



Mission Blak-JAK Liner Retention System

The Mission™ Blak-JAK™ liner retention system consists of two cellular components for ease of use: the Lok-CEL™, which mechanically retains the liner while the pump is in operation, and the Hydra-CEL™, the removable hydraulic assist that places the Lok-CEL in tension while simultaneously placing the liner in compression. Our designs improve fluid end maintenance procedures, reduce risk exposure, and speed up liner change-out times.

The Lok-CEL body and locking ring are manufactured from high-yield alloy steel. The sturdy design provides the ruggedness and durability required for today's high stress drilling environments. The Hydra-CEL structural body is manufactured from an aerospace aluminum alloy for reduced weight and is anodized for corrosion resistance. It also comes equipped with a pressure relief valve that prevents over-pressurization and a large hydraulic ram for positive, metal-to-metal liner contact. There is only one Hydra-CEL to maintain rather than individual hydraulic assemblies, which are found on some competing assemblies.

The Blak-JAK liner retention system reduces hydraulic loading on the liner face, improves safety by eliminating heavy hammers, provides uniform liner clamping around the liner circumference, and reduces liner change-out times by as much as 75% as compared to OEM-style configurations.

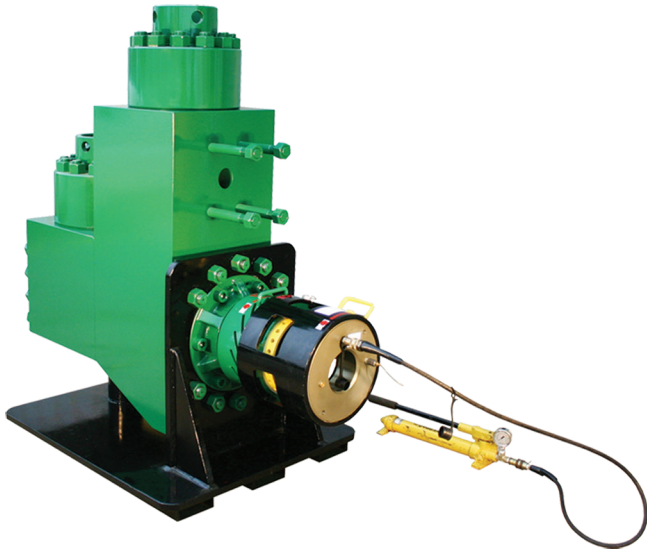
The Blak-JAK is available for specific National™, Oilwell™, and Continental Emsco™, and Gardner-Denver™ pumps.

Features and Benefits

- Reduces hydraulic loading by as much as 65% over competing designs
- Simple, compact design enables easy installation
- Premium alloy material and positive, metal-to-metal liner clamping
- Improved safety during liner change-out
- Uniform liner clamping around full circumference
- Eliminates liner washout due to loose liner seal



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Blak-JAK liner retention system quick-reference matrix

Model	Pump model	Module type	Hydra-CEL assembly	Lok-CEL top level assembly*	Lok-CEL (short assembly)
Top Level Assembly*	FC-2200	OEM	80-502-100	80-501-108	80-501-108S
(Short Assembly)	FB-1600	OEM	80-502-100	80-501-105	80-501-105S
Emsco	FB-1600	Mission L	80-502-103	80-501-106	80-501-106S
Emsco	FC-1600	OEM	80-502-103	80-501-110	80-501-110S
Gardner-Denver	PZ-K(10) (Model A)	Mission L/OEM	80-502-104	80-501-111	80-501-111S
Gardner-Denver	PZ-L(11) (Model A)	Mission L/OEM	80-502-104	80-501-111	80-501-111S
National	12-P-160	Mission L/OEM	80-502-100	80-501-100	80-501-100S
National	14-P-220	Mission L/OEM	80-502-100	80-501-109	80-501-109S
Oilwell	A-1700-PT	OEM	80-502-102	80-501-102	80-501-102S
Oilwell	A-1700-PT	Mission L	80-502-102	80-501-101	80-501-101S
SWOP FE 7500	HHF-1600	Mission L	80-502-100	80-501-114	80-501-114S

* This number is needed for first time installation only