply with 2-7/8" Tubing with 2.365" ID
** For casing Size 7" the packer can also be supply with 3-1/2" Tubing with 3" ID
• Packer can be supplied with any API and premium threads on request.

E-mail: info@enesolservice.com www.enersolservice.com

ES-"IX" Mechanical Set Retrievable Packer

Completion Equipment

ES-"IX" MECHANICAL SET RETRIEVABLE PACKER



The ES-IX Mechanical Production Packer is a retrievable, double- grip compression or tension set production packer that can be left in tension, compression, or in a neutral position, and will hold pressure from above or below. A large internal by pass reduces the swabbing effect during run-in and retrieval, and closes when the packer is set. When the packer is released, the bypass opens first, allowing the pressure to equalize before the upper slips are released.

The ES-IX also features a patented upper-slip releasing system that reduces the force required to released he pacer. Anon-directional slips released first, making it easier to release the other slips.

The ES-IX can easily convert to ES VI- X with the advantage of being able to set on Electric line or hydraulically- just remove the shear screws and install drag blocks and drag block springs. An On-Off Tool Stinger with a Wire line 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.

Applications

Zonal Isolation, Injection and Production.

Shallow wells

Features and Benefits

Holds high pressure differentials from above or below

The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, 1/4 turn right-hand release.

Can be set using tension or com pression Only

one-quarter right rotation is re quired to set and release

Field-proven releasing system

Optional safety-release features available upon request

Bypass valve is below upper slips so the debris is washed from slips when the valve is opened Benefit

Field-proven design meets most production, stimulation, and injection needs.

Can be run with a Model T-2 On-Off Tool Can be left in tension, compression, or neutral position.

Bypass valve opens before upper slips are released.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections and Elastomers type

Validated to withstand 7,500 psi differential pressure and 300° F Temperature

ES-" IX " Mechanical
Set Retrievable Packer

EnerSol
Solution for Energy

Completion Equipment

ES-IX PACKER Specification Guide

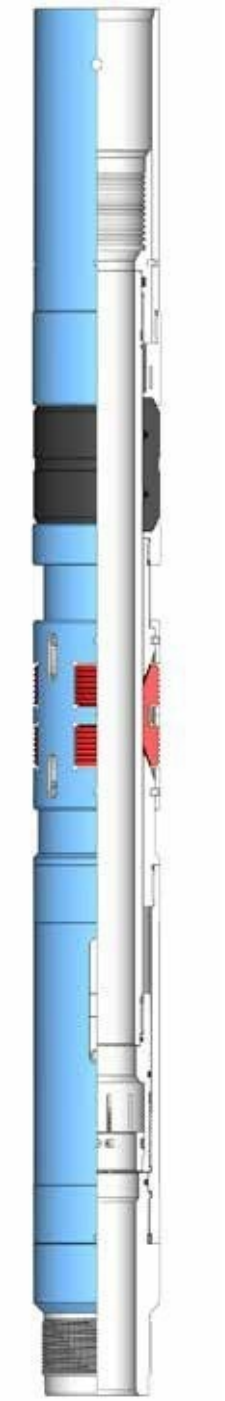
Casing		Recommended	Gauge OD	Min.ID	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Of Packer (Inch)	Connection
5-1/2"	13.0-14.0	5.012	4.813	2.40	2-3/8" & 2-7/8" EUE
	14.0-20.0	4.778- 5.012	4.625	2.40	
	20.0-23.0	4.670- 4.778	4.500	2.40	
	23.0-26.0	4.548- 4.670	4.406	2.40	
7"	17.0-20.0	6.456-6.538	6.250	3.00	2-7/8" & 3-1/2" EUE
	17.0-26.0	6.276 - 6.538	6.000	3.00	
	26.0-32.0	6.094 - 6.276	5.875	3.00	
	29.0-35.0	6.004 - 6.184	5.812	3.00	
	35.0	6.004	5.812	3.00	
9-5/8"	32.3-43.5	8.755 - 9.001	8.500	4.00	4-1/2" EUE
	43.5-53.5	8.535 - 8.755	8.250	4.00	

E-mail: info@enesolservice.com www.enersolservice.com

ES-"RSB" Retrievable Seal Bore Packer

Completion Equipment

ES-"RSB" RETRIEVABLE SEAL BORE PACKER



The **ES-RSB** Packer is a retrievable seal bore packer run on electric line with a wire line adapter kit and setting tool or on tubing using a hydraulic setting tool. All the load bearing parts are designed to withstand high tensile loads and the bi-directional slips prevent any movement after set- ting. It is retrieved by a straight pull release mechanism using a ES-R Retrieving Tool.

Applications

High pressure production or injection

Suitable for ERD wells Anchored or floating seal completions

Vertical, Deviated and Horizontal wellbores

Sealbore production or isolation packing

Liner Top installation and straddle packer installation.

Features and Benefits

Designed for use in vertical, deviated or horizontal well completion applications.

Bi-directional slips prevent any movement after setting.

An internal locking device maintains pack off.

Retrieved by a straight pull shear release using a retrieving tool.

Retrieving tool has an emergency shear release feature in the event that the packer does not release.

Wireline or Hydraulic set Smooth,

continuous ID sealing bore

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.

Available in All API & Premium thread connections

ES-"RSB" Retrievable Seal Bore Packer

Completion Equipment

ES-RSB packer specification guide

Casing		Recommended	Gauge OD	Min. Seal bore	Min. ID Thru
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	ID Of Packer (Inch)	Seals (In.)
5”	11.5-15	4.408-4.560	4.250	2.688	1.968
5-1/2”	14-15.5	4.950-5.012	4.765	2.688	1.968
	17-20	4.778-4.892	4.593	2.688	
	20-23	4.670- 4. 778	4.485	2.688	
7”	17-20	6.456-6.538	6.250	3.250	1.995 or 2.406
	23-29	6.184 - 6.366	6.000	3.250	
	29-32	6.094 - 6.184	5.820	3.250	
	35-38	5.920 - 6.004	5.735	3.250	
7-5/8”	24-29.7	6.875-7.025	6.690	4.000	2.406 or 3
	29.7-33.7	6.765-6.875	6.580	4.000	
9-5/8”	36-40	8.835-8.921	8.619	4.750	3 or 3.875
	40-47	8.681- 8.835	8.465	4.750	
	47-53.5	8.535- 8.681	8.319	4.750	

