

Wellhead Systems Inc.  
Pumping and Polished Rod Accessories



## WSI Difference

Wellhead Systems Incorporated (WSI) products have been recognized over decades, for unmatched quality, design and superior customer support and service throughout the globe. WSI was the first in the industry to come out with a complete 3000 PSI artificial lift hookup for the oil and gas industry and continued meeting customer demands by offering enhancements and add-ons to existing products in an effort to help customers increase productivity and decrease overall operating costs. Today, WSI conducts business throughout North America and many international markets spanning the world. While WSI has experienced a significant growth trend, our commitment to the customer's success through our products drives everything that we do. Thank you to our customers!



## WSI Quality Features

- Largest Product Line in Industry
- Patented Designs
- Special "One-Off" Designs
- Superior Field Service and Training
- Years of Proven Experience
- NACE Options
- Largest Selection of Accessories
- Corrosion Resistant Materials & Coatings
- Environmental Systems
- Parts Interchangeability between models



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**Models - BSSP, BSTB™, BSDP**



**Model BSSP Stuffing Box (BSSP)**

- Easy to adjust threaded cap – NO BOLTS (great in steam & high salt water cut areas)
- Low profile design, ideal for short stroke pumping units
- Reduces costly packing maintenance time
- Even adjustment of packing every time!
- Convenient protection of packing when stacking out rods



**Model BSTB™ Stuffing Box (BSTB™)**

- Easy to adjust threaded cap – NO BOLTS (great in steam & high salt water cut areas)
- Eliminates one connection
- Low profile design, ideal for short stroke pumping units
- Standard brass inverter ring reduces polished rod scarring
- Even adjustment of packing every time!

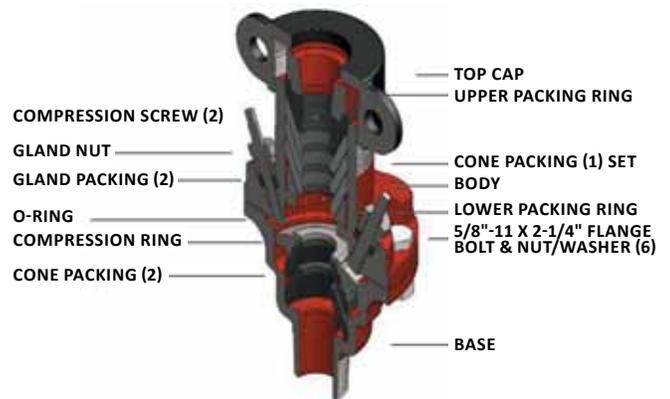


**Model BSDP Stuffing Box (BSDP)**

- Easy to adjust threaded cap – NO BOLTS (great in steam & high salt water cut areas)
- Oil Field Grade rugged box, built for performance under tough conditions
- Lower profile compared to “Classic” model double packed stuffing box
- Primary packing can be changed under pressure by engaging compression bolts
- Two ¼” NPT ports (180° apart) for grease zerk & pressure gauge

SPECIFICATIONS	BSSP	BSTB™	BSDP
<b>Working Pressure</b>	1500 PSI	1500 PSI	1500 PSI
<b>BTM Thread (API tubing or LP)</b>	2", 2-1/2", 3"	2-3/8" & 2-7/8"	2", 2-1/2", 3"
<b>Bottom Connection</b>	Male	Female	Male
<b>Weight</b>			
• 2"	20 lbs.	24 lbs.	45 lbs.
• 2-1/2"	21 lbs.	25 lbs.	45 lbs.
• 3"	21 lbs.	26 lbs.	46 lbs.
<b>Height</b>	9-3/4"	11"	15"
<b>Material</b>	Ductile Iron*		
<b>Split cone packing rod sizes</b>	1", 1-1/8", 1-1/4", 1-5/16", 1-3/8", 1-1/2", 1-3/4"		
<b>Pieces Required:</b>			
• Top Cones	3	3	5
• Bottom Cones	1	1	1

\*Corrosion-resistant coatings available, contact customer service.



