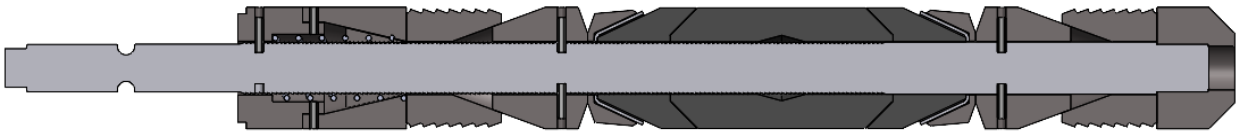
ALPHA Extra Range Bridge Plug

Let us introduce the Extra Range Bridge Plug: a specialized plug designed to navigate through restrictions and still securely set in larger diameters. Common obstructions like seating nipples often necessitate tubing removal before well service can proceed. However, the Extra Range Bridge Plug mitigates this need in many cases, streamlining operations and saving valuable time.

In the event that plug removal becomes necessary, it is advisable to employ a milling process. Given the plug's broad setting range, it is constructed from mild steels, making milling a more suitable and effective removal method. Trust in the reliability and efficiency of the Extra Range Bridge Plug for applications where that extra range is required.

Features:

- Wireline set. (GO)
- Not pressure rated.
- Millable.
- Sets in any grade tubing including P-110.
- Form fitting metal back-ups prevent rubber extrusion.
- Permanent service.
- Ratcheting lock ring holds setting force.
- Runs through restrictions to set in larger diameters.
- Can be upgraded to 400°F temperature rating upon request.
- Available sizes for setting range from 1.610 to 3.920 in.



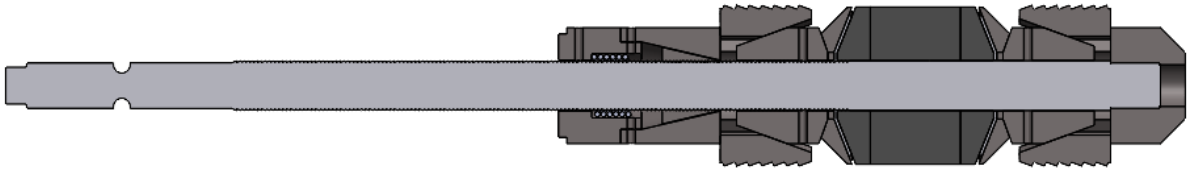
1750 Extra Range Bridge Plug illustration.

ALPHA EXTRA RANGE BRIDGE PLUG SIZE CHART

Part Number	OD (in)	Setting Range Min (in)	Setting Range Max (in)	Setting Tool
001-1406-000	1.406	1.610	1.995	GO 1.500
001-1750-000	1.750	1.905	2.441	GO 1.687
001-1906-000	1.906	2.156	2.765	GO 1.687
001-2187-000	2.187	2.375	3.000	GO 1.687/ 2.125
001-2281-000	2.281	2.441	3.170	GO 1.687/ 2.125
001-2500-000	2.500	2.625	3.500	GO 2.125
001-2750-000	2.750	3.187	3.920	GO 2.125

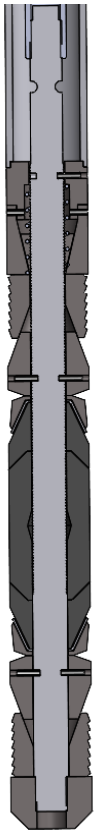
HOW THE ALPHA EXTRA RANGE BRIDGE PLUG WORKS

The Alpha Extra Range Bridge Plug is run into wellbore on wireline to the desired depth. The setting mechanism is triggered, causing the cone to push slips outward to grip the wellbore wall and compress the sealing element to form a tight seal. Once the slips are fully anchored and the packing element is compressed, the lock ring will secure the retainer in place. The Extra Range Bridge Plug features a longer and thicker second set of backup rings designed to work with larger inner diameters of tubing and longer cones for increased slip travel.