Bottom thread connection types, sizes, are available on request

E-mail: info@enesolservice.com www.enersolservice.com

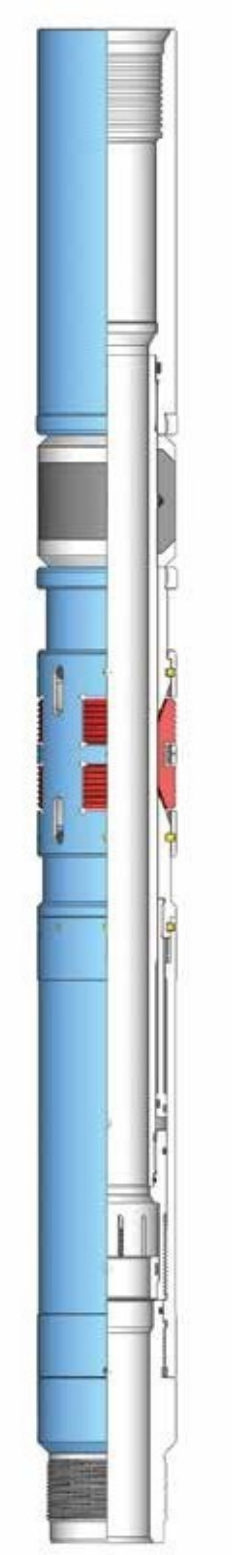
ES-"PBR" Hydraulic Set Retrievable Packer

Completion Equipment

ES-"PBR" HYDRAULIC SET RETRIEVABLE PACKER

The ES-PBR Packer is a hydraulic set retrievable seal bore packer. It is run on tubing using an Anchor Seal Nipple and set by applying tubing pressure. It includes Large Upper bore of the Packer allows maximum flow through the completion string for high volume applications.

All the load bearing parts are designed to withstand high tensile loads and the bi-directional slips prevent any movement after setting. It is retrieved by a straight pull release mechanism using a ES-R Retrieving Tool.



Applications

High pressure production or injection

Anchored or floating seal completions

Vertical, Deviated and Horizontal wellbores

Sealbore production or isolation packing

Liner Top installation and straddle packer installation.

Features and Benefits

Designed for use in vertical, deviated or horizontal well completion applications.

Bi-directional slips prevent any movement after setting.

An internal locking device maintains pack off.

Retrieved by a straight pull shear release using a retrieving tool.

Retrieving tool has an emergency shear release feature in the event that the packer does not release.

Wireline or Hydraulic set Smooth, continuous ID sealing bore

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.

Available in All API & Premium thread connections

ES-"PBR" Hydraulic Set Retrievable Packer

EnerSol
Solution for Energy

Completion Equipment

ES-PBR Packer specification guide

Casing		Recommended	Gauge OD	Upper	Min. Sealbore	Min. ID
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Bore (Inch)	ID Of Packer (Inch)	Thru Seals (In.)
5”	11.5-15	4.408-4.560	4.250	3.000	2.688	1.968
5-1/2”	14-15.5	4.950-5.012	4.765	3.000	2.688	1.968
	17-20	4.778-4.892	4.593	3.000	2.688	
	20-23	4.670- 4. 778	4.485	3.000	2.688	
7”	17-20	6.456-6.538	6.250	4.000	3.250	1.995 or 2.406
	23-29	6.184 - 6.366	6.000	4.000	3.250	
	29-32	6.094 - 6.184	5.820	4.000	3.250	
	35-38	5.920 - 6.004	5.735	4.000	3.250	
7-5/8”	24-29.7	6.875-7.025	6.690	4.750	4.000	2.406 or 3
	29.7-33.7	6.765-6.875	6.580	4.750	4.000	
9-5/8”	36-40	8.835-8.921	8.619	4.750	4.750	3 or 3.875
	40-47	8.681- 8.835	8.465	4.750	4.750	
	47-53.5	8.535- 8.681	8.319	4.750	4.750	

Bottom thread connection types, sizes, are available on request

E-mail: info@enesolservice.com www.enersolservice.com

ES-ISOLATION PACKER

The ES Isolation Packer is a hydraulic set, single string tandem packer used in multiple zone well completions.

The Packer is set by applying hydraulic pressure to the tubing against a temporary plug located below to shear the setting screws and pack off the elements. It is released by straight pull which shears the releasing screws allowing the packing elements to relax and equalizing pressure from tubing to annulus.

It can be used as the upper packer in a dual zone application or in multiple quantities when more than two zones are to be completed.

Features and Benefits

Easily adjustable set and release shear screws, both field adjustable.

Compact length makes it ideal for use in highly deviated wells.

Economical design.

Standard three piece nitrile packing elements, premium elements available on request.

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S, CO2 well services requirements.

Available in All API & Premium thread connections.

ES-Isolation Packer specification guide

Casing		Recommended	Gauge OD	Min. Sealbore ID	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	Of Packer (Inch)	Connection
4-1/2”	9.5-13.5	3.910 - 4.090	3.800	1.9	2-3/8” EU
5”	15-18	4.250 - 4.408	4.125	1.9	
	11.5-15	4.408 – 4.560	4.250	1.9	
5-1/2”	13.0-15.5	4.950 - 5.190	4.781	2	2-3/8” EU
	15.5-20.0	4.778- 4.950	4.641		
	20.0-23.0	4.625- 4.778	4.500		
	26	4.500	4.250		
7”	17.0-23.0	6.366- 6.538	6.154	2.42 or 3.00	2-7/8” & 3-1/2” EU
	23.0-26.0	6.276- 6.366	6.078		
	26.0-29.0	6.184- 6.276	5.968		
	26.0-32.0	6.094- 6.276	5.891		

ES-"H" Hydraulic Setting Tool

Completion Equipment

ES-"H" HYDRAULIC SETTING TOOL

The ES Model "H" Hydraulic Setting Tools are used to run and set packers, bridge plugs and cement retainers on tubing or drill pipe. After dropping a Ball, the setting tool converts hydraulic pressure applied to the tubing into a mechanical force that is transmitted through the adapter kit to the tool. It allows setting in high angle or deviated wells where it is often difficult to use wireline equipment.

Auto flow sub is optional can be supply on the request of customer. The auto flow sub connect with the Top thread of Setting tool. The Auto flow sub allow the Tubing/Drill string pressure by shearing the Ball seat to activate the Piston cylinder arrangement of setting Tool. The shearing force of the ball seat can be varying at surface by increasing or decreasing the no. of shear pins.