**DOUBLE PACKED STUFFING BOX "BS" BODY ASSEMBLY**



**Models - HP (5K), PCDP, BSDP(3K)**



**High Pressure Stuffing Box (HP)  
5000 PSI WP**

- 100% pressure tested from factory
- 5K dual packed self-contained, low profile durable unit
- 5K stuffing box available with option flapper valve assembly
- Suitable for H2S environments – all materials conform to NACE-MR-01-75 (good to -50°F)
- “V” Style primary packing
- Upper packing can be replaced under pressure



**Model Pollution Control Double Packed Stuffing Box (PCDP) 1500 PSI WP**

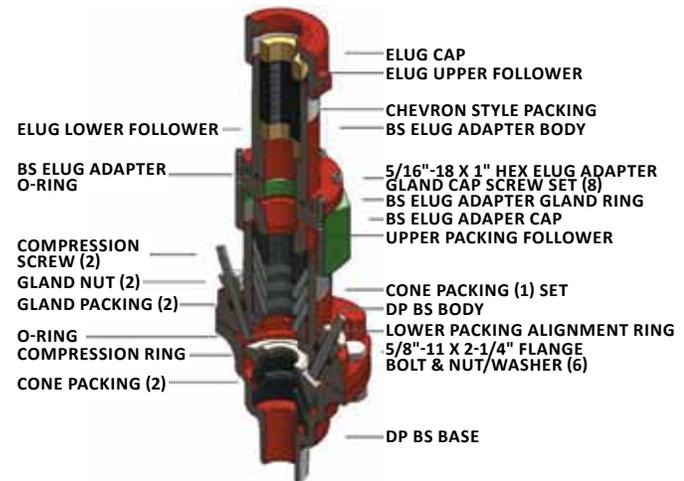
- If polished rod breaks, flapper closes automatically
- Two independently adjustable packing chambers
- Pollution Control Adapter acceptable to -50°F
- Meets NACE MR-01-75
- Base has ½" NPT test port
- Packing can be changed under pressure



**Model BSDP Stuffing Box (BSDP)  
3000 PSI WP**

- 100% pressure tested from factory
- Meets NACE MR-01-75
- High pressure service
- Easy to adjust threaded cap – NO BOLTS
- Oil Field Grade rugged box, built for performance under tough conditions
- Primary packing can be changed under pressure by engaging compression bolts
- Two ¼" NPT ports (180° apart) for grease zerk & pressure gauge

SPECIFICATIONS	HP	PCDP	BSDP
<b>Working Pressure</b>	<b>5000</b> PSI	1500 PSI	<b>3000</b> PSI
<b>BTM Thread (API tubing or LP)</b>	2-3/8", 2-7/8", 3-1/2"	2-3/8", 2-7/8", 3-1/2" or 3"	2-3/8", 2-7/8", 3-1/2" or 3"
<b>Bottom Connection</b>	Male	Male	Male
<b>Height</b>	10-1/2"	24-1/2"	15"
<b>Split cone packing rod sizes</b>	1-1/4" & 1-1/2"	1" to 1-3/4"	1" to 1-3/4"
<b>Pieces Required:</b>			
• Top Cones	8 (V Style)	5	5
• Bottom Cones	1 (5K Spec)	1	1
<b>V Style Packing</b>			
• Packing O.D.	2-1/4"	2-1/2"	N/A
• Stack Height	3"	3"	N/A



**DOUBLE PACKED STUFFING BOX “BS” ASSEMBLY WITH ELUG**

\*Corrosion-resistant coatings available, contact customer service.

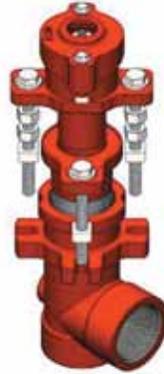


**Models - SPSB, TBSB & DPSB**



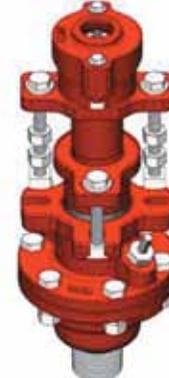
**Model Single Packed Stuffing Box (SPSB)**

- Standard design
- Proven dependable performance
- Grease zerk
- Optional Oil Reservoir Gland (ORG) or Environmental Lube Upper Gland (ELUG™)
- Distinctive misaligning feature reducing need for exact pumping unit alignment



**Model Tee Base Stuffing Box (TBSB)**

- Combines stuffing box and pumping tee w/ 1" bleeder
- Eliminates one connection
- Side outlets:
  - 2" LP w/ 2" BTM connection
  - 3" LP w/ 2-1/2" or 3" BTM connection
- Grease zerk
- Optional Oil Reservoir Gland (ORG) or (ELUG™)

