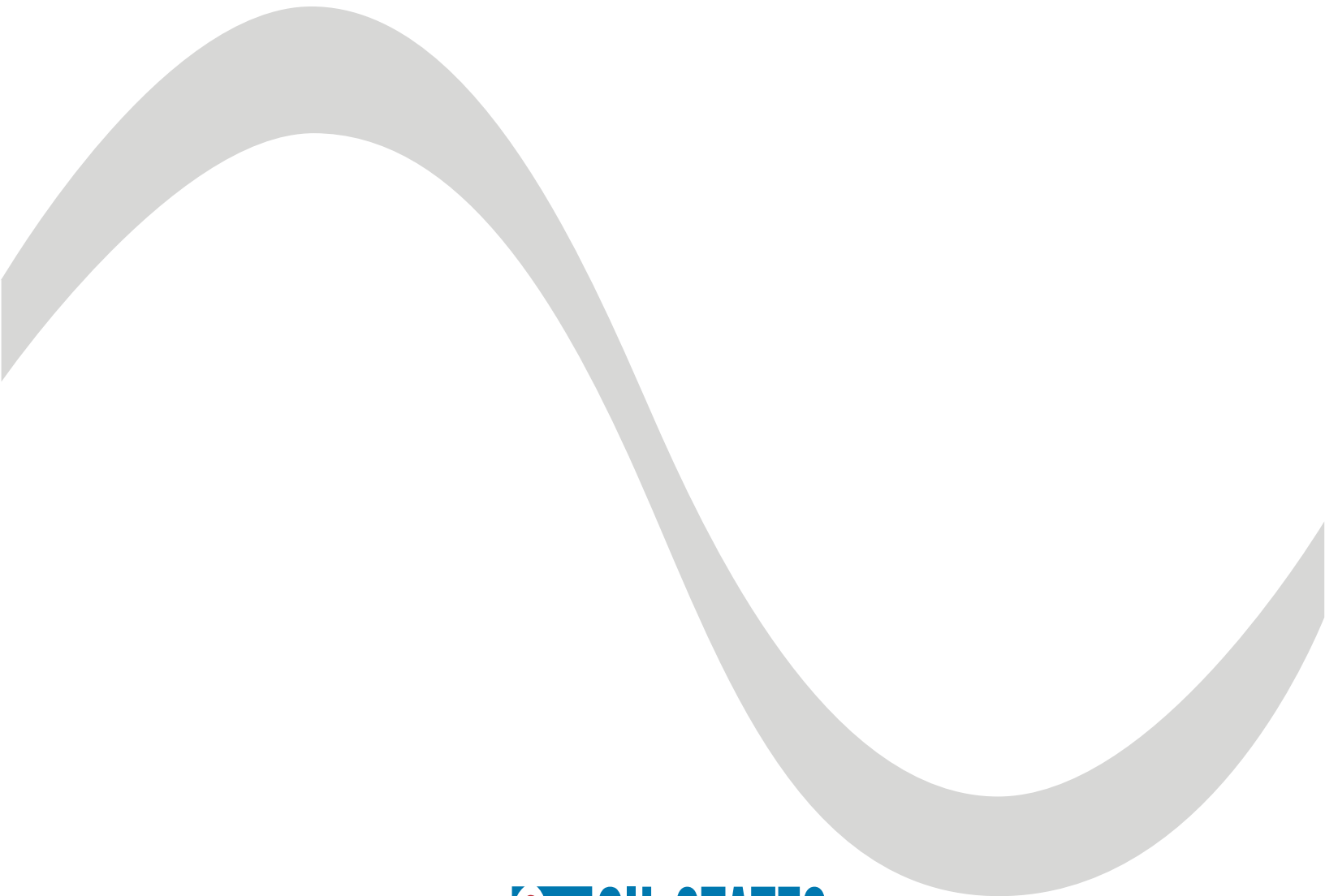




STINGER

WELLHEAD PROTECTION, INC.



When Experience Counts!