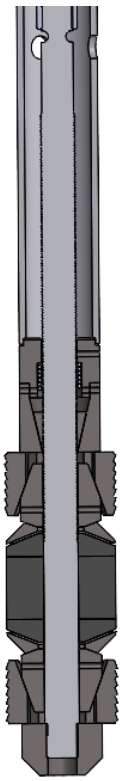


1750 Extra Range Bridge Plug in Set Position illustration.
(001-1750-000)

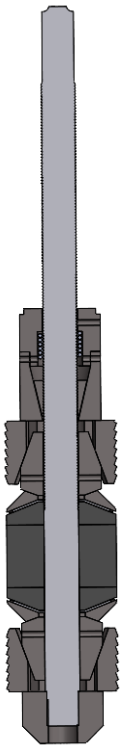
RUNNING GUIDELINES



RUN IN POSITION



INCREASE PRESSURE IN SETTING TOOL TO SET BRIDGE PLUG

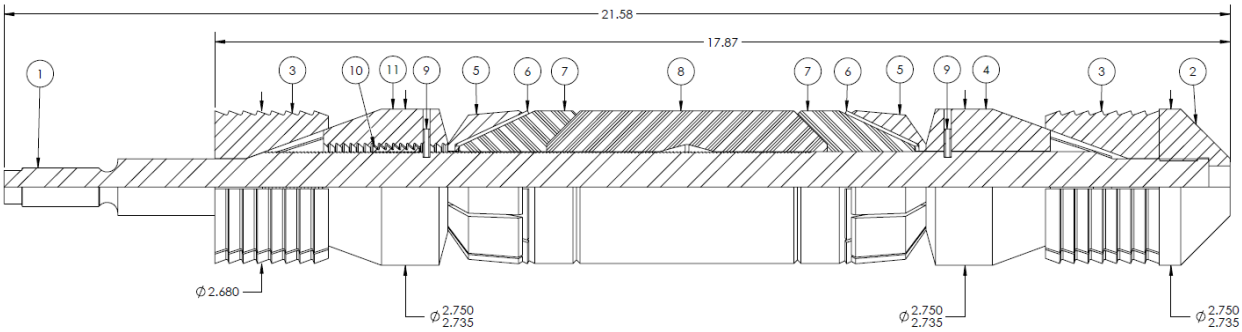


SHEAR STUD FRACTURES AND RELEASES THE SETTING TOOL FROM BRIDG PLUG

GUIDELINES FOR RUNNING
ALPHA EXTRA RANGE BRIDGE PLUG

1. Always follow cleaning, redressing and operational procedures on the setting tool. Make certain oil levels in pressure setting tool are correct for the well environment involved. Take into consideration the heat expansion of the oil in your manufacturers guidelines that should be supplied with your pressure setting tool.
2. Use the correct plug for the temperature, tubing size, tubing weight and environment.
3. Do not overtighten the plug onto setting tool. This action causes the slips to crack which leads to premature setting. Snug tight is sufficient for the plug.
4. Do not allow the setting tool weight to rest on the plug after making up. This can cause the slips to crack.
5. Help guide the setting tool and the plug through lubricators, wellhead and blowout preventer. When running under pressure raise tools to the top of lubricator before equalizing the pressure into lubricator.
6. Running speed should not exceed 300 feet per minute to avoid fluid displacement cutting on elastomer. Should setting tool misfire, retrieve equipment no faster than it went in. Slow down for liners and other restrictions.
7. Never set plugs in casing collar or where milling has occurred.
8. Always set plugs in static well conditions (no fluid or gas movement).
9. Shock to the plugs can result in failure. Warn service companies of the plug depth to avoid high impact collisions. Never use a plug for a reference point (tagging) before cement job is completed.
10. Pressure setting tool failure can result from several causes (ex: out of date power charge or bad O-ring). In the event that a pressure setting tool does not shear off of the plug and you have to pull out of the rope socket, the shear stud will still part in a normal manner when the setting tool is fished out. This happens most commonly because the power charge did not put up sufficient pressure to shear the stud in the retainer. The Alpha studs are made to shear correctly and are held to high standards of accuracy. When the fishing tool goes in to retrieve the setting tool, you can watch the accuracy of the shear stud when it shears, assuming that the weight indicator is not out of calibration.
11. When perforating, the plug should be protected with a minimum of ten feet of cement dumped directly on top of the plug. Cement should be given sufficient time to harden before perforating. Perforating should not be done closer than fifty feet of bridge plug.
12. Perforating should not be done closer than fifty feet of the plug without putting a minimum of 10 ft. of hard cement on top of plug.

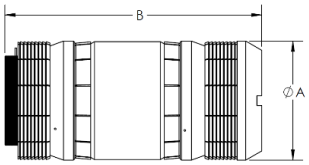
ALPHA EXTRA RANGE BRIDGE PLUG PARTS LIST



2750 EXTRA RANGE BRIDGE PLUG ILLUSTRATION (001-2750-000)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	001-2750-006	BODY	1
2	001-2750-007	SHOE	1
3	001-2750-011	SLIP	2
4	001-2750-009	CONE	1
5	001-2750-016	OUTER METAL BACK-UP	2
6	001-2750-015	INNER METAL BACK-UP	2
7	001-2750-017	END ELEMENT	2
8	001-2750-018	CENTER PACKING ELEMENT	1
9	RP0125X50	ROLL PIN	4
10	000-2100-013	LOCK RING	1
11	001-2750-008	TOP CONE	1

