

BECOME TRULY DIGITAL LIVE WELL DATA IS KEY

DESCRIPTION

LBA is a packer specifically designed for well intervention applications where it is undesirable to use a rig. The LBA can be run and retrieved on slickline, e-line, CT. It can be used for several applications including bridge plug, straddle, hanging nipples, and locating pressure pulse wireless gauges in a wellbore. LBA can be set using a Baker Size 10 setting tool and retrieved with an Otis Size 4" GS pulling tool.

BENEFITS AND FEATURES

Well intervention, or "rigless" operations save time and money compared to rig workovers. LBA can seal or straddle unwanted production, hang nipples or flow control devices, or provide a sealed anchor for the Wimo Downhole Wireless Gauge. LBA can be used in both permanent and temporary applications.

APPLICATIONS

- Bridge Plug
- Straddle
- Sealed Nipple Hanger
- Flow control sealed hanger
- Sealed Hanger for Wimo Wireless Downhole Gauge
- Permanent or temporary use

SPECIFICATIONS

	Description	Size 363-450
Tool OD:		3.625"
Tool ID:		2.360"
Casing Size and Weight:		4-1/2" 12.6 – 15.2 lbs/ft
Min/Max Setting ID:		3.750 – 4.075 inches
Tool Weight:		90 lbs
Pressure Rating:		500 psi
Temperature Rating:		150°C
Overall Length:		3.75 ft
Tool Material / Condition:		4140 22Rc Max / L-80 per API 5CT
Packing Element Material / Hardness:		Aflas or HNBR / 80 Shore A Hardness
Setting Tool:		Baker Size 10 setting tool
Setting Force / Stroke:		22,000 lbs / 2.36"
Releasing Tool:		Otis 4" GS Pulling Tool



Large Bore Anchor

Description

The Large Bore Anchor (LBA) is a packer designed to locate downhole sensors such as Wimo Wireless Downhole Gauge. The anchor can be set by any conventional setting tool on slickline, wireline, or coiled tubing and can be retrieved on slickline with an Otis Model “GS” pulling tool, size 4” and mechanical spang jar.

Specification Guide

Casing				Packer				
Tubing OD (inch)	Weight (#/ft)	IDs Packer May Be Set		Size	Max OD (inch)	Nominal ID (inch)	Setting Force (Lbs)	Pulling Tool Size
		Min (inch)	Max (inch)					
4-1/2	12.6-15.2	3.750	4.075	363-450	3.625	2.360	22,000	4” GS