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Stinger USA Locations

Headquarters	(405) 702-6500
Oklahoma City, OK	(405) 686-1001
Elk City, OK	(580) 225-7011
Poteau, OK	(918) 654-3037
Conway, AR	(501) 327-2411
Kilgore, TX *	(903) 986-3791
Fairfield, TX	(903) 389-2448
Orange Grove, TX *	(361) 384-0041
Perryton, TX	(806) 434-0458
Midland, TX	(432) 563-1304
Bridgeport, TX	(940) 683-8135
Minden, LA	(318) 371-1861
Artesia, NM	(575) 748-9079
Bakersfield, CA	(661) 391-8057
Rock Springs, WY	(307) 382-7001
Vernal, UT	(435) 789-8115
Williston, ND	(701) 572-3427
Brighton, CO	(720) 685-8696
Hodgesville, WV	(304) 472-8888
Laurel, MS	(601) 444-9701
Williamsport, PA	

* Districts providing offshore services

USA Corporate Sales Offices

Oklahoma City, OK	(405) 606-9270
Denver, CO	(720) 480-9340
Houston, TX	(281) 433-9851

Stinger Canada Locations

Calgary Sales	(403) 296-6400
Red Deer, AB	(403) 340-0716
Grand Prairie, AB	(780) 513-3696
Medicine Hat, AB	(403) 529-5921

Stinger Mexicana

Reynosa	+52 1 899 929-7884
Pozarica	

Stinger Argentina

Cutrol Co	+54-299-4961594
Neuquen	+54-299-4436461

Quality Oilfield Services

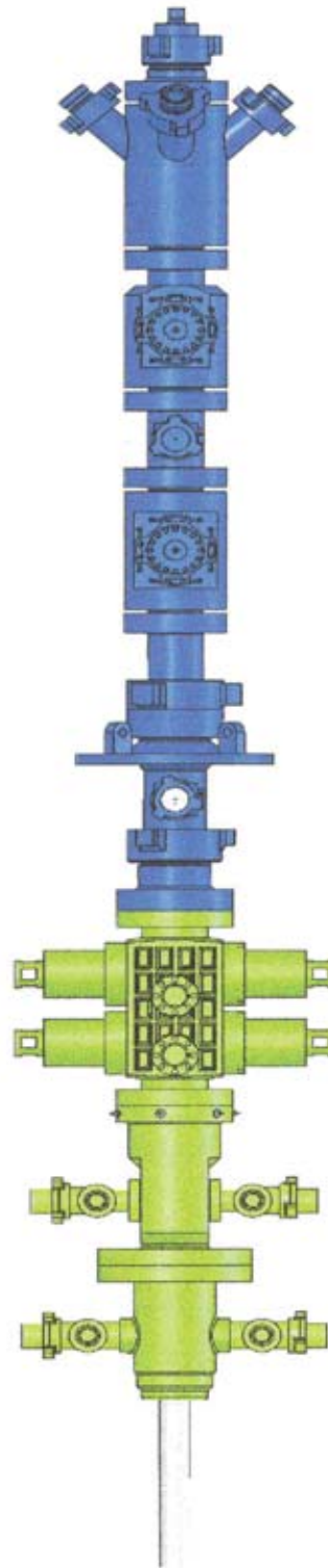
(International)	
Red Deer, AB	(403) 340-0716



Stinger Wellhead Protection is the World's largest provider of Wellhead Isolation Equipment and Services. The company was founded in 1988 by Murray Dallas to provide independent wellhead isolation services to the Oil and Gas industry. The company became a part of Oil States International in 2005. Today, services are provided from 21 locations in the United States, 3 in Canada, 2 in Mexico and 2 in Argentina. International Services, provided from Red Deer AB, are currently being performed in many countries around the globe.

