Internal Pressure-Operated (IPO) Circulating Valve

The **Internal Pressure-Operated (IPO) Circulating Valve** is a single-shot circulating valve which allows circulation through the workstring before trip-out and serves as a drain valve during trip-out. It can be run in cased holes or openholes and maintains a full bore through the tool.
The IPO Circulating Valve is used in the following situations:

- When a full-opening string is needed
- When redundant backup to annulus pressure-operated circulating valves is needed
- When a limited amount of annulus pump pressure is available to operate annulus pressure tools

Features

1) Requires no string manipulation to operate tool
2) Permits passage of wireline tools through full-opening bore

Operation

The IPO circulating valve is operated by internal pressure (500 to 10,000 psi above hydrostatic). Pressure required to operate the tool is determined by shear pins, which hold the sliding valve in the closed position. To open the valve, tubing pressure is increased to a pressure above annulus hydrostatic equal to the shear value of the shear pins. Once operated, the IPO Circulating Valve is locked open.

IPO Circulating Valve									
Tool Size	**O.D.**	**I.D.**	**Length**	**End Connection**	**Service Temp.**	**Tensile Rating**	**W.P.**	**Flow Area**	**Number of Ports**
In.	In.	In.	In.	/	°F	lb	Psi.	In.²	/
3-7/8"	3.90	1.77	23.52	2-7/8" CAS	400	230046	15000	1.23	4
			26.85	2-7/8" EUE					
5"	5.02	2.24	26.77	3-7/8" CAS	400	462746	15000	1.49	4
			26.28	3-1/2" IF					

1) *Other sizes available on request.*
2) *Meets requirements of NACE-0175 (>175°F)*
3) *The values of tensile, burst, and collapse strength are calculated with new tool conditions.*
4) *Pressure rating is the differential pressure at the tool. (Differential pressure is the difference in pressure between the casing annulus and the tool ID.)*

Subject to change without notice