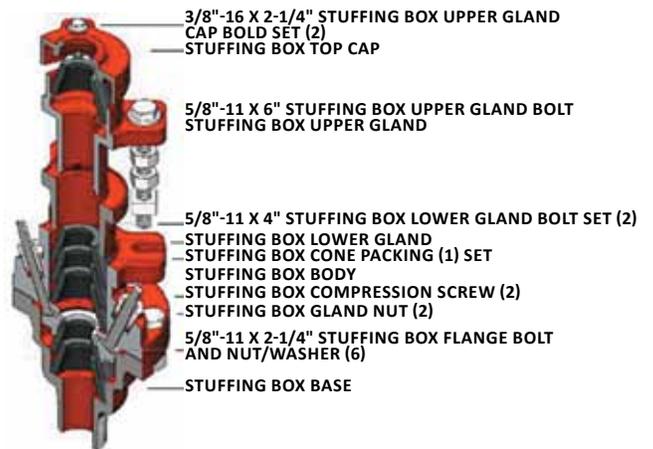


**Model Double Packed Stuffing Box (DPSB)**

- Most popular stuffing box in the industry
- Primary packing can be changed under pressure by engaging compression bolts
- Grease zerk
- Distinctive misaligning feature reducing need for exact pumping unit alignment
- Optional Oil Reservoir Gland (ORG) or Environmental Lube Upper Gland (ELUG™)
- Proven dependable performance

SPECIFICATIONS	SPSB	TBSB	DPSB
<b>Working Pressure</b>	1500 PSI	1500 PSI	1500 PSI
<b>BTM Thread (API tubing or LP)</b>	2", 2-1/2", 3"	2", 2-1/2", 3"	2", 2-1/2", 3", 4"
<b>Bottom Connection</b>	Male	Female	Male
<b>Weight</b>			
• 2"	24 lbs.	33 lbs.	50 lbs.
• 2-1/2"	25 lbs.	37 lbs.	51 lbs.
• 3"	26 lbs.	42 lbs.	52 lbs.
• 4"	N/A	N/A	56 lbs.
<b>Height</b>	13-1/2"	16"	17"
<b>Material</b>	Ductile Iron*		
<b>Split cone packing rod sizes</b>	1", 1-1/8", 1-1/4", 1-5/16", 1-3/8", 1-1/2", 1-3/4"		
<b>Pieces Required:</b>			
• Top Cones	4	4	6
• Bottom Cones	1	1	1

\*Corrosion-resistant coatings available, contact customer service.



**DOUBLE PACKED STUFFING BOX**



**Models - IVSB, IVTBSB & IVDPSB**



**Model Inverted Stuffing Box (IVSB)**

- Lowest profile design
- Ideal for smaller pumping units with minimum stroke length
- Inverted cone packing provides additional surface contact and wear characteristics



**Model Inverted Tee Base Stuffing Box (IVTBSB)**

- Combines IVSB and pumping tee with 1" bleeder
- Eliminates one connection
- Lower profile than Classic models
- Side outlets:
  - 2" LP w/ 2" BTM connection
  - 3" LP w/ 2-1/2" or 3" BTM connection

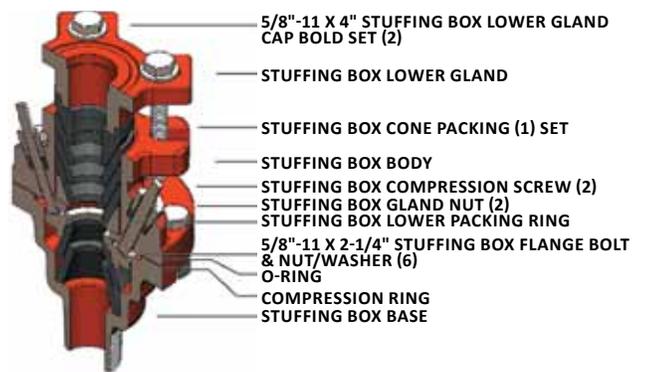


**Model Inverted Double Packed Stuffing Box (IVDPSB)**

- Ruggedly built for performance under tough oilfield conditions
- Primary packing can be changed under pressure by engaging compression bolts
- Lower profile than Classic model
- Proven dependable performance

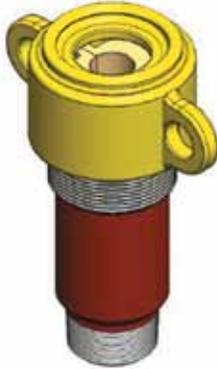
SPECIFICATIONS	IVSB	IVTBSB	IVDPSB
Working Pressure	1500 PSI	1500 PSI	1500 PSI
BTM Thread (API tubing or LP)	2", 2-1/2" 3"	2", 2-1/2", 3"	2", 2-1/2" 3", 4"
Bottom Connection	Male	Female	Male
Weight			
• 2"	19 lbs.	28 lbs.	45 lbs.
• 2-1/2"	20 lbs.	32 lbs.	46 lbs.
• 3"	21 lbs.	38 lbs.	47 lbs.
• 4"	24 lbs.	N/A	51 lbs.
Height	10"	12"	14"
Material	Ductile Iron*		
Split cone packing rod sizes	1", 1-1/8", 1-1/4" 1-5/16", 1-3/8", 1-1/2", 1-3/4"		
Pieces Required:			
• Top Cones	3	3	5
• Bottom Cones	1	1	1

\*Corrosion-resistant coatings available, contact customer service.



