

Welltec[®] Annular Barrier (WAB[®])

Control Line Feedthrough



Through continued evolution of product design, we can now offer the WAB[®] with the added feature of multiple Control Line Feedthrough. This value adding feature now allows for the placement of hydraulically and electrically controlled downhole devices below or between WAB's set within open hole or cased hole.

Welltec[®]

Control line feedthrough



01 Applications

Through WAB communication of Hydraulically activated devices

ICV's for Multi Zone Open Hole Smart Wells (WAB Zonal Isolation)

Ball Valve for Dual Zone Smart Well (WAB for Zonal Isolation)

Through WAB communication of Electrically powered devices

Multiple Zonal Pressure Gauge for Open Hole Smart Wells (WAB for Zonal Isolation)

Downhole Pressure Gauge (WAB Production Packer)

Fiber Optic Feed Through for distribute temperature sensing across the reservoir (WAB for Zonal Isolation)

Suitable for all formation types and borehole geometries

02 Features

Upto 6 x 1/4" Control Lines

Hydraulic, TEC & Fiber Control Line Compatible

Rugged, All welded, Metallic Construction

Optional isolation of expansion port

Expansion assurance in multi-WAB applications

High Expansion Capability

Constant, High Pressure Δp over full expansion range

No premature expansion

NACE Compliant

03 Benefits

Removes need for Cement & Perforated Liner in Multi Zone Smart Well Applications

Optimises Production Bore in Multi Zone Smart Well Applications

Deployable through Milled Window

Slim OD allows for high rate circulation during deployment

Rapid Set nature of WAB reduces time to production

High Rate Circulation capability

Full Bore – as per Casing / Tubing

Incorporation of the Feedthrough WAB®, coupled with hydraulically controlled ICV & TEC DHPG, will significantly reduce CAPEX, time and complexity within a multi zone Intelligent Lower completions by removing the need for cementing & perforated a liner by affecting the open hole isolation with the Feedthrough WAB®.

WCS product specifications

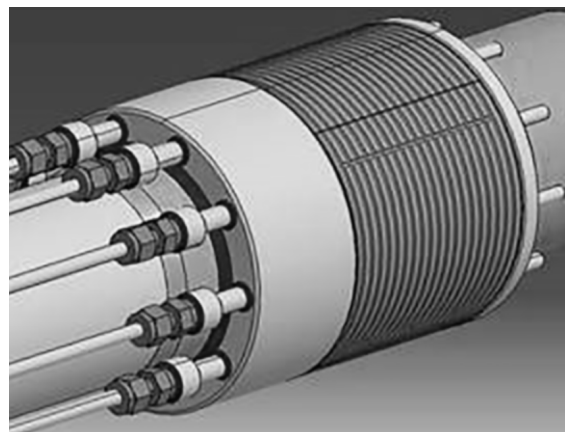
Welltec® WAB® FT	General Information
Product Name	Welltec® Annular Barrier (WAB®) c/w C-line feedthrough
Product Structure	Single Piece, Machined Sleeve – Fully Welded to Base Pipe
Seal Length	Up to 6m*
Base Casing	Compatibility with all Standard Casing Material / Weight / Threads
Standard Material	Alloy 28 / Super Duplex SST
Standard Elastomers & Seals	HNBR / Aflas / FFKM
Non-Elastomer Seals	PTFE
No. of Control Line	Upto 6 x ¼" control lines

* Additional Sealing Length can be modelled on request.

