



SAZ Oilfield

Cement Retainers

SAZ Oilfield Equipment offers a wide range of drillable Cement Retainers for single-interval squeeze, batch, or block squeeze cementing. Our **Hydrus™** line of Cement Retainers provide optimal strength and drillability for temporary or permanent wellbore isolation over a wide range of downhole conditions.

Application

- Multi-Zone isolation
- Multi-Zone stimulation
- Plug and Abandonment

Features and Benefits

- Available from 4-1/2" to 13-3/8" Casing Sizes
- Up to 10,000 psi & 400°F Rating
- Tubing can be tested before squeezing
- Convertible from Mechanical to Wireline Set and vice versa

Types

- Mechanical Set
- Wireline Set
- Holds final squeeze pressure and isolates squeeze from hydrostatic pressure
- Anti-preset mechanism
- Cast Iron construction, easily drillable



**Mechanical Set
Cement Retainer**

**Wireline Set
Cement Retainer**

Bridge Plug				
Casing		Plug	Setting Range (Inch)	Elastomer
OD (Inch)	Weight (PPF)	OD (Inch)		
3 1/2	7.7 -10.2	2.750	2.922 - 3.068	Nitrile / HNBR / Aflas / Viton
4 1/2	9.4 -16.4	3.500	3.754 - 4.090	
4 1/2	18.6 - 23.5	3.593	3.380 - 3.640	
5	11.5 - 21	3.710	3.920 - 4.560	
5 1/2	13.0 - 23.0	4.240	4.580 - 5.044	
6-5/8	17 - 34	5.375	5.575 - 6.135	
7	17.0 - 35.0	5.610	6.004 - 6.538	
7	32 - 38	5.375	5.920 - 6.094	
9 5/8	29.3 - 53.5	8.120	8.535 - 9.063	
10-3/4	32.7 - 51.0	9.437	9.850 - 10.192	
13 3/8	48.0 - 72.0	12.000	12.347 -12.715	

HydrusMS™ Mechanical Set Cement Retainers are deployed on Tubing or Drill Pipe and set by Snap Latch Setting Tool in compression. The large internal bypass prevents swabbing during running and retrieval. The bypass closes during Cement Retainer setting and opens during retrieval to enable pressure equalization before releasing the upper slips. The setting tool is released from the Cement Retainer by applying tension and back-up rotational release. The running string can be internally pressure tested before release.

HydrusWS™ Wireline Set Cement Retainers are deployed on Wireline and set via appropriate Wireline Pressure Setting Assembly (WPSA), Wireline Adapter Kit (WLAK) and Snap Latch Stinger Sub. When reaching the pre-determined depth, WPSA is actuated, the Tension Mandrel moves upward, pulling the body of the Cement Retainer up with respect to the setting sleeve of the WLAK, thereby setting and packing-off the Cement Retainer. Continued upward movement closes Control Latch inside the Retainer and the setting assembly with WLAK is retrieved once the Release Stud is sheared.

Snap Latch Stinger Sub is used to set Cement Retainers on wireline. It features a snap-in, snap-out type latch that provides a surface indication of the stinger being landed in or removed from the Cement Retainer thereby giving assurance that the sleeve valve is opened or closed.

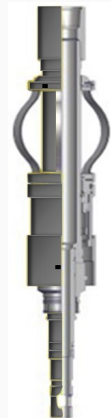
Snap Latch Setting Tool is used to set Cement Retainers and Bridge Plugs on jointed pipe. This tool contains a built-in snap-latch feature and is released by overpull or by rotating 10 turns towards right. The run-in string can be pressure tested before release. It can easily convert to Snap Latch Stinger Sub via a simple conversion kit.

Control Unit is made up above the Stinger Sub and provides a centering device for entering the Cement Retainer bore.

Plug Plucker is used for quick milling and retrieving of permanent Bridge Plugs and Cement Retainers. This tool offers customer ability to retrieve milled out Bridge Plugs and Cement Retainers instead of pushing them down, thereby allowing high performance Bridge Plugs or Cement Retainers to be safely set above a Liner.



Snap Latch Stinger Sub



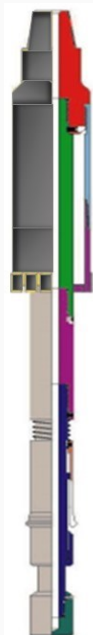
Snap Latch setting tool



Control Unit



Plug Plucker



SCJ



SCC



SCK

SAZ Oilfield Equipment offers various types of **Milling tools** to mill out and retrieve Permanent Bridge Plugs and Cement Retainers

SCJ™ Milling tool combines a Mill with an Overshot to mill over Permanent Bridge Plug / Cement Retainer and then retrieve the milled out assembly from the well.

SCC™ Milling tool is used to mill over Permanent Bridge Plugs / Cement Retainers and then push the milled out assembly to the bottom of hole.

SCK™ Milling tool combines a Mill with a Spear to mill over Permanent Bridge Plug / Cement Retainer. Once the outside portion is milled out, the Spear latches into and retrieves the plug body.