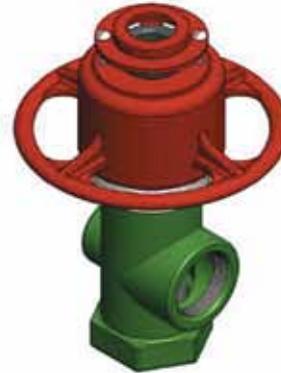
**INVERTED DOUBLE PACKED STUFFING BOX**

## Jack Stuffing Box & Wheel Stuffing Box



### Jack Stuffing Box (JSB)

- Economy stuffing box
- Easy to adjust threaded cap – NO BOLTS (great in high salt water cut areas)
- Low profile design, ideal for short stroke pumping units
- Reduces costly packing maintenance time
- Even adjustment of packing every time!

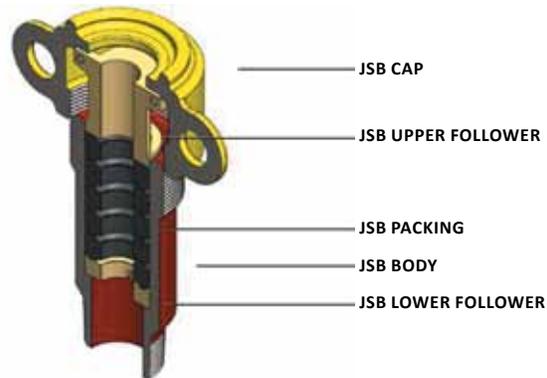


### Wheel Stuffing Box (WSB)

- Economy stuffing box
- Easy to adjust threaded cap – NO BOLTS (great in high salt water cut areas)
- Integral pumping tee
- Reduced connections
- Low profile design, ideal for short stroke pumping units
- Reduces costly packing maintenance time
- Even adjustment of packing every time!

SPECIFICATIONS	JSB	WSB
Working Pressure	2500 PSI	2500 PSI
BTM Thread (API tubing or LP)	2", 2-1/2", 3"	2-3/8" & 2-7/8"
Bottom Connection	Male	Female
Height	7-1/2"	9-1/2"
Material	Ductile Iron*	
Crown ring packing rod sizes	1" to 1-1/2"	
Crown rings required:	5	3

\*Corrosion-resistant coatings available, contact customer service.

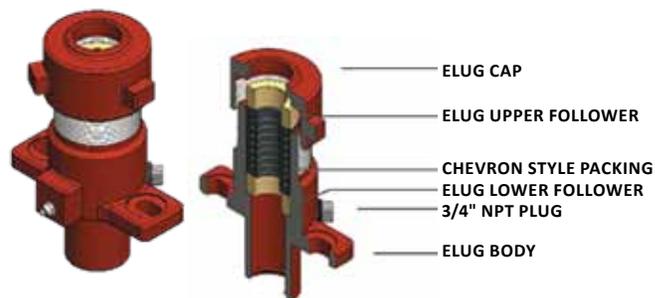




## Upper Glands

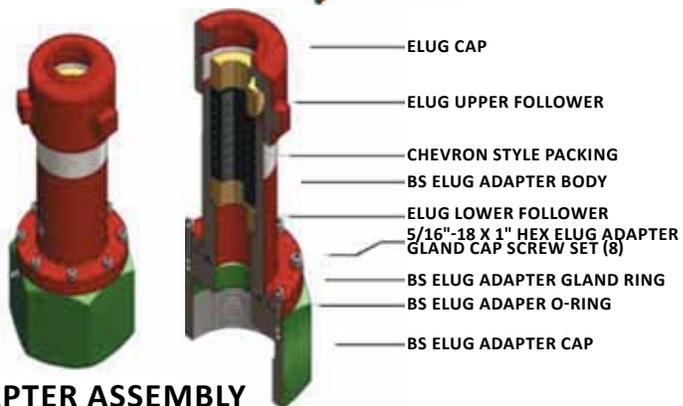
### Environmental Lube Upper Gland (ELUG™)

- Best design for leak detection glands
- Provides secondary seal for stuffing box
- Fits any "Classic" style stuffing box
- Uses V style packing
- Optional Environmental Control Shut-down Switch unit (ECSS™)
- Rod Sizes: 1" – 1-3/4"
- Body & cap: ductile iron
- Upper/lower packing rings: Bronze/split standard