ALPHA EXTRA RANGE BRIDGE PLUG DIMENSIONAL DATA



Part Number	Dim. "A"	Dim. "B"	Setting Sleeve	Shear Stud/Ring Value (lbs.)
001-1406-000	1.406	13.59	001-1406-100 (GO 1500)	6,500 – 8,000
001-1750-000	1.750	17.78	001-1750-100 (GO 1687)	10,000 – 12,000
001-1906-000	1.906	20.13	001-1906-100 (GO 1687)	10,000 – 12,000
001-2187-000	2.187	19.13	001-2187-101 (GO 1687) 001-2187-100 (GO 2125)	10,000 – 12,000
001-2281-000	2.281	19.63	001-2187-101 (GO 1687) 001-2187-100 (GO 2125)	10,000 – 12,000
001-2500-000	2.500	21.58	001-2500-100 (GO 2125)	21,500 – 24,500
001-2750-000	2.750	21.58	001-2750-100 (GO 2125)	21,500 – 24,500

Elastomer Compatibility Guideline Table:

Elastomer Type	Nitrile (NBR)	Hydrogenated Nitrile (HNBR / HSN)	Viton / Fluoroelastomer (FKM)	Aflas (TFE/P)
Low Temp Resistance, °F	-4	-4	5	100
Maximum Heat Resistance, °F	250	300	350	400
H_2S	Very Poor (<0.5%)	Poor (<1%)	Fair (<2%)	Very Good (<20%)
CO_2	Poor (<1%)	Fair (<2%)	Very Good (Unrestricted)	Very Good (Unrestricted)
Amine Inhibitors	Very Poor (Not Recommended)	Very Poor (Not Recommended)	Very Poor (Not Recommended)	Very Good (Unrestricted)
Zn & Ca Bromides	Very Poor (Not Recommended)	Very Poor (Not Recommended)	Very Good (Unrestricted)	Good
Xylene	Very Poor (Not Recommended)	Very Poor (Not Recommended)	Fair	Very Poor (Not Recommended)
HCl & HF Acid	Very Poor (Not Recommended)	Very Poor (Not Recommended)	Fair	Good
Toluene	Very Poor (Not Recommended)	Poor	Fair	Very Poor (Not Recommended)
Sulfuric Acid	Very Poor (Not Recommended)	Poor	Good	Good
Steam	Very Poor (Not Recommended)	Poor	Poor	Poor
Crude Oil	Very Good (Unrestricted)	Very Good (Unrestricted)	Very Good (Unrestricted)	Very Good (Unrestricted)
Methane	Very Good (Unrestricted)	Very Good (Unrestricted)	Very Good (Unrestricted)	Very Good (Unrestricted)
KCl & Salt Water	Very Good (Unrestricted)	Very Good (Unrestricted)	Very Good (Unrestricted)	Very Good (Unrestricted)

Recommended Drillout/Millout of Cast Iron Bridge Plugs or Cement Retainers

General

Preferred method is drilling with medium steel tooth tri-cone bit as it is usually faster than mill- out time for same bridge plug or cement retainer. Drilling results in a chiseling effect, where milling is more of a grinding or shaving effect of the targeted tool. Milling out also results in more debris that can hinder penetration as well as circulation to clear the targeted tool face. History has shown that utilizing a short to medium tooth hard formation rock bit to yield the best results.

Suggested Drilling Techniques

While best methods vary based on equipment, depth of objective, or other factors, Alpha Oil Tools suggests rock bit as suggested above with a rotary speed 75-120 RPM. Use drill collars as required to maintain necessary weight and bit stabilization.

To drill the bridge plug or cement retainer:

1. Apply 5000-7000 pounds until the top end of the retainer/plug mandrel is drilled (4-5 inches).
2. Increase weight to 2000-3000 pounds per inch of bit diameter to complete the drill out. For example, apply 9500 up to 14,250 pounds when using a 4.75-inch bit.

When circulating normally, place a junk basket above the bit. If using reverse circulation, any casing scraper or other equipment above the bit should have an inside fluid passage at least as large as that through the bit so as to allow any/all cuttings to be circulated clear. Utilize varying RPM’s and weight on bit to optimize drill out, especially if getting indications that penetration by the bit has slowed or stopped. Loss of penetration may occur by “bit tracking” usually caused by too little weight on the bit. Besides changing weight and RPM’s, bit tracking can be overcome by picking up the bit above the retainer, then re-engaging the objective while maintaining same RPM’s as before.

Drilling times are directly related to tool size, bit stability, bit type, weight/RPM's on bit, wellbore fluids, and pump rate/pressure. High viscosity fluids combined with high pump rates may result in sufficient hydraulic force and cause the bit to lift off the objective.

Suggested Milling Technique

If conditions mandate milling be used as the preferred removal method, it is recommended to use a concave junk mill, 60-150 RPM maintaining 5000-8000 pounds on the mill. Use a mud viscosity 60 cps with a minimum annular velocity of 120 ft/min for cuttings removal.

When ready to begin milling, start the mill above the target then slowly lower to the objective. Do not apply excess weight since this can cause “chunking” which will not allow cuttings removal and then slow the millout. If chunking does occur, it will be necessary for a bailer or junk basket to remove chunked debris before milling can resume. A constant milling rate will require added weight as milling progresses.