Table 1: Specification Guide

Features

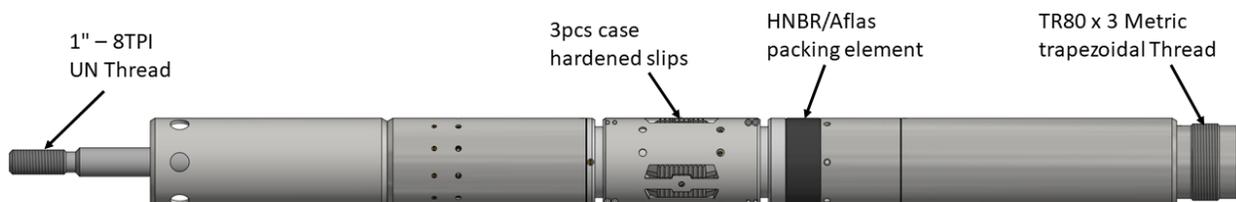


Figure 1: LBA features with running interface attached

Dimensions

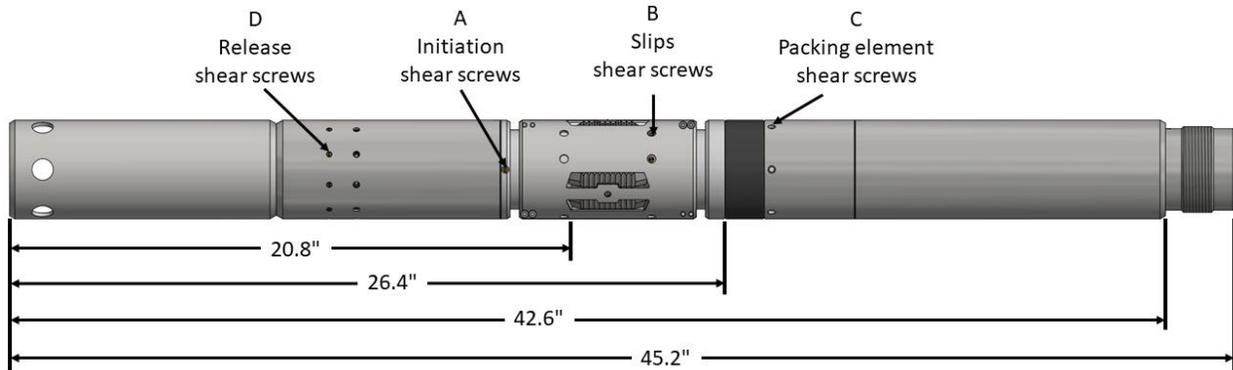


Figure 2: LBA External Dimensions

Shear Sequence

All shear screws are size M6, brass, with a shear force of 1300 lbs each. Screws can be placed in four different locations as shown in Figure 1 and Table 2. It is important that the proper number of screws are located in each position, so the setting sequence occurs in the correct order. Please contact www.wins.no if a different sequence of shear screws is desired beyond those given in Table 2.

Shear Sequence Option:	A Setting Initiation	B Slips	C Packing Element	D Release
Option 1	3	2	3	3
Option 2 - Preferred	4	3	4	4
Option 3	5	4	5	5
Option 4	6	5	6	6