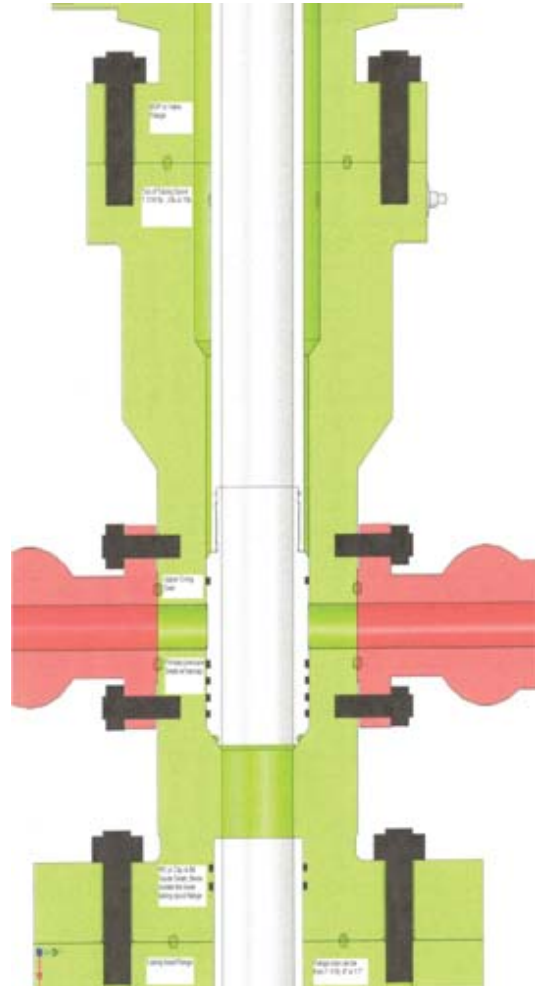
The Stage Frac Tool provides isolation of the wellhead, while eliminating the need to rig down frac lines and the tool between stages. The large through bore diameter allows for running wireline plugs and perforating guns through the tool, providing substantial time savings between stages.

The large ID of the Stage Frac Tool also provides the ability to pump at much higher rates than possible with conventional tools, allowing greater flexibility in job design.



STAGE FRAC TOOL FEATURES

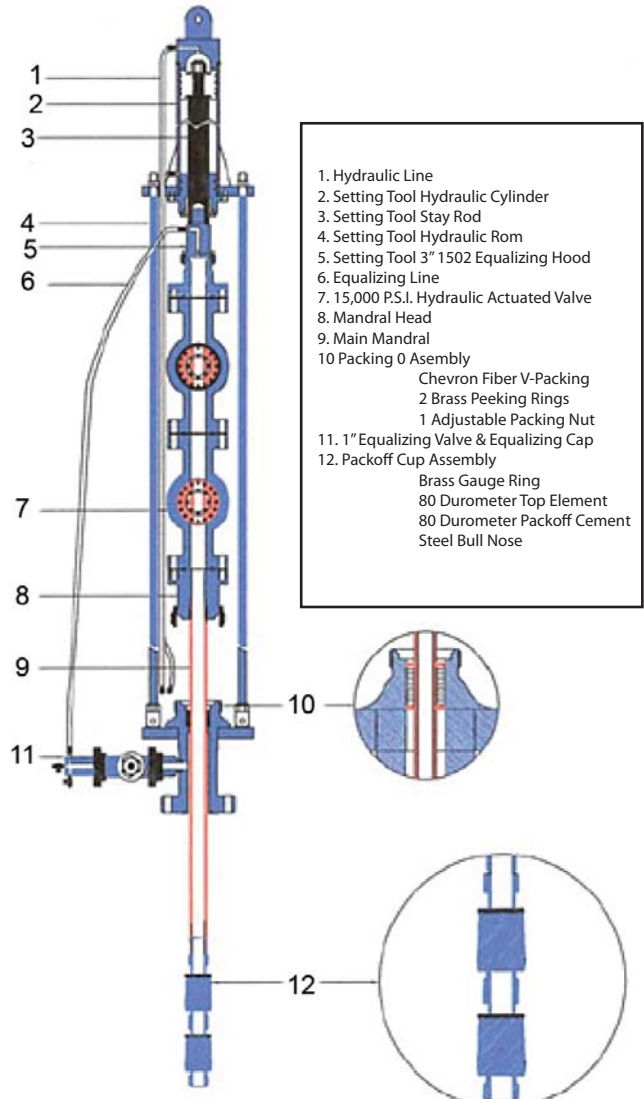
- 15,000 PSI Working Pressure
- 5 1/8" 15,000 PSI Valves
- 5 1/16" I.D. Through Bore to provide Wireline access without frac line and tool rig out between stages
- For casing sizes up to 5 1/2", Seals in profile of tubing head to provide full isolation of Wellhead.
- For casing sizes 7" and greater with 4 1/2" or 5 1/2" Liner, seals in casing.
- Can be used as conventional tool in larger casing sizes.
- Installed and removed under pressure.
- Sealing element selection/design according to existing tubing spool design/dimensions (Photo at right is one example of the Stage Frac Tool sealing element)



The Casing Isolation Tool extends through the Tree or BOP and seals inside the casing below.