Features and Benefits

Simple Operation

Uses the same adapter kits for running as are used with a Baker 10# or 20# setting tool

Automatically fills and drains tubing

Hydraulically balanced while running in the hole to prevent premature setting

Number of Pistons can be increased as per customer requirement

Can withstand high tensile loads No rotation required to set or release the tool

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

ES-"H" Setting Tool specification guide

Casing	Tool	Thread Connection		Min. Sealbore ID	Max. Setting
Size	OD (In.)	Top	Bottom	Of Packing (Inch.)	Force (Lbs)
4-4-1/2"	3.5	2-3/8" EUE	BAKER #10	7,500	75,000
≥ 5"	3.88	2-7/8" EUE	BAKER #20	6,000	1,00000
≥ 6-5/8"	5	3-1/2" EUE			

E-mail: info@enesolservice.com www.enersolservice.com

ES-"BT" Wireline Pressure Setting Tool

Completion Equipment

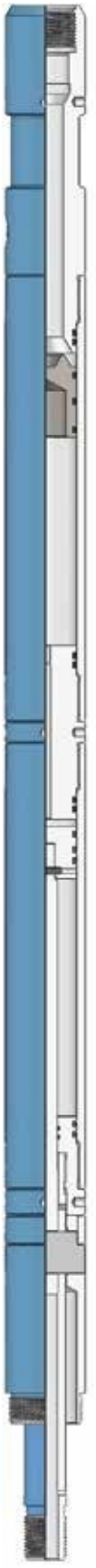
ES- "BT" WIRELINE PRESSURE SETTING TOOL

The ES Model "BT" Wireline Setting Tools are used to run and set packers, bridge plugs and cement retainers on tubing or drill pipe.

The combustion are used to provide the gradual development of force through pressure. The force in the setting tool creates the various parts which allow the successful setting of bridge Plugs, Cement retainers and packers etc.

The pressure that powers this tool is built up throughout of a Power charge. The pressure is confined to the correct portion of the tool through the use of O-ring seals.

The BT Wireline Pressure Setting Tool incorporates a manual bleeder valve to provide a safe and easy way of bleeding trapped pressure prior to disassembly after the tool has made a run in the well.



ES-BT Wireline pressure setting Tool specification guide

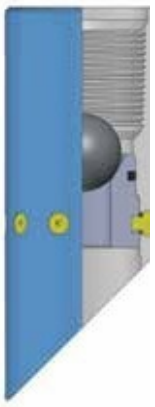
		Thread Connection		
Casing Size	Tool OD (In.)	Top	Bottom	Max. Setting Force (Lbs)
4-4-1/2"	3.5	2-3/8" EUE	BAKER #10	75,000
≥ 5" ≥ 6-5/8"	3.88 5	2-7/8" EUE 3-1/2" EUE	BAKER #20	1,00000

Pump Out Plug

Completion Equipment

PUMPOUT PLUG

The Pump-Out Plug is installed to the bottom of the tubing string below the Packer to isolate the tubing from the annulus. To remove the plug, drop the Ball and apply pressure the Pump-Out Plug is removed to allow full opening. Also available with blank seat sub. The plug is available with the half Mule Full mule and bevelled lower end to aid the re-entry of Slick line/Wireline Entry Tools.



Features and Benefits

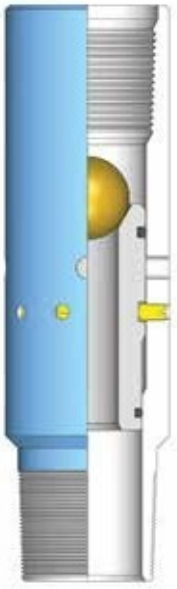
Field Adjustable shear screws to achieve desired pressure rating

Available in All API material grades

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections and O-Ring type

High chamfered Lower End aid the re-entry of Slickline/Wireline Entry Tools



ES-Pump Out Plug specification guide

Tubing Size	Tool OD (In.)	Tool ID After Shear the Ball Seat	Ball Size	ID of Ball Seat
2-3/8”	3.062”	1.937”	1 ¼”	1.000”
2-7/8”	3.668”	2.375”	1 ½”	1.250”
3-1/2”	4.500”	2.937”	2 ½”	2.250”
4-1/2”	5.563”	3.937”	3 ½”	3.250”
5-1/2”	6.050”	4.500”	3 ½”	3.250”

E-mail: info@enesolservice.com www.enersolservice.com

ES - "T-2"

On-Off Tool

Completion Equipment

ES - "T-2" ON - OFF TOOL

The EST-2 On-Off Tool is tubing disconnect device that has an internal blanking plug locking profile with seal bore for utilizing flow control equipment. The Overshot has a box looking up which connects to tubing string and a pin looking down off the Stinger which connects to the packer. The WT has two basic components that comprise the Overshot. The Top Sub which contains two Bonded rubber steel seals and the Jay Latch which has a J Slot configuration to locate and latch the On-Off Tool Stinger. The Jay Latch also has a wash over shoe configuration which allows cutting through debris. The Overshot automatically Jays up on Stinger when lowered into well.

Applications

Mechanical, hydraulic or Wire line-set packer completions

Zonal isolation above the packer

Temporary abandonment of lower zones

Tubing retrieval without disturbing the packer

Features and Benefits

The tool enables the packer to be used as a bridge plug for zonal iso lation or the temporary abandonment of lower zones, saving rig costs.

The tool can be full-pressure tested at the surface to save rig time.

Available in All API material grades

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections

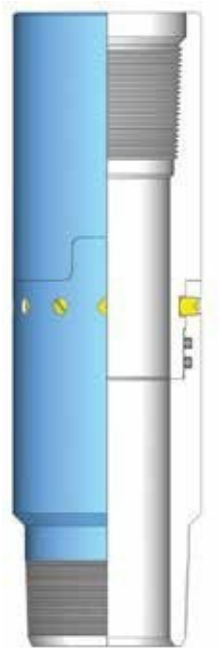
EST-2 On-Off Tool specification guide

Casing Size	Washover Shoe OD (In.)	Thread Connection	Stinger or Slick Joint Locking Profile
4-1/2"	3.750	2-3/8"	1.812, 1.875, X, XN, R, RN, F, R
5-1/2"	4.516	2-3/8" & 2-7/8" EUE	1.812, 1.875, 2.125 X, XN, R, RN, F, R
7"	5.875	2-3/8" 2-7/8" & 3-1/2" EUE	2.313, 2.250, 2.750, 2.813 X, XN, R, RN, F, R
9-5/8"	8.255	3-1/2" & 4-1/2 EUE	2.750, 2.813, 3.312 X, XN, R, RN, F, R

ES - K Shear Out Safety Joint

Completion Equipment

ES-K SHEAR OUT SAFETY JOINT



Model ES-K Shear out Safety Joint provides a means of releasing the tubing string from the rest of the completion in an emergency. A straight pull separates the tool at a predetermined shear value. The Model K Shear Safety Joint allows torque to be transmitted through the tool without affecting the shear screws.