Table 2: Shear Screw Options

Wireline Adapter Kit Assembly Procedure

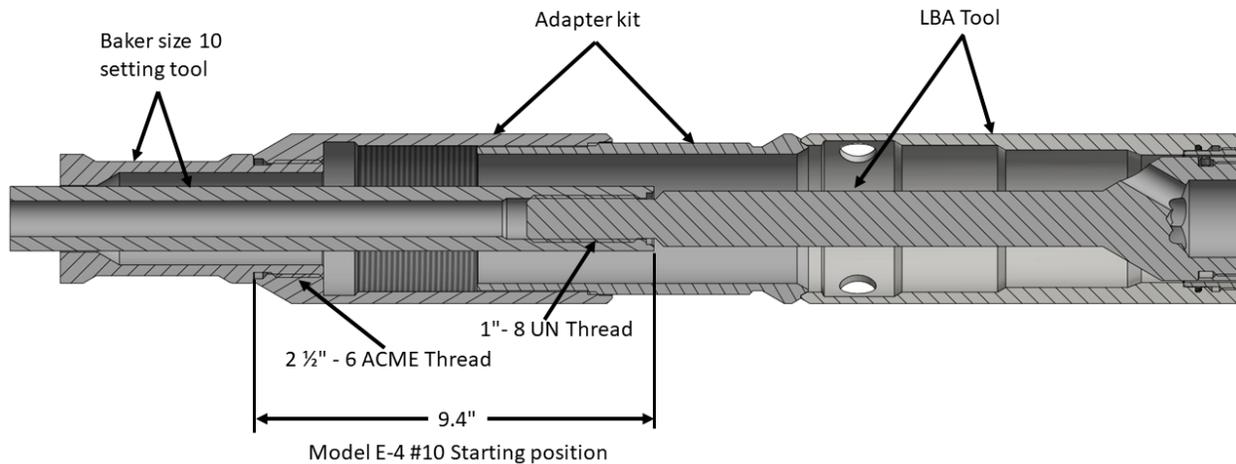


Figure 3: Wireline Adapter Kit

- 1) Attached the LBA to setting tools like the E-4 Wireline Pressure Setting Assembly (WLPSA) using an adapter kit as shown in Figure 2.
- 2) Screw the First Adapter Kit Sleeve onto the Outer Sleeve of the E-4 WLPSA and bump tight with a wrench.
- 3) Make up the Second Adapter Kit Sleeve onto the First Sleeve and wind all the way back (hand tight) to make plenty of room for make-up space.
- 4) Screw the LBA onto the Rod of the E-4 and bump tight with a wrench.
- 5) Adjust (rotate) Second Adapter Kit Sleeve down to touch the Top Sub of the LBA and back off until set screw on adapter sleeve matches with 1 of 2 set screw slots. Secure with M6x6 set screw. Assembly is now ready to run in the hole.

Running and Setting Procedure

- 1) All equipment used should be compatible with the LBA and the well. Ensure that LBA Running Procedure Checklist P00133.AAP.003.01 has been completed.
- 2) Conduct a gauge ring dummy run into the well to make certain a clear path to setting depth is achievable.
- 3) If LBA is attached to the setting tool in horizontal position, loosen Second Adapter Kit Sleeve and ensure 1/8" gap with the LBA Top Sub prior to lifting horizontally. This is to prevent bending and presetting the LBA during lifting of the assembly. Once fully vertical, adjust (rotate) Second Adapter Kit Sleeve down to touch the Top Sub of the LBA and back off until set screw on adapter sleeve matches with 1 of 2 set screw slots. Secure with M6x6 set screw.
- 4) Insert BHA into the lubricator, secure to the wellhead, and pressure test. Equalize lubricator internal pressure with wellhead tubing pressure, then open the wellhead main and crown valves.
- 5) Run the LBA BHA into the well at a maximum speed of 120 ft/minute, slowing down while passing restrictions. Should the LBA hang up at any point, pull the BHA up 3 ft and try again.

WARNING: Do not use jars to “tap” the BHA through a restriction as this may cause the LBA to preset. It is at the discretion of the operator as to how many attempts may be made to pass any restriction. Retrieve the BHA and rerun a gauge ring dummy run with a larger OD, then go back to Step 3.

- 6) After reaching the required setting depth, run 20 ft below the required depth and pull BHA up until the required depth has been reached.
- 7) Electrically activate the setting tool, or wait for the timer to expire, whichever is appropriate. When the setting tool releases, considerable weight should be lost from the weight indicator. This is a successful set.
- 8) Retrieve the setting tool assembly from the well, setting procedure successfully completed. If not, then continue.
- 9) If weight is not lost from the weight indicator, then a misfire has occurred. Repeat fire. If still no change, then retrieve BHA from well, assess the problem, and restart procedure from the beginning.
- 10) If tool is stuck in the well, gradually increase tension to pull out of the rope socket or trigger emergency release, whichever is appropriate. Retrieve wireline from the well. Go to Fishing Procedure.

Retrieving Procedure

- 1) All equipment used should be compatible with the LBA and the well. Ensure that LBA Pulling Procedure Checklist P00133.AAP.004.01 has been completed.
- 2) Make up a mechanical spang jar and weights to a 4" GS pulling tool.
- 3) Run pulling equipment to LBA depth, tag the top of LBA, and take note of the depth.
- 4) Pull string and observe if any overpull can be confirmed. If not, then land the GS pulling tool on top of LBA and jar downward carefully to latch the GS without shearing the GS emergency release. Repeat until overpull (latching) has been confirmed. It is at the discretion of the operator as to how many attempts may be made to latch onto the LBA.