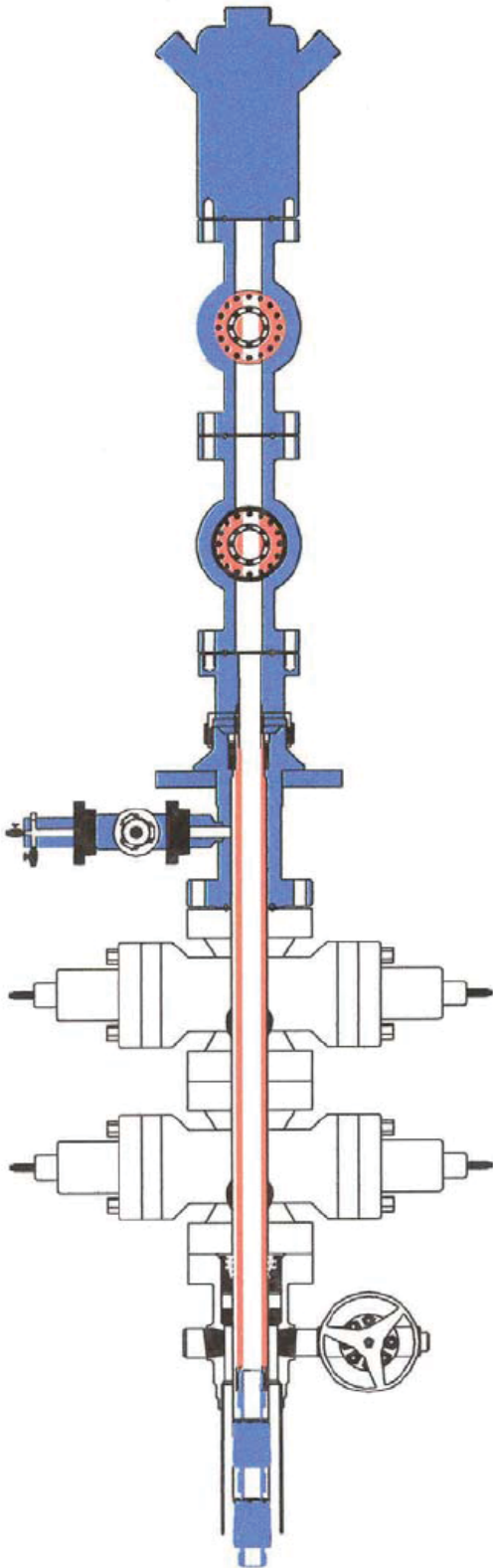
Casing Tool Features:

- 15,000 PSI Working Pressure
- 20,000 PSI tools available
- Casing Sizes 4 1/2"- 9 5/8"
- Installed and removed under pressure
- Mandrel sizes determined by casing size and estimated pumping rates

