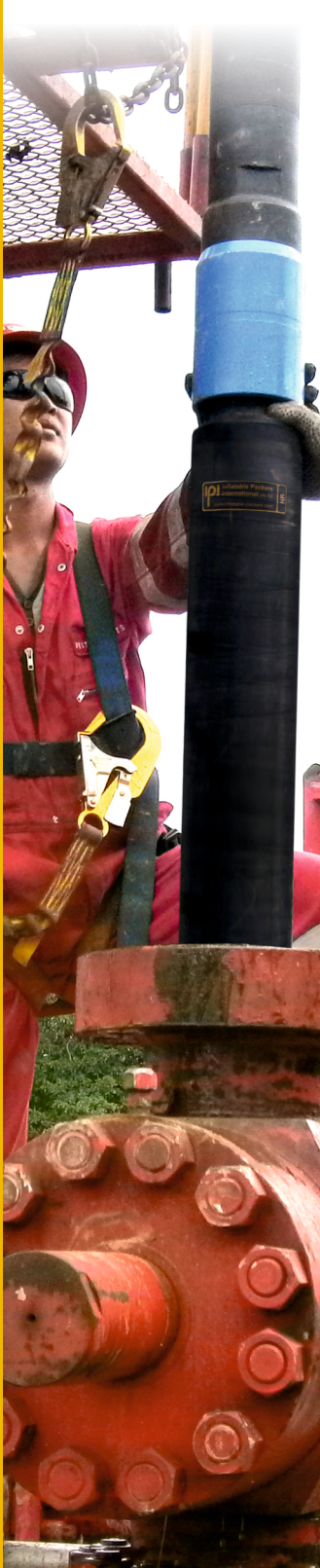


ST Tool



Inflatable Technology:

An inflatable element is a hydro-mechanical sealing device to be conveyed into a wellbore on a wide range of tool chassis. IPI's unique design of composite element allows the versatility to set in an ID significantly larger (+/- 300%) than its run in OD and where applicable be released and retrieved. The IPI design offers a true wellbore seal in both directions and has proven itself in over 13,000 applications to be the most robust inflatable element while offering the industry's best in class recoverability. Open hole, through tubing, cased hole, oval pipe, scale, perforated, nonstandard etc. conditions make IPI inflatable elements your path to success.

ST Tool:

The ST tool is a versatile and efficient solution for well-testing and stimulation in both open-hole and cased-hole applications. ST tool's range of multi-cycle inflatable packer systems features a four-stage operating mechanism that enables packer inflation, annular circulation, interval testing, and shut-in isolation. The ST range can be configured as a single-packer or a dual-packer straddle assembly. This innovation makes the ST range the optimal inflatable packer solution for formation evaluation and well-stimulation in open-hole or cased-hole applications.

Applications:

- ◆ Well stimulation and treatment
- ◆ Formation and reservoir evaluation (Mini Frac, DFIT, DST)
- ◆ Well integrity testing and leak-off testing
- ◆ Injection testing

Benefits:

- ◆ Multi-cycle functionality and four-stage operating mechanism allows **multiple tool sets and cycles within a single trip**
- ◆ All operating stages of the tool are accomplished by axial movement of running pipe, this simply combined with hydraulic pressure as the only operational requirements **eliminates the need for control lines, rotation, downhole pumps**, or ancillary means like drop balls
- ◆ The zero-displacement valve design ensures precise shut-in pressure recording and **prevents unintentional formation fractures during shut-in**
- ◆ Volume compensated balanced piston reduces inner-component movement preventing pressure fluctuations within isolated test zones to provide an **accurate initial shut-in pressure reading**
- ◆ The ST tool can be configured with a backup pull-release system for **emergency deflation**



ST Tool

ST114

Straddle
Packer
System

Single
Packer
System



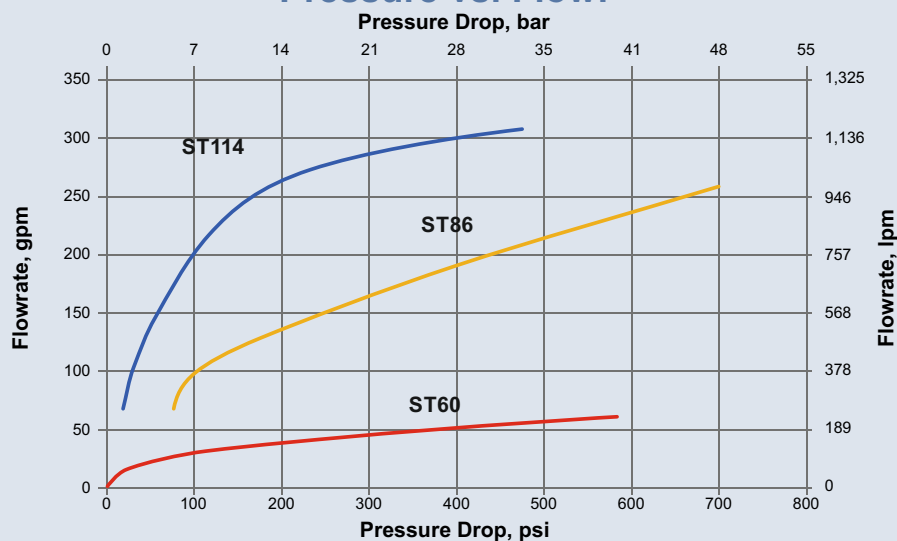
Compatible Packer Systems:

Packer Size		Compatible ST Tool	Hole Size		Max. Pressure
mm	in		mm	in	psi
57	2 ¼	ST60	76	3.0	5000
67	2 ⅝		96	3.8	2500
			96	3.8	5000
86	3 ⅜	ST86	140	5.5	1700
			115	4.5	5000
114	4 ½	ST86 & ST114	152	6	2000
127	5		140	5.5	5000
140	5 ½		200	7.9	2000
			170	6.7	5000
			250	9.8	1600
178	7	ST114	180	7	5000
190	7 ½		260	10.2	2800
			210	8.3	5000
280	11		300	11.8	2150
			228	9	5000
			310	12.2	2100
			310	12.2	5000
			394	15.5	2000

Specifications*:

Tool Type	ST60	ST86	ST114
Minimum Tool Diameter	60 mm	86 mm	114 mm
Run on API Drill Pipe/Tubing	2 ⅜ in	2 ⅞ in	4 ½ in
Max. Pressure Rating	5000 psi (34.5 Mpa)		
Max. Temperature Rating	80°C (176°F)		
Max. Pull (Emergency deflate)	44 T (9,700 lbs)	13.2 T (29,100 lbs)	26.4 T (58,202 lbs)
Max. Axial Load (1.6 safety factor)	13.5 T (29,762 lbs)	48 T (105,821 lbs)	87 T (191,802 lbs)

Pressure vs. Flow:



* Maximum temperature rating on a standard tool
ST65 (HP) and ST114 (HP) 10,000 psi versions are also available
Tools requiring higher temperatures can be supplied, as well as change over kits to existing tools to a maximum temperature of 150°C / 302°F.