*Welltec® FT WAB®	612WAB	812WAB	1214WAB
Expansion range	6.50" > 7.50"	8.50 > 10.00" (215.9 > 254mm)	12.25 > 14.00" (311.1 > 355.6mm)
Minimum running OD	6.25"	8.180" (207.8mm)	11.380" (289.1mm)
ISO14310 Standard **	V0		
Maximum working pressure	6000psi (414bar)	10,000psi (689bar)	6000psi (414bar)
Constant element ΔP across expansion range	6000psi (414bar)	10,000psi (689bar)	6000psi (414bar)
Standard element lengths	Up to 20ft (6m)		
Temperature range ****	260°C (500°F)		
Base-pipe range (up to)	4 ½"	5 ½"	9 ⅞"
Number of C-lines - 1/4" (up to)	6"		
ID in (mm)	Full Bore (as per base-pipe)		

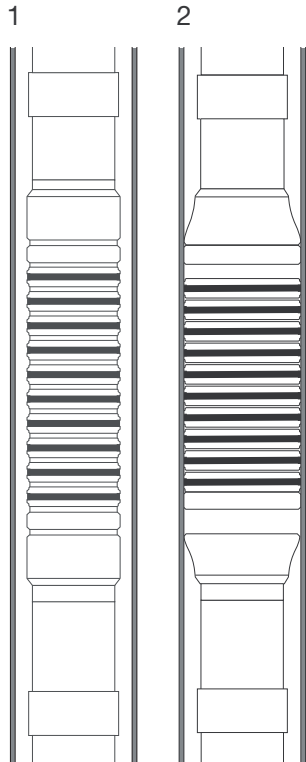
*Custom specification and control line feedthrough options available on request ** V0 Leak Criteria available on request for all WAB sizes

*** In development **** Maximum Temperature is based on FFKM seals & elements



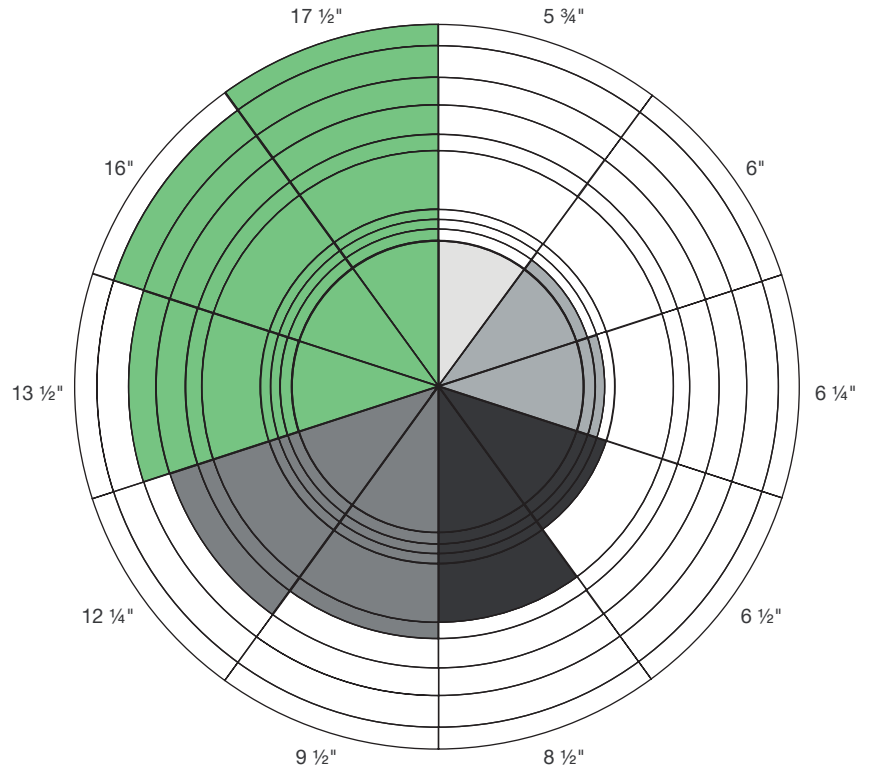
01. How it works

- 1: Mounted on base pipe
- 2: Hydraulic expansion controlled from surface



02. Our product range

Per open hole size.



03. The benefits

The WAB's metal construction provides a fast, high expansion, rugged seal against the open hole or casing irrespective of the fluid in the well. Furthermore, as shown in the chart below, there is no degradation of the maximum delta P capability versus expansion diameter.

- Conventional annular barrier Delta P
- 812WAB Delta P

Delta P