Features and Benefits

The shear value is field adjustable.

Allows the application of torque without affecting the shear screws.

Field proven design.

Additional sizes available on request.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections

ES- Shear out safety Joint specification guide

Tubing Size	Tool OD (In.)	Tool ID	Max. Shear (Lbs.)
2-3/8”	3.062	1.985	54,000
2-7/8”	3.640	2.485	54,000
3-1/2”	4.500	2.985	60,000
4-1/2”	5.563	3.985	108,750

E-mail: info@enesolservice.com www.enersolservice.com

ES - RS Rotational Safety Joint

Completion Equipment

ES-RS ROTATIONAL SAFETY JOINT

The model ES-RS Rotational Safety Joint provides for emergency release of the tubing string. The RH Rotational Safety Joint uses larger square left-hand threads to separate the upper and lower subs with right-hand rotation abandoning any production equipment below.

Features and Benefits

The shear value is field adjustable.

Field proven deign.

Additional sizes available on request.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections

ES-RS Rotational Safety Joint specification guide

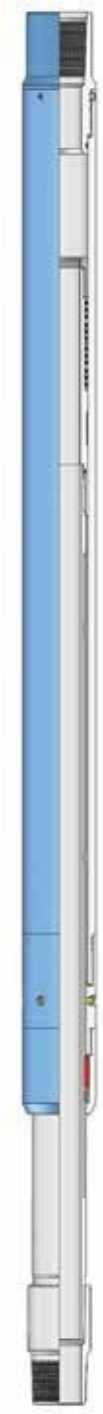
Tubing Size	Tool OD (In.)	Tool ID (In.)
2-3/8”	3.062	1.985
2-7/8”	3.640	2.485
3-1/2”	4.500	2.985
4-1/2”	5.563	3.985

ES - NR Expansion Joint

Completion Equipment

ES-NR EXPANSION JOINT

The ES-NR Expansion Joint is designed to allow expansion or contraction of the tubing during injection, treating and production operations. The Expansion Joint is designed to transmit torque throughout the stroke of the tool. Pressure is contained with a bonded seal system as standard equipment. Premium seals are available upon request.



Features and Benefits

Tool locks in fully extended, fully collapsed or mid-stroke position with shear screws.

Full-length keys provide transmission of torque through full length of travel.

Torque transmitted through tool throughout stroke of tool.

Shear values are field adjustable.

Bonded HNBR seals standard equipment.

Available in 4, 6, 10, 15, 20 feet stroke length standard other lengths available upon request.

Temperature rating up to 325° F [162,78°C] standard Higher temperature rating determined by seals used.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements

Available in All API & premium thread connections

ES-NR Rotational Safety Joint specification guide

Tubing Size	Tool OD (In.)	Tool ID (In.)
2-3/8”	3.260	1.990
2-7/8”	4.000	2.409
3-1/2”	5.010	2.990
4-1/2”	6.375	3.938

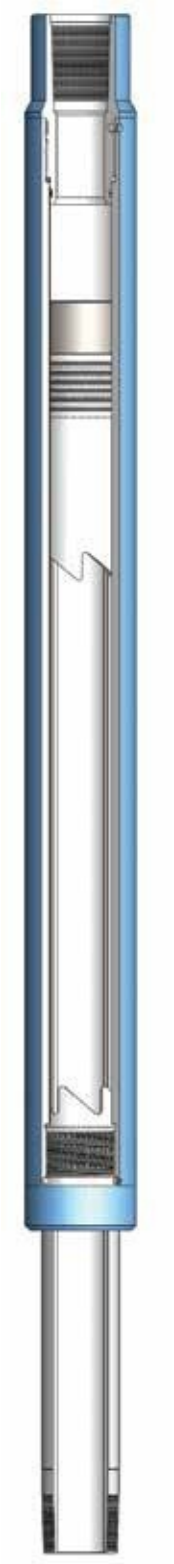
E-mail: info@enesolservice.com www.enersolservice.com

ES - E Rotational Expansion Joint

Completion Equipment

ES-E ROTATIONAL EXPANSION JOINT

The ES-E Expansion Joint is designed to allow expansion or contraction of the tubing during injection, treating and production operations. The E joint is also a swivel joint, unless extended to its full stroke when a clutch engages and allows torque to be transmitted through the joint. Pressure is contained with a bonded seal system as standard equipment. Premium seals are available upon request.



Features and Benefits

- Torque transmitted at full opening of tool.
- Bonded HNBR seals standard equipment.
- Available in4, 6, 10, 15, 20 feet stroke length standard. other lengths available upon request.
- Temperature rating up to 325° F [162,78° C] standard.
- Higher temperature rating determined by seals used.
- Available in All API material grades.
- Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.
- Available in All API & premium thread connections

ES-E Rotational Safety Joint specification guide

Tubing Size	Tool OD (In.)	Tool ID (In.)
2-3/8”	3.260	1.990
2-7/8”	4.000	2.409
3-1/2”	5.010	2.990
4-1/2”	6.375	3.938

ES - Polished Bore Receptacle

Completion Equipment

ES-POLISHED BORE RECEPTACLE

The ES PBR Polished Bore Receptacle is used in a well completion to provide a means of sealing the tubing to the top of the production packer while maintaining maximum ID. It can accept either a latching type or locator seal assembly. It is made up to the top of the packer and provides an upper seal bore to allow tubing retrieval without releasing the packer. The PBR is run with the seal assembly in place. Following tubing retrieval, the PBR can be released from the packer using the pulling tool and right-hand rotation.

Features and Benefits

Equipped with standard nitrile seals.

Upper Right-hand box thread to allow right-hand rotation to release PBR from the packer.

After packer setting and testing the locator seal assembly is released by straight pull on the tubing to shear the screws and allow space out.
Can accommodate locator seal assemblies.

Available in 5, 10, 15 and 20 foot lengths.

Allows tubing retrieval while leaving the packer and PBR in place.

Allows subsequent PBR retrieval with right-hand rotation pulling tool.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections.