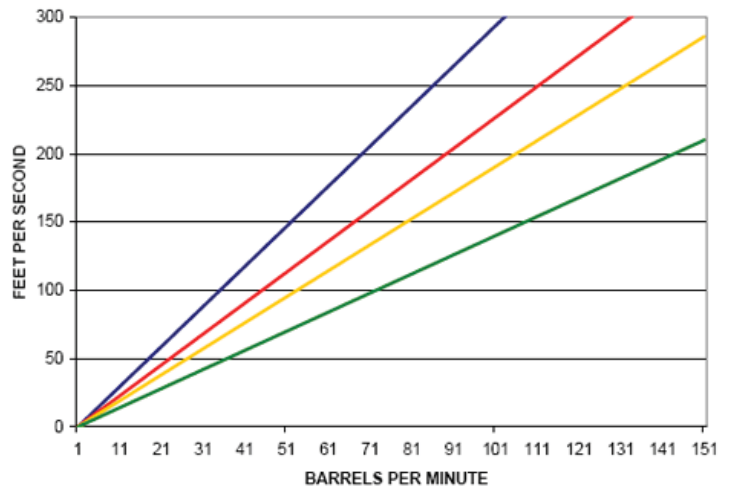


Example of sealing element for Casing Isolation Tool

Wellhead Isolation Tool for Casing Installed with Frac Head



MAXIMUM RECOMMENDED RATE 200' PER SECOND



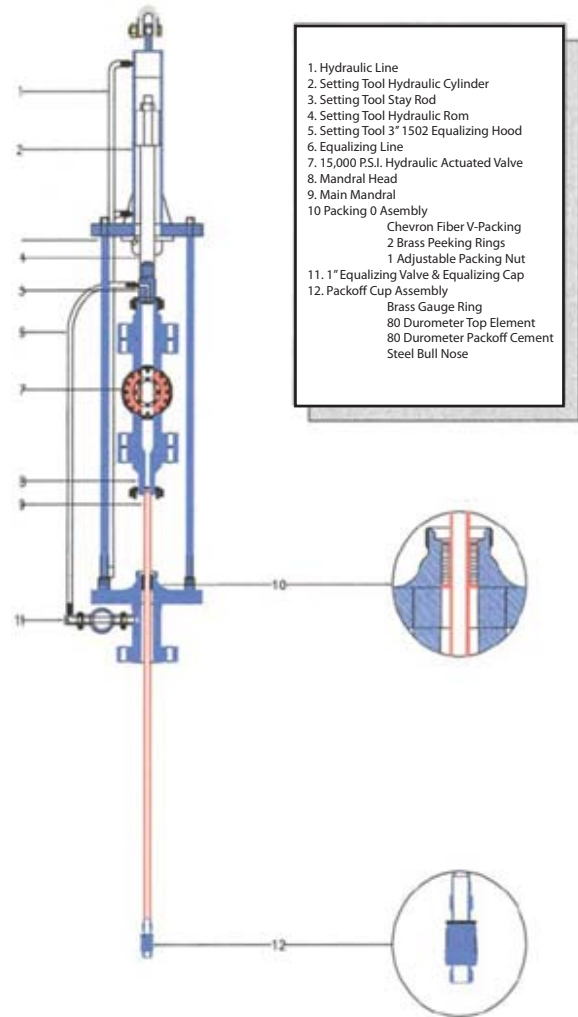
- 2.416" Mandrell 4 1/2 9.5-15lb Csg
- 2.75" Mandrell 4 1/2 9.5-13.5 lb Csg, All 5 1/2 and 7" Csg
- 3" Mandrell 5 1/2 - 9 5/8 Csg
- 3.5" Mandrell 7" - 9 5/8" Csg

The Casing Isolation Tool extends through the Tree or BOP and seals inside the casing below.

Casing Tool Features

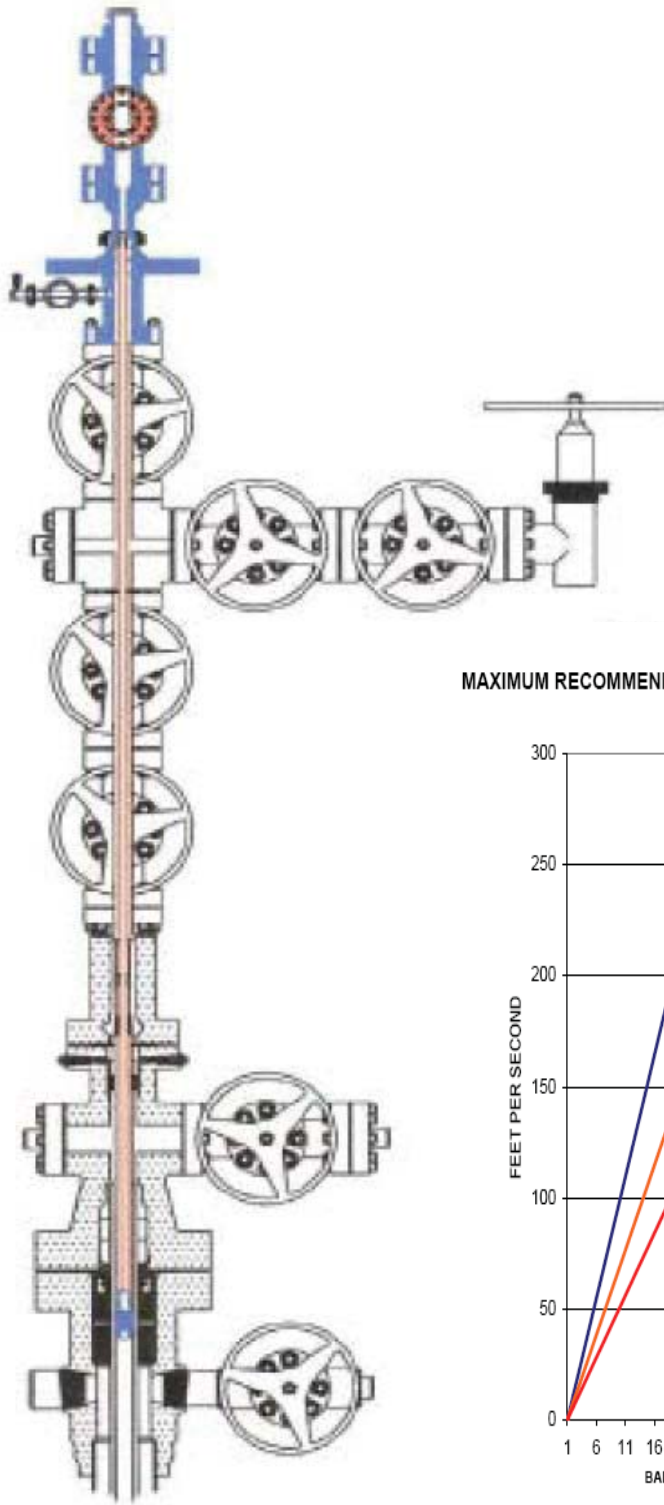
- 15,000 PSI Working Pressure
- 20,000 PSI tools available
- Casing Sizes 4 1/2" - 9 5/8"
- Installed and removed under pressure
- Mandrel sized determined by casing size and estimated pumping rates