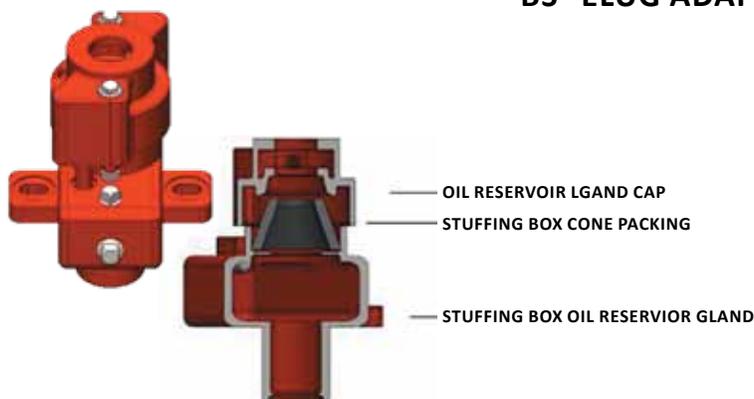


### BS Environmental Lube Upper Gland (BSE-LUG™)

- Same features as above, but designed for "Premier" style stuffing boxes
- Designed for "BS" stuffing boxes only
- Modified flange design connection, eliminates potential separation between ELUG and Stuffing box



### "BS" ELUG ADAPTER ASSEMBLY



### Standard Oil Reservoir Gland (S-ORG™)

- Option for wells that pump or flow off
- One quart reservoir capacity
- Utilizes Environmental Control Shut-down Switch unit (ECSS™)
- Top split cone wiper controls oil film on polished rod
- Rod sizes: 1" – 1-3/4"
- Material: ductile iron
- Fits any "Classic" style stuffing box

### Environmental Control Shut-down Switch (ECSS™)

- Meets NEC Class 1, Div. 1 requirements
- Standard and Explosion proof options
- Works with electric and gas power sources
- Corrosion resistant components
- Long travel float
- Both "Normally Open" and "Closed" contacts
- Utilized with S-ORG™, ELUG™, and BSE-LUG™





## Cone & “V” Style Packing

The stuffing box is perhaps the most important piece to your artificial lift surface hookup from the standpoint, it is your **SEAL**. The most important component to the stuffing box sealing is the packing inside the stuffing box. WSI continually tests new and better materials to meet the demands for ever-changing well conditions. By working with rubber manufacturers and field testing new designs, WSI wants to make certain that our packing stands up to stringent durability and performance standards. Cone packing is available in sizes for all polished rods 1" through 1-3/4" in sets of 4 (3 top cone and 1 bottom cone).

### Soft Cone Packing

For sweet crudes with high oil-to-water ratios and low abrasives

### Teflon Cone Packing

For sweet crudes with low oil-to-water ratios and/or for reducing polish rod noise in noise-sensitive areas

### Brass Filled Cone Packing

For sweet crudes with high oil-to-water ratios and low abrasives. Good for reducing polished rod scale build-up

### Hard Cone Packing

For sweet crudes with low oil-to-water ratios

### High Temperature Cone Packing

For steam injection wells producing sweet crude

### HSN Cone Packing

For H<sub>2</sub>S and CO<sub>2</sub> wells



### Fluid Seal™ Packing

For 3000 PSI applications and pressure energized seal



### “V” Style Packing

Available in NBR or HSN compounds. Used in ELUG™ for both “Classic” and “Premium” stuffing box models

**Important Note:** The guidelines on this page are for general purposes only and should not be used as the sole determining factor for packing material selection. Each down hole condition is different and must be addressed on a case-by-case basis to determine the best material solution for your particular well condition.

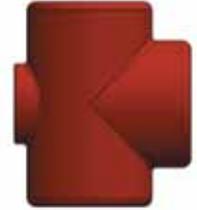


**Pumping Tees**

- Ductile iron construction on 3000 PSI tees
- Carbon Steel construction on 5000 PSI tees
- Zinc phosphate coated for better thread lubrication
- Multiple thread combinations
- Corrosion-resistant coatings available
- 1" NPT standard bleeder port



**MALE PUMPING TEE**



**FEMALE PUMPING TEE**

**Most Common Models (Other Models Available)  
3000 PSI Working Pressure Heavy Duty Pumping Tees**

Bottom Thread (Tubing or LP)	Top Thread (Tubing or LP)	Major Side Outlet (LP)	Height	Weight
2"	2"	2"	6"	9 lbs.
2" Male	2"	2"	7-1/4"	7 lbs.
2"	2-1/2"	2"	7-1/4"	13 lbs.
2"	3"	3"	8"	21 lbs.
2-1/2"	2"	2"	7-1/4"	13 lbs.
2-1/2"	2-1/2"	2"	7-1/4"	13 lbs.
2-1/2" Male	2-1/2"	2"	8"	10 lbs.
2-1/2"	3"	2"	8"	20 lbs.
2-1/2"	3"	3"	8"	18 lbs.
3"	3"	3"	8"	18 lbs.
3" Male	3"	3"	9-1/2"	19 lbs.
4"	4"	4"	7-3/4"	18 lbs.