		PBR		
Size Inches	Max. OD Inches	Min. ID Inches	PBR Length Feet (m)	Max Stroke Length Feed (m)
3.00	3.660	2.370	5.500	3.0
3.00	3.660	2.370	6.050	4.0
3.00	3.660	2.370	7.718	6.0
3.00	3.660	2.370	12.052	10.0
4.750	5.750	3.875	5.000	3.500
4.750	5.750	3.875	10.000	8.500
4.750	5.750	3.875	15.000	13.500
4.750	5.750	3.875	20.000	18.500

E-mail: info@enesolservice.com www.enersolservice.com

ES-TUBING SWIVEL

The ES Tubing Swivel is designed for use in multi string packer completions to facilitate their assembly. The Downhole Tubing Swivel allows easy makeup of the tubing by allowing rotation of the tubing below the dual string packer.

The tubing below the packer may be made-up to the lower end of the long string or short string of the packer without having to rotate the packer or the tubing below the packer simply by turning the swivel joint.

Features and Benefits

Field proven design.

Temperature rating up to 325° F [162,78° C] standard.

Higher temperature rating deter mined by seals used.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections.

ES-Tubing Swivel specification guide

Tubing Size	Tool OD (In.)	Tool ID (In.)
2-3/8”	3.062	1.985
2-7/8”	3.640	2.485
3-1/2”	4.500	2.985
4-1/2”	5.563	3.985

ES - Anchor Latch

Seal Assembly

Completion Equipment

ES-ANCHOR LATCH SEAL ASSEMBLY

The Anchor latch seal Assembly positions the seal units in the polished bore of the packer at the bottom of the available stroke. With a slight amount of set-down weight, the anchor latch will snap into the top thread of the packer mandrel or polished bore receptacle. This feature allows an upward pull to be applied to the tubing string to positively confirm proper location and operation.

To release the anchor latch, an upward pull combined with right-hand rotation of the tubing at the latch, release the anchor from the packer bore. The releasing mechanism of the anchor makes it ideal for completions where tubing movement is not desirable.

Applications

Single or multiple Zone completions

Features and Benefits

Field proven design.

Easy string-in and release procedure.

Available in Bonded, and V-type chevron seal units

Debris-tolerant standard bonded seal unit.

Prevention of Seal movement.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections

ES- Anchor Latch Seal Assembly specification guide

Size (mm)	Max. OD (In.)	Min, ID (In.)	Standard Top Connection
5.000 x 2.688”	3.500	1.950	2-3/8” EUE
5.500” x 3.000	3.820	2.350	2-7/8” EUE
7.000, 7.625 x3.250”	4.630	2.410	2-7/8” EUE
7.000, 7.625 x4.000”	5.290	3.040	3-1/2” EUE
9.625 x 4.750	7.000	3.280	3-1/2” EUE
9.625 x 6.000	7.000	4.870	4-1/2” EUE

E-mail: info@enesolservice.com www.enersolservice.com

Completion Equipment

ES-LOCATOR TUBING SEAL ASSEMBLY

The ES Locator Tubing Seal assemblies between the Packer Bore and are used with Seal Bore packer to production tubing string. provide leak-proof seal

Seal Type

The Bonded Seal is tolerantto damage from debris, tubing movement and un loading of seals under pressure. Standard Seal material is nitrile which is recommended for non H2S environments. For H2S environment Viton, HNBR and Aflas sealing system can be supply on request

LTSA have No Go locator Sub which allow the LTSA to land over the top of the packer. The LTSA supplied standard length 6, 10, 15 feet can be vary on request.

Features and Benefits

Seal are debris-and movement-tolerant

Bonded seals can be unloaded under differential pressure.

Seal unit used with anchors and Locators optimize seal placement in polished bores.

Provides with Concentric coupling and Bottom Sub to connect with Bottom tail pipe.

Provides with one feet seal length.

Provides necessary ID for other Wireline Tool.

Available in All API and premium Top connection.

Can be supply with the Blank, Half Mule, Locater latch type, and Threaded type Bottom Sub.

Available in all metallurgical and Elastomers conforming to

NACE MR 0175 or H2S, and suitable for standard normal/H2S,

CO2 well services requirement.

Have same pressure and temperature rating with tubing.

Recommended Min Seal bore ID of packer (in.)	OD (In.) of seal unit	Min. ID thru Seals Assy. (in.)	Pressure Rating (Psi)	Tubing Thread Connection
1.968	1.875	1	9,000	2-3/8” EU
2.687	2.673	1.963	9,000	2-3/8” EU
3	2.985	2.250	12,000	2-7/8” EU
3.250	3.234	2.375	10,000	2-7/8” EU
3.875	3.859	2.875	10,000	2-7/8” EU
4	3.984	3.030	10,000	3-1/2”EU
4.750	4.734	3.875	9,500	3-1/2”EU
6	5.984	4.875	9,200	4-1/2”EU

ES - Auto Orienting Bottom SUB with Half Mule

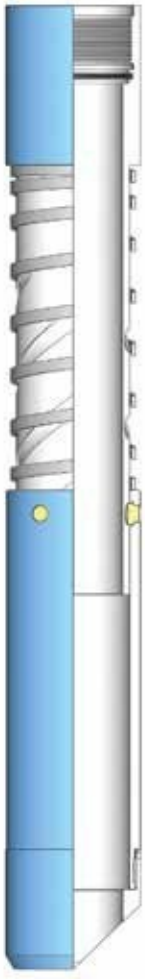
Completion Equipment

ES-AUTO ORIENTING BOTTOM SUB WITH HALF MULE SHOE

The bottom sub of LTSA is provided with double-start helical groove and two Guide Pins. Half Mule Shoe as shown in the accompanying illustration. The double start helix provides for uniform self-orienting action of the Half Mule Shoe to permit easy entry in the Packer bore.

Muleshoe guides provide a means to guide the end of the tubing away from the casing wall, and then enter liner tops or the packer bores. The length of the mule shoe varies with the application, from centralization, to seal guide and protection, to flow isolation sleeve.

Self-aligning mule shoe guides allow the end of the guide to rotate and orient with the liner top without rotation of the tubing. This tool is especially useful in dual wellbore or horizontal completions where control of tubing rotation downhole is difficult.



Features & Benefits

Can be supply with the Blank, Half Mule, Locater latch type, and Threaded type Bottom Sub.

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for standard normal/H2S,

CO_2 well services requirement.

Have same pressure and temperature rating with tubing.