Wellhead Isolation Tool for Tubing

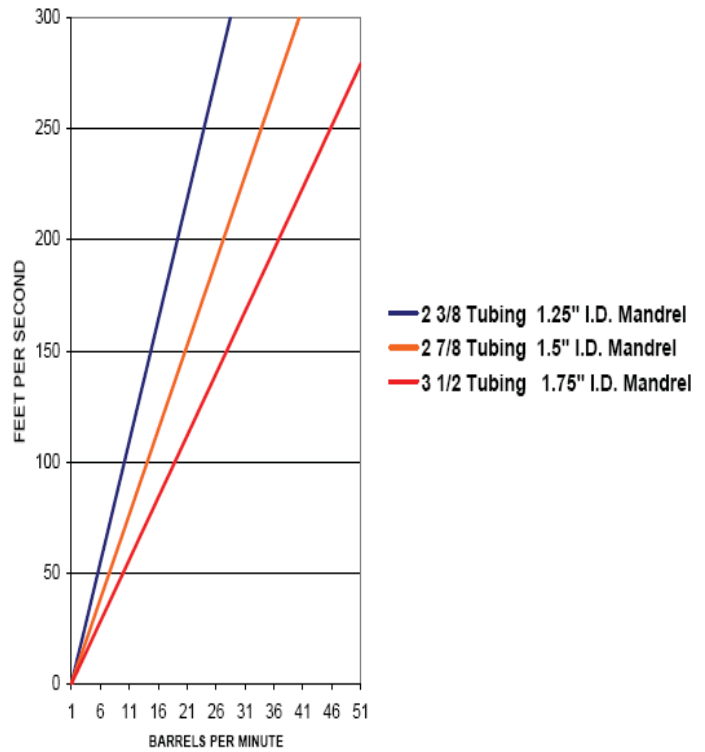


Example of sealing element for Tubing Isolation Tool

WELLHEAD ISOLATION TOOL FOR TUBING

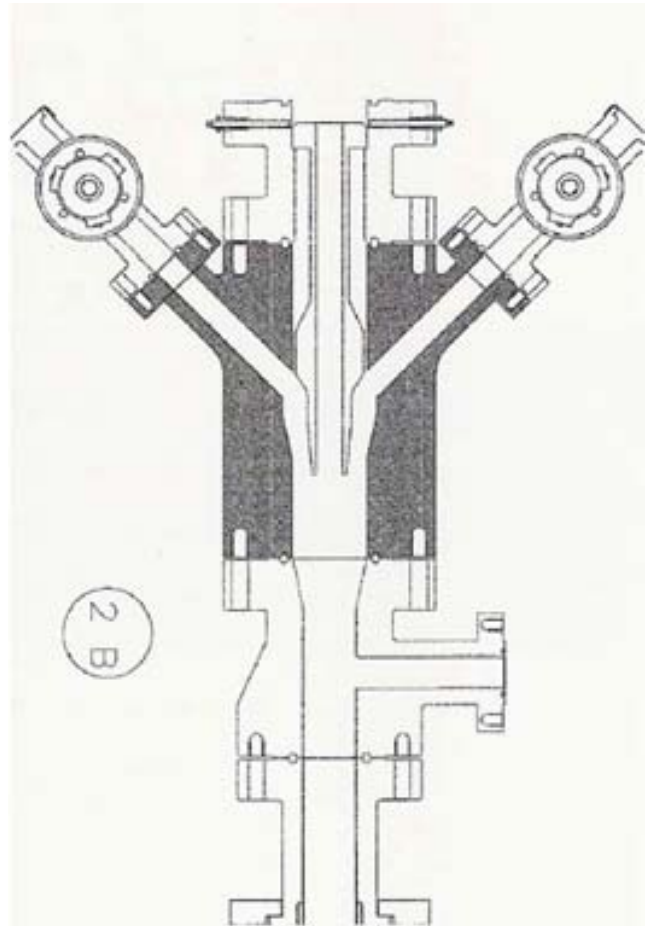


MAXIMUM RECOMMENDED RATE 200' PER SECOND



The Blast Joint Frac Head is designed to protect Coiled Tubing or Wireline from the effects of abrasion during fracturing treatments where they must remain in place in the well.

It may also be used in conjunction with the Stage Frac Tool in cases where complete wellhead isolation is needed.



Blast Joint Frac Head Features:

- Sizes from 4 1/16" to 7 1/16"
- 10,000 and 15,000 PSI
- Both fixed and lock down blast joint configurations allow flexibility of downhole tool design
- Easily adapted to any size wellhead or Coiled Tubing/Wireline connection and estimated pumping rates

FRAC HEADS, FRAC STACKS, AND FRAC VALVES

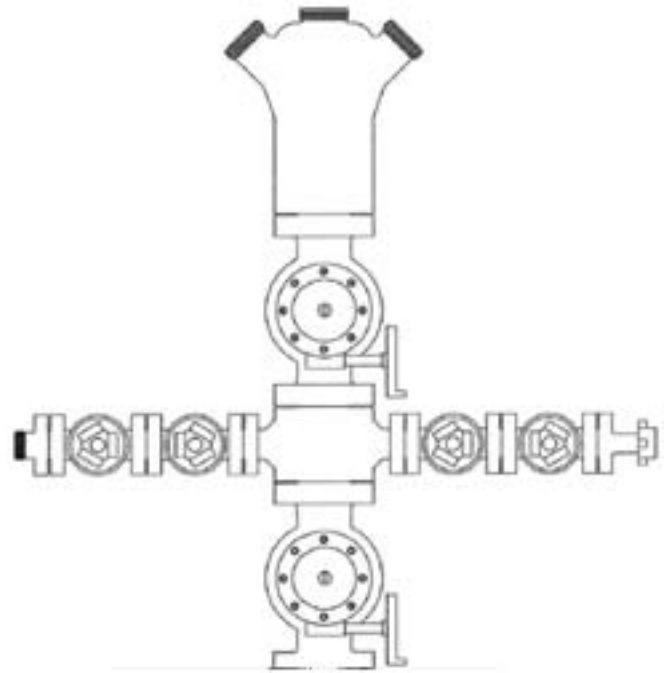
Stinger offers a wide variety of frac head configurations designed to fit any need.

Sizes range from 3 1/16" 3 way, to 7 1/16" 5 way. 15,000 Psi working pressure. Heads can also be stacked to allow for more frac lines on high rate jobs. Adaptors are available for a wide variety of frac line sizes and connections.



Frac Stacks and Frac Valves are available in a variety of sizes and configurations.

Whether your need is a single valve, or a complex high pressure frac tree with a frac head, Stinger is able to meet your needs.



Crane Truck Fleet

Stinger operates a fleet of crane trucks that is maintained to exceed Federal standards. Having well maintained trucks with the largest cranes in the industry allows us to deliver our equipment and personnel to the wellsite on time, and safely handle the equipment during rig in and rig out. The crane trucks are equipped with self contained hydraulics used to operate the tools.



Personnel

Stinger Personnel are among the most highly trained in the industry. All tool operators are trained in industry standard and Stinger specific courses.

We are driven by our Customers' needs and by a desire to provide a quality service in a safe and professional manner.



Manufacturing

Stinger operates a modern, well equipped machine shop, staffed by highly experienced employees; along with in house design staff, allows for quick response to changing customer needs. Specialized equipment can be built to fit any need.