CAUTION: If GS pulling tool cannot be latched onto the LBA, retrieve GS tool and run a bailer to ensure that the tool is not covered with debris. Repeat retrieving procedure

- 5) After overpull confirmation, jar upwards 10 times and check if tool can be moved upwards. If successful, the LBA has released. Go to Step 9.
- 6) If tool is stuck, jar downwards 20 times, upwards 40 times, then check to see if the LBA moves upwards. If successful, the LBA has released. Go to Step 9.
- 7) If the tool is still stuck, wait 30 minutes for the packer element to relax and repeat Step 5 up to five (5) times until the tool can be moved upwards in the well. It is at the discretion of the operator as to how many attempts should be made to release the LBA. If possible, balance the pressure across the tool if DP is present and repeat procedure. If successful, the LBA has released. Go to Step 9.

- 8) If the tool is still stuck, repeat pulling sequence with heavier equipment (if available). Otherwise, gradually increase tension to pull out of the rope socket or trigger emergency release, whichever is appropriate. Retrieve wireline from the well. Go to the Fishing Procedure
- 9) Once the tool can be moved, wait 30 minutes for the packer element to relax before retrieving the tool.
- 10) When the LBA is released, pull out of hole at a maximum speed of 120 [ft/min], slowing down while passing restrictions.

Fishing Procedure

- 1) Use an internal cutting tool to cut 2.360" ID mandrel between 30" and 40" below the top of the tool. See Figure 3 for more fishing dimensions. Mandrel OD is 2.717" so it is best to limit OD of cutters to 2.80".
- 2) Run cutting tool to the proper depth, cut mandrel, and retrieve cutting equipment.
- 3) Run a spear suitable for 2.360" (60mm) Packer ID. Latch on and retrieve upper portion of the packer.
- 4) If the lower portion off the packer was not retrieved, run 2.360" spear again and latch onto the lower portion of LBA mandrel. Complete LBA tool should be retrieved from the well.
- 5) If all other attempts fail, the LBA should be milled. Locations for Slips and Packing Element can be seen in Figure 1.

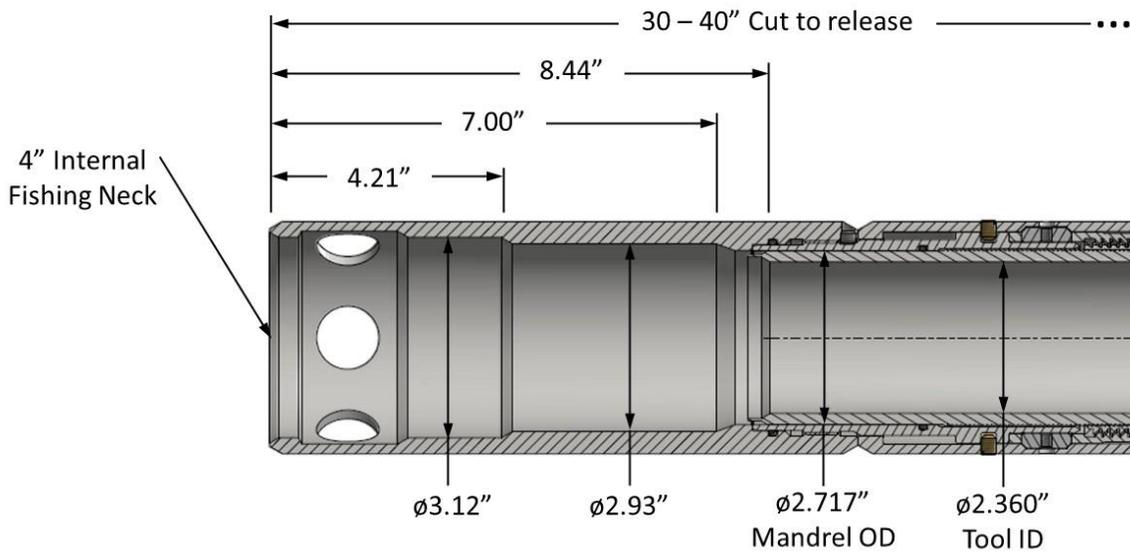


Figure 4: Internal Fishing Dimensions