E-mail: info@enesolservice.com www.enersolservice.com

Seal Bore Extension

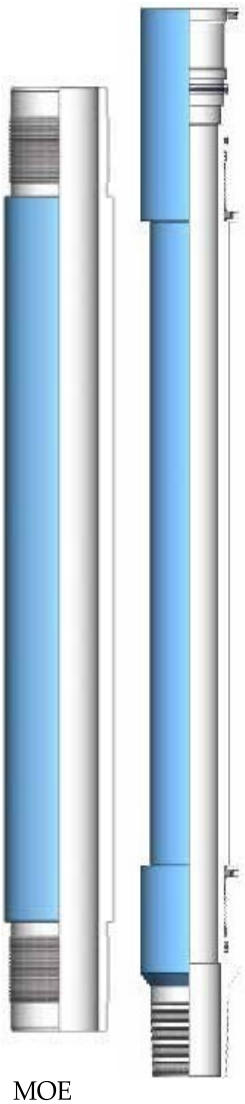
Mill out Extension

Completion Equipment

SEAL BORE EXTENSION

Seal Bore Extension can be run below Seal Bore Packer. A Sealbore extension is run to provide additional sealing bore when along seal assembly is run to accommodate considerable tubing movement.

The Seal Bore Extension has the same ID as corresponding Packer seal bore it is run with. Thus all seals of a long seal assembly seal off in in the Seal Bore Extension. If the top set seals, normally sealing in the packer bore should get damaged, the seal bore extension still get provide sealing surfaces for the lower seals



MOE

MILL OUT EXTENSION

Mill Out Extension can directly run directly below model Seal Bore production Packers when a Seal Bore Extension or other tailpipe is run below the Packer. Mill out Extension has ID slightly more than the seal bore id of Packer and Seal Bore Extension. The mill Out Extension is required to accommodate the Mandrel and catch the Sleeve of the Packer Milling Tool when the Packer milled up. The Mill out extensions should always be run directly below the Packe.

Features and Benefits

Connects below the Seal Bore Packer.

Having smooth ID equals to the Seal Bore of Packer provide better sealing.

Provide with Concentric coupling and Bottom

Sub to connect with Bottom tail pipe.

O-ring with Teflon Back up Ring provides high pressure and temperature.

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for stand ard normal/H2S, CO2 well services requirement.

Have same pressure and temperature rating with Packer Body.

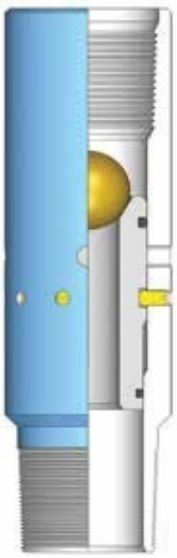
ES - Ball Actuating Circulating Valve

Presure Actuated Circulated Valve

Completion Equipment

ES-BALL ACTUATING CIRCULATING VALVE

The circulating valve was designed as a means of opening the tubing above a packer to permit reversing, equalizing, circulating, and spotting of acids or other fluids. The Shear pins prevent premature opening while running in the hole.The ES Ball actuated circulating sleeve is used as a means of opening the tubing to the annulus.



PRESURE ACTUATED CIRCULATING VALVE

The pressure-actuated circulating sleeve is used as a means of opening the tubing to the annulus. The shear pinned outer sleeve is displaced once the predetermined opening pressure is applied. The sleeve does not require the aid of a wireline sinker bar or ball such as the B bar/ball sleeve does.

Features and Benefits

Rugged heavy duty collet allows repeated use.

Large by-pass area.

Full bore I.D. matching the packer bore.

Remains open when running or retrieving thus minimizing swabbing tendencies.

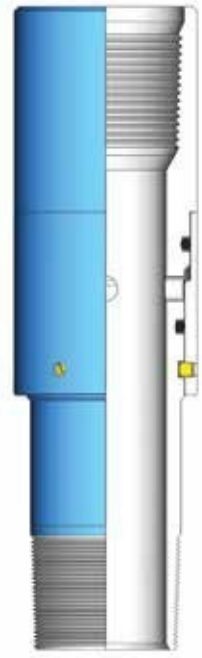
Available in all metallurgical and Elastomers conforming to

NACE MR 0175 or H2S, and suitable for standard Normal / H2S, CO2 well services requirement.

Have same pressure and temperature rating with Packer Body.

Available in all metallurgical and Elastomers conforming to NACE MR 0175 or H2S, and suitable for stand ard normal/H2S, CO2 well services requirement.

Have same pressure and temperature rating with Packer Body.



ES-Circulating Valve specification guide

Tubing Size	Tool OD (In.)	Tool ID (In.)
2-3/8”	3.750	1.985
2-7/8”	4.515	2.485
3-1/2”	4.500	2.985
4-1/2”	5.563	3.985

ES-E Hydrotrip

Pressure SUB

Completion Equipment

ES-E HYDROTRIP PRESSURE SUB

The ES Model E Hydro-Trip Sub is used to hydraulically set tools, such as hydraulic packers with the application of tubing pressure. Setting is achieved by circulating a ball to a seat in the sub, and applying sufficient pressure to activate the setting mechanism in the tool below.

When further pressure is applied to the ball, the mechanism shears, allowing the ball to pass down the tubing string. After the Hydro-Trip Sub has been set, the tool provides an open bore for passage of drop balls or wireline equipment.

Operation To set a hydraulic packer, drop or circulate a ball down the tubing to the seat in the HydroTrip Sub. Apply sufficient tubing pressure to activate the setting mechanism in the packer. After the packer is set, a pressure increase shears the shear screws in the shear ring, to allow the ball seat to move down until the fingers snap back into a groove. The sub is then fully open with no restrictions to productions, and the ball passes on down the tubing.

Applications

Temporary plug in tubing for setting hydraulically actuated packers.

Features & Benefits

Works in single and dual completions.

Can be run in any location in the tubing string.

Single body joint with anti-torque lock screws full tubing ID post shear.

Shear value can be adjusted Circulation available prior to ball drop.

Available in All API material grades.

Available in material conforming to NACE MR 0175 or H2S, CO2 well environment services requirements.

Available in All API & premium thread connections.

Have same pressure and temperature rating with Packer Body.

ES-E Hydrotrip Pressure Sub specification guide

Tubing Size	Tool OD (In.)	Tool ID (In.)
2-3/8”	3.750	1.985
2-7/8”	4.515	2.485
3-1/2”	4.500	2.985
4-1/2”	5.563	3.985

ES-Blast Joint

ES-Perforated non-Perforated

Completion Equipment

ES-BLAST JOINT

Flow couplings / Blast joints are installed in the tubing opposite perforations in wells with two or more zones. These are heavy walled and are sized to help prevent tubing damage from the jetting action of the zone perforations. It should be installed above and below landing nipples or other restrictions that may cause turbulent flow. Help to extend the life of the well completion.