We maintain the following:

- ISO 9001:2008
- ISO/TS 29001
- API Specification Q1"
- API 5CT
- API 6A



USEFUL INFORMATION

Maximum Rates by mandrel size

5.125"	Stage Frac Tool, 4 1/2" and 5 1/2" casing	220 BPM
3.5"	7" - 9 5/8" casing	140 BPM
3.0"	5 1/2" - 9 5/8" casing	105 BPM
2.75"	4 1/2" 9.5-13.5#, all 5 1/2 and 7" casing	90 BPM
2.416"	4 1/2" 9.5 - 15# casing	68 BPM
1.75"	3 1/2" Tubing	36 BPM
1.5"	2 7/8" Tubing	26 BPM
1.25"	2 3/8" Tubing	18 BPM

Velocity

$$\text{Feet/second} = \frac{\text{gal/min} \times 0.4085}{(\text{ID in Inches})^2}$$

API Bolt Pull Data

API Specification 6A

From Table D-1 Recommended Torques in Ft/lbf for Flange Bolting

Flange Size	Flange Pressure Rating	Bolt Size	Number of Bolts	Tension F (LBF)		Tension F (LBF)		Allowable Stress on Bolts
				Studs with Sy = 80ksi Bolt Stress = 40ksi (single stud)	Studs with Sy = 80ksi Bolt Stress = 40ksi (x # of flange bolts)	Studs with Sy = 105ksi Bolt Stress = 52.5ksi (single stud)	Studs with Sy = 105ksi Bolt Stress = 52.5ksi (x# of flange bolts)	
2 1/16	2K	0.625	8	9040	72320	11865	94920	
	3K	0.875	8	18469	147752	24241	193928	
	5K	0.875	8	18469	147752	24241	193928	
	10K	0.75	8	13378	107024	17559	140472	
	15K	0.875	8	18469	147752	24241	193928	
2 9/16	2K	0.75	8	13378	107024	17559	140472	
	3K	1	8	24230	193840	31802	254416	
	5K	1	8	24230	193840	31802	254416	
	10K	0.875	8	18469	147752	24241	193928	
	15K	1	8	24230	193840	31802	254416	
3 1/8	2K	0.75	8	13378	107024	17559	140472	
	3K	0.875	8	18469	147752	24241	193928	
	5K	1.125	8	31618	252944	41499	331992	
3 1/16	10K	1	8	24230	193840	31802	254416	
	15K	1.125	8	31618	252944	41499	331992	
	4 1/16	2K	0.875	8	18469	147752	24241	193928
3K		1.125	8	31618	252944	41499	331992	
5K		1.25	8	39988	319904	52484	419872	
10K		1.125	8	31618	252944	41499	331992	
15K		1.375	8	49340	394720	64759	518072	
5 1/8	2K	1	8	24230	193840	31802	254416	
	3K	1.25	8	39988	319904	52484	419872	
	5K	1.5	8	59674	477392	78332	626656	
	10K	1.125	12	31618	379416	41499	497988	
	15K	1.5	12	59674	716088	78332	939984	
7 1/16	2K	1	12	24230	290760	31802	381624	
	3K	1.125	12	39988	479856	52484	629808	
	5K	1.375	12	49340	592080	64759	777108	
	10K	1.5	12	59674	716088	78332	939984	
	15K	1.5	16	59674	954784	78332	1253312	
9	2K	1.125	12	39988	479856	52484	629808	
	3K	1.375	12	49340	592080	64759	777108	
	5K	1.625	12	70989	851868	93173	1118076	
	10K	1.5	16	59674	954784	78332	1253312	
	15K	1.875	16	96565	1545040	126741	2027856	
11	2K	1.25	16	39988	639808	52484	839744	
	3K	1.375	16	49340	789440	64759	1036144	
	5K	1.875	12	96565	1158780	126741	1520892	
	10K	1.75	16	83286	1332576	109313	1749008	
	15K	2	20	110825	2216500	145458	2909160	
13 5/8	2K	1.25	20	39988	799760	52484	1049680	
	3K	1.375	20	49340	986800	64759	1295180	
	5K	1.625	16	70989	1135024	93173	1490768	
	10K	1.875	20	96565	1931300	126741	2534820	
	15K	2.25	20	142292	2845840	186758	3735160	

Allowable Bolt Full Compared to Up force Applied during Treatment