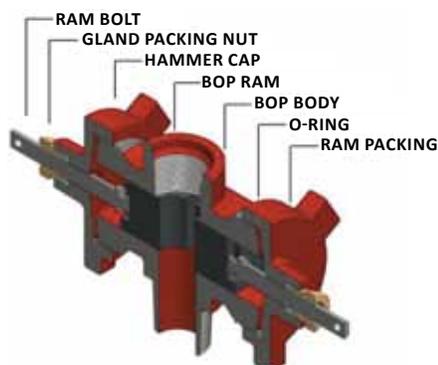
**5000 PSI Working Pressure Carbon Steel Pumping Tees**

Bottom Thread (Tubing)	Top Thread (Tubing)	Major Side Outlet (LP)	Height	Weight
2"	2"	2"	6"	11 lbs.
2-1/2"	2-1/2"	2"	7"	15 lbs.
3"	3"	3"	8"	19 lbs.

**NOTE: 5000 PSI WORKING PRESSURE CARBON STEEL FLOW TEES AVAILABLE UPON REQUEST**

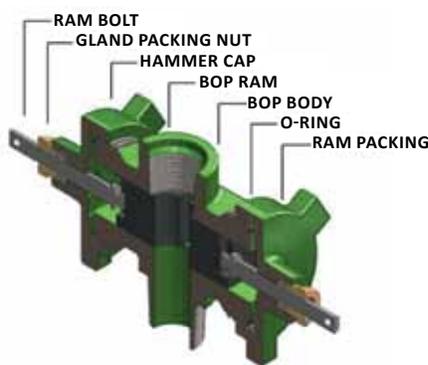


## Blow-Out Preventers (BOP)



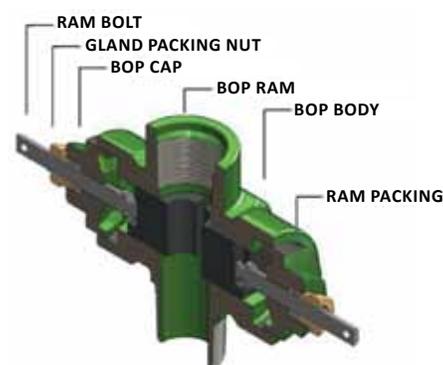
**Model 150**

- Quick opening
- Acme cap thread eliminates cross-threading
- Blow-out proof ram screw
- Full opening
- Reinforced ram block reduces extrusion
- Cap O-ring provides pressure-tight seal



**Model 300**

- 3000 PSI WP
- Quick opening
- Acme cap thread eliminates cross-threading
- Blow-out proof ram screw
- Full opening
- Reinforced ram block reduces extrusion
- Cap O-ring provides pressure-tight seal



**Model 312**

- 3000 PSI WP
- Taper thread internal end caps
- Higher working pressure than Model 150
- Full opening
- Ratigan style BOP

SPECIFICATIONS	MODEL 150	MODEL 300	MODEL 312
Sizes Available	2", 2-1/2", 3"	2", 2-1/2", 3"	2", 2-1/2", 3"
Working Pressure	1500 PSI	<b>3000</b> PSI	<b>3000</b> PSI
Body and Cap Material	Ductile Iron*	Carbon Steel	Carbon Steel
Ram Material	STD-BUNA, HIGH TEMPERATURE, NACE/HSN		
Ram Screw and Packing Gland	Carbon Steel**	Alloy Steel**	Alloy Steel**
Ram Sizes	Blind, 5/8" – 1", 1-1/8", 1-1/4", 1-1/2", 1-3/4"	Blind, 5/8" – 1", 1-1/8", 1-1/4", 1-1/2", 1-3/4"	Blind, 5/8" – 1", 1-1/8", 1-1/4", 1-1/2", 1-3/4"
Connection	Male X Female	Male X Female	Male X Female
Height	9-1/2"	9-1/2"	10"
Weight	43 lbs.	52 lbs.	52 lbs.
Width (Rams Open)	20"	20"	26"
Handles	Yes	Yes	Yes

\* Corrosion resistant materials & coatings available

\*\* NACE stainless steel optional



**Blow-Out Preventers (BOP)**

**500T**



Connections	
Box (UP)	Pin (Down)
2-3/8" EUE	2-3/8" EUE
2-7/8" EUE	2-7/8" EUE
3-1/2" EUE	3-1/2" EUE
3" LP	3-1/2" EUE
3" LP	3" LP