Basic applications are to help inhibit erosion caused by jetting action near perforations, installed opposite perforations in one or more zones. Furnished in various grades of materials with required end connections and different lengths to meet our customer's as well as API standard requirements.

* Blast joint are available in all apigrade material and api threads other theard & meterial is available up on request

ES-PERFORATED / NON - PERFORATED SPACER TUBE

The Perforated Spacer Tube is used at the end of a tubing string to provide an alternate flow path in cases where wire line measuring devices are used. The Perforated Spacer Tube is made of low grade material and its assembly consists of a perforated nipple with standard tubing thread, a crossover coupling up, and a crossover sub down. Perforated Spacer Tube are available with special box thread up and pin thread down, upon request.

The Non-Perforated Production Tube is made-up at the bottom of the production string. Its basic purpose is to act as a stinger (or extension) to keep the packer flapper valve open when producing or when working below the packer.

* Perforated / Non Perforated spacer tube are available in all API Grade Material & API threads. Other Material & threads are also available upon request.

E-mail: info@enesolservice.com www.enersolservice.com

ESC - 1 Tubing Anchor Catcher

Completion Equipment

ESC-1 TUBING ANCHOR CATCHER

The ES MODEL C-1 Tubing Anchor Catcher is a retrievable Double Grip Tubing Anchor designed to anchor the tubing string in tension or compression. When installed with the proper amount of tubing tension, this anchor prevents movement of the tubing string during rod pumping operations. This result in more oil production per pump stroke and in turn extends the life of the pump, rods and tubing decreases pumping costs.

The ESC-1 Anchor Catcher incorporates an emergen cy shear release which is easily adjustable in the field.

Unless otherwise specified, anchors are furnished with a total of 50,000 lbs secondary release shears.

The SC-1 Anchor utilizes drag block backed up by Inconel leaf springs which results in more positive drag, thus reducing repair costs by at least 50% of the cost for repairing older drag spring designs.

Features & Benefits

Increase Pump efficiency.

Left hand rotation to set and right hand to release.

Straight pull emergency release mechanism.

Field adjustable shear release value.

Improve operating costs by reducing maintenance and down time cost by tubing or sucker rod wear

Case hardened double grip Slips having 50-56 HRc Hardness are suitable to set inside all API casing grade

Drag Blocks are for setting and releasing control.

When the anchor catcher has been sheared the slips are completely retracted, permitting the slips to move up or down thus eliminating the potential damage on anchor catcher, tubing or casing.

Model ESC-1 Tubing Anchor Catcher Technical information

Casing		Recommended	Gauge OD	Min.	**Thread
Size	Weight (lbs/Ft)	Casing ID Size	Of Packing (In.)	ID Of Packer	Connection
4-1/2”	9.5-13.5	3.910” - 4.090”	3.75”	1.9	2-3/8” EU
5”	11.5-18	4.276” – 4.560”	4.12”	1.9	
5-1/2”	13.0-15.5	4.950” - 5.190”	4.62”	2” or 2.42”	2-3/8” or 2-7/8” EU
	20.0-26.0	4.548”- 4.778”	4.50”		
6-5/8”	20.0 – 32.0	5.675”- 6.049”	5.50”	2” or 2.42”	2-3/8” or 2-7/8” EU
7”	17.0-20.0	6.456”- 6.538”	6.25”	2.42” or 3.00”	2-7/8” or 3-1/2” EU
	20.0-38.0	5.920”- 6.456”	5.55”		
7-5/8”	24.0-39.0	6.625”- 7.025”	6.25”		
8-5/8”	24.0-49.0	7.511”- 8.079”	7.00”	3.00”	3-1/2” EU
9-5/8”	32.3-47	8.681” – 9.001”	8.25”		

ES - Bridge Plug Boy

Bridge Plug

Completion Equipment

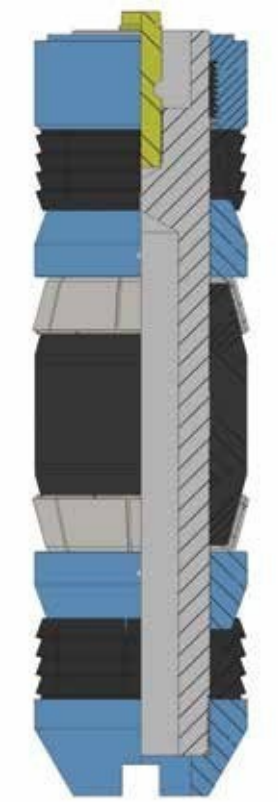
BRIDGE PLUG

A downhole tool that is located and set to isolate the lower part of the wellbore. Bridge plugs may be permanent or retrievable, enabling the lower wellbore to be permanently sealed from production or temporarily isolated from a treatment conducted on an upper zone.

We deal in Wireline/Hydraulic type bridge plug which we supply in two designs:

Big Boy bridge plug

Midget bridge plug



ES- BIG BOY BRIDGE PLUG

The Big Boy Bridge Plug has proven to be a product that can be depended on. It has excellent running characteristics and secure sets. The plug can be set on different types of wireline pressure setting tools. The Big Boy is designed for rapid drill-out while maintaining sufficient strength during the set. This plug sustains high pressures and temperatures.

Features & Benefits

Electric wireline set Drillable

Cast iron construction

One piece slips - hardened to depth of wicker only

Sets in any grade casing including P-110

Form-fitting metal back-ups prevent rubber extrusion

For temporary or permanent service

Ratcheting lock ring holds setting force

E-mail: info@enesolservice.com www.enersolservice.com

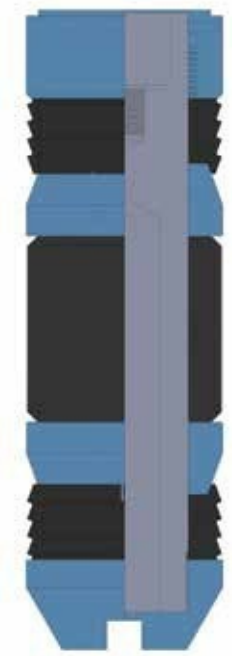
ES - Midget

Bridge Plug

Completion Equipment

ES- MIDGET BRIDGE PLUG

The Midget Bridge Plug Series provides an economical means of zone isolation for fracturing or other treatments. The plugs are compact and require less drilling time when being removed. The plug can be set on different types of wireline pressure setting tools. This plug sustains moderate pressures and temperatures.



Features & Benefits

Electric wireline set Drillable

Cast iron construction

One piece slips - hardened to depth of wicker only

Sets in any grade casing including P-110

For temporary or permanent service

Ratcheting lock ring holds setting force

Small O.D.'s for speed and safety when running

For temporary or permanent service

Ratcheting lock ring holds setting force

Small O.D.'s for speed and safety when running

Casing		Plug	Setting	Setting	
O.D	PPF	O.D.	Range	Tool	Elastomer
2-3/8	3.3-5.9	1.71	1.867-2.107	B05	NITRILE/HNBR/ VITON/AFLAS
3-1/2	5.7-10.2	2.75	2.867-3.258	B10	
4-1/2	9.5-15.1	3.50	3.826-4.090	B10	
5-1/2	13.0-25.0	4.24	4.580-5.047	B20	
7.0	17.0-35.0	5.61	5.989-6.655	B20	
9-5/8	29.3-53.5	7.71	8.435-9.063	B20	
13-3/8	48.0-72.0	12.0	12.347-12.715	B20	

ES - Wireline Set Retrievable Bridge Plug

Completion Equipment

ES-WIRELINE SET RETRIEVABLE BRIDGE PLUG

The ES WR Retrievable Bridge Plug is a premium quality high performance WR style bridge plug. The WR Retrievable Bridge Plug is a product designed to isolate the well bore when performing treatments such as fracturing, acidizing, surface equipment maintenance or temporary suspension of a producing formation. The WR is generally set using electric line wireline. This allows the plug to be logged on depth and accurately placed in the well. With the use of the ES "H" Hydraulic Setting Tool the WR can also be conveyed into the well by Jointed or Coiled Tubing. This method allows the operator to place the plug in a deviated well where wireline is not an option. The WR can be retrieved using Tubing, Coiled Tubing or in some cases Wireline by using the WR Retrieving Head. To retrieve the WR simply requires a set down force then pull tension to release there is not rotation required to pull the plug. Our WR Bridge Plugs are pressure tested by top quality third party consultants to the most exacting standards of the industry to ensure reliability for your operation.

Features and Benefits

- Can be set by hydraulic setting Tool/Wireline set
- Bidirectional Slip
- Three element sealing system to provide superior pressure containment
- Built in differential pressure equalizing system
- WR will not release unless equalizing sleeve has been shifted
- Ability to hang pressure recorders One piece double acting slips to prevent movement in the casing
- Multiple retrieving option

E-mail: info@enesolservice.com www.enersolservice.com

ES - Wireline Set Retrievable Bridge Plug

Completion Equipment

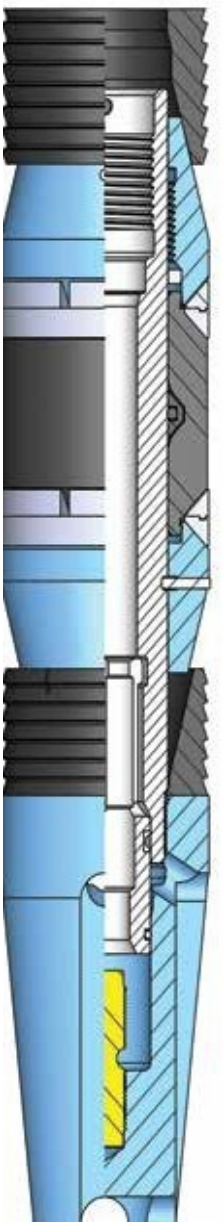
ES-WR Bridge Plug technical specification

Casing		Setting	Plug	Setting	
O.D	PPF	Range	O.D (Inch)	Tool	Elastomer
3-1/2	7.7 - 10.2	2.922 - 3.068	2.700	B05	NITRILE/HNBR/ VITON/AFLAS
4	9.5 - 11.0	3.476 - 3.548		B10	
	10.46 - 12.95	3.340 - 3.476	3.187		
s4-1/2	9.5 - 13.5	3.920 - 4.090	3.750		
	13.5 - 15.1	3.826 - 3.920	3.650		
	15.1 - 16.6	3.754 - 3.826	3.625		
5	11.5 - 15.0	4.408 - 4.560	4.125	B20	
	18.0 - 21.0	4.154 - 4.276	3.969		
5-1/2	13.0 - 20.0	4.778 - 5.156	4.625		
	20.0 - 23.0	4.670 - 4.778	4.500		
	23.0 - 26.0	4.548 - 4.670	4.406		
7	17.0 - 26.0	6.276 - 6.538	5.969		
	26.0 - 32.0	6.094 - 6.276	5.875		

ES - Cement Retainer

Completion Equipment

ES - CEMENT RETAINER



Wireline/Hydraulic set cement retainer is a high quality tool for squeeze cementing. The sleeve valve is controlled from the surface by simply picking up to close and setting d o w n to open. The valve is automatically closed when the stinger is removed from the retainer. This retainer plug sustains high pressure and temper- ature. It may be set on a Wireline/ Hydraulic setting tool or mechanically by changing the top slips. It can also converts to a bridge plug by replacing the sliding sleeve by solid plug.

Features

Electric Wireline/Hydraulic set / Mechanical set.

Drillable.

Cast iron construction.

One piece slips - hardened to depth of wicker only.

Sets in any grade casing including P-110.

Metal back-up rings prevent rubber extrusion

For temporary or permanent service

Ratcheting lock ring holds setting force.

Temperature rating 325°F.

Differential pressure 10000 psi

Casing		Plug/Retainer	Setting	Setting	
O.D	PPF	O.D	Range	Tool	Elastomer
4-1/2	9.5-15.1	3.593	3.826-4.090	B10	NITRILE/HNBR/ VITON/AFLAS
5-1/2	13.0-23.0	4.312	4.670-5.118	B20	
6-5/8	17.0-34.0	5.375	5.959-6.135	B20	
7.0	32.0-38.0	5.375	5.959-6.135	B20	
7.0	17.0-35.0	5.687	6.004-6.538	B20	
9-5/8	29.3-53.3	8.125	8.435-9.063	B20	
10-3/4	32.7-51.0	9.437	9.660-10.192	B20	
13-3/8	48.0-72.0	12.000	12.175-12.715	B20	

E-mail: info@enesolservice.com www.enersolservice.com