- 100% pressure tested from factory
- Pressure balanced rams allow use of well pressure to assist in closing process, reducing operator effort
- Forged alloy steel body eliminates risk of casting porosity
- Available in 4" and 5" nominal sizes with full opening bore
- Suitable for low temperature (-50°F) & sour service (NACE MR-01-75)
- Available in high temperature models
- 5000 psi maximum pressure rams available in **1-1/4", 1-1/2" & blind**

**500F (Single Ram Manual)**

**All Model 500 BOPs are rated at 5000 PSI WP**

- 3-1/8" flange
- Integral Tee
- 5K Top X Bottom flange
- Rams: Blind, 1-1/4", 1-1/2"
- Standard NACE
- 100% pressure tested from factory



**NOTE:** Alternative flange sizes available upon request. Custom pricing may apply.

**500F (Dual Ram Manual or Hydraulic)**



- Manual or Hydraulic actuation available
- 2-9/16" flange
- Integral Tee available with dual ram model
- 5K Top X Bottom flange
- Rams: Blind, 1-1/4", 1-1/2"
- Standard NACE
- 100% pressure tested from factory



**Polished Rod Clamps**

**Series 25 & Series 40 Series Polished Rod Clamps**

- Friction Style – Series 40
- Friction Style – Series 25
- Zinc phosphate coating for better corrosion resistance



**Series 25**

**Series 40**



**Series 10S**

**Series 10D**

**Series 10T**

**Series 10S, 10D & 10T Polished Rod Clamps**

- Most economical design in the industry
- Indention style clamps
- High load limits, yet light & easy to handle
- Lower stress concentrations on polished rods
- Independently hinged segments
- Highest clamping capacity at any bolt torque
- Small diameter for use with rod rotators
- Zinc phosphate coating for better corrosion resistance

SPECIFICATIONS	SERIES 25	SERIES 40	SERIES 10S	SERIES 10D	SERIES 10T
Rated Load	25,000 lbs.	40,000 lbs.	13,000 lbs.	26,000 lbs.	40,000 lbs.
Max. Test Load	35,000 lbs.	55,000 lbs.	32,000 lbs.	64,000 lbs.	76,000 lbs.
Polished Rod Size	1-1/8", 1-1/4", 1-5/16", 1-1/2"	1-1/8", 1-1/4", 1-5/16", 1-1/2", 1-3/4"	1", 1-1/8", 1-1/4", 1-5/16", 1-1/2"	1", 1-1/8", 1-1/4", 1-5/16", 1-1/2"	1", 1-1/8", 1-1/4", 1-5/16", 1-1/2"
Recommended Max. Bolt Torque	250 ft.-lbs.	550 ft.-lbs.	250 ft.-lbs.	250 ft.-lbs.	250 ft.-lbs.
Weight	10.5 lbs.	25 lbs.	3.75 lbs.	7.5 lbs.	11.25 lbs.
Height	4-1/8"	6-3/4"	2-1/2"	5"	7-1/2"
Rotating Diameter	9"	9"	5-3/4"	5-3/4"	5-3/4"
Body Material	Forged Steel	Forged Steel	Forged Steel	Forged Steel	Forged Steel

**Important Note:** All polished rod clamp bolts must be torqued to specifications noted in table using a calibrated torque wrench.

## Rod Rotators

Rod rotation is one of the most effective means of reducing rod coupling and tubing wear, especially when used in conjunction with rod guides. WSI rod rotators are available in maximum recommended loads ranging from 13,000 – 40,000 pounds.

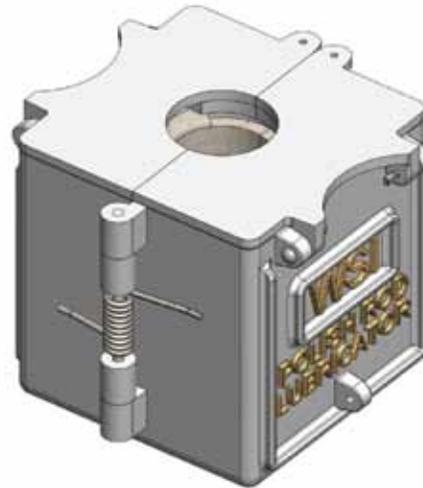


SPECIFICATIONS	1164	2252	3302	3302 SG
Max. Output Torque (ft./lbs.)	106	120	240	240
Max. recommended load	13,000 lbs.	33,000 lbs.	40,000 lbs.	40,000 lbs.
Required opening between bridle lines	4"	6"	7"	7"
Polished rod sizes	1-1/8" – 1-1/4"	1-1/8" – 1-1/2"	1-1/8" – 1-3/4"	1-1/8" – 1-3/4"
Shipping weight	18 lbs.	35 lbs.	47 lbs.	47 lbs.
Height	4-1/4"	5-1/2"	6-1/2"	6-1/2"
Rotation type	Helical gear	Ratchet table	Helical gear	Helical gear
Body material	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron
*Actuator cable	16'	16'	25'	25'
90° lever pulls per revolution	28	24	77	154

## Polished Rod Lubricator & Leveling Plate

### Polished Rod Lubricator

- Provides polished rod lubrication, reducing friction heat
- Lubrication extends stuffing box packing life
- Easy installation and can be used with any stuffing box
- 1 quart capacity reservoir
- Available for all polished rod sizes



### Leveling Plate

- Minimizes polished rod breaks
- Compensates for carrier bar misalignment up to 2 degrees
- Installed under rod rotator, polished rod clamp, or pump off controller to help compensate for damaged or uneven carrier bar surfaces
- Available for all polished rod sizes (pilot options)
- Ensures uniform engagement between polished rod clamp and carrier bar

**DEFINITIONS:** For purposes of this document, the following terms shall have the meaning stated as follows: (A) "WSI": WSI Holdings d/b/a Wellhead Systems, Inc., its subsidiaries, divisions and other affiliates. (B) "WSI Group": WSI, its subsidiaries, divisions and other affiliates and their respective officers, directors, employees and agents, individually and collectively. (C) "Equipment": All equipment, tools, products, materials and supplies and/or merchandise rented or sold by WSI and/or provided in connection with services performed by WSI. (D) "Services": All services furnished by WSI, including services of employees and equipment, tools, trucks and/or other merchandise necessary to perform any such employee's job. (E) "Customer": Party ordering and/or on whose behalf Equipment and/or Services are ordered and/or received from or furnished, rented or sold by WSI. (F) "Claims": All liabilities, losses, claims, fines, penalties, demands, causes of action, proceedings, damages and penalties, including attorney's fees and court costs and expenses.

**TERMS AND CONDITIONS:** Equipment ordered by Customer shall be sold by WSI only on the following terms and conditions of sale ("Sales Terms"). Equipment and Services furnished to Customer by WSI shall be furnished only on the following terms and conditions of Service ("Service Terms"). The Sales Terms and Service Terms shall be referred to herein, individually and collectively, as the "Terms and Conditions". The following provisions are included in each of the applicable Terms and Conditions:

(A) **General.** These Terms and Conditions constitute the entire contract (the "Contract") between the parties and may not be amended except in writing by WSI's authorized representative. Each shipment received by, and Services furnished to, Customer will be only on these Terms and Conditions, notwithstanding different or additional terms and conditions contained on any of Customer's forms, which are hereby objected to and which will not be binding on WSI. The failure of either party to enforce any provision hereof will not constitute a waiver or preclude subsequent enforcement thereof. No partial invalidity of this agreement will affect the remainder. The laws of the State of Texas shall govern the validity, construction, interpretation, and effect of these Terms and Conditions, excluding any choice of law rules which would otherwise require the application of laws of any other jurisdiction, and specifically including any applicable laws governing sanctions or the control of exports. Any dispute related to this Contract that cannot be resolved by negotiation between Customer and WSI shall be settled by binding arbitration conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association, as amended by this Contract. The arbitration shall take place in Houston, Texas, USA. The parties agree that this provision, the arbitrator's authority to grant relief, and all post-arbitration proceedings shall be subject to the provisions of this document, the governing law specified herein, the United States Arbitration Act, 9 U.S.C. et seq., and the ABA-AAA Code of Ethics of Arbitrators in Commercial Disputes. The arbitrator shall have no power or authority to make awards or issue orders of any kind except as expressly permitted by this document and the substantive law referenced above, and in no event shall the arbitrator have the authority to make any award that provides for punitive or exemplary damages or attorneys' fees.

(B) **Credit:** Any agreement between WSI and Customer is subject to Customer maintaining and maintaining credit satisfactory to WSI. WSI reserves the right to approve or reject the credit of any Customer and to establish credit terms for each Customer. WSI can terminate this Contract or modify credit terms at any time prior to delivery of Equipment or furnishing of Equipment or Service personnel without liability if WSI's assessment of Customer's financial condition changes. WSI reserves the right, prior to making any shipment of Equipment or furnishing of Equipment or Service personnel, to require that Customer furnish security for performance of Customer's obligations. Standard payment terms are net 30 days, except as provided elsewhere herein. All payments, unless otherwise specified, shall be made in U.S. Dollars to the address specified on the invoice without any deductions or setoffs. All currency exchange rate changes, duties, taxes, etc., not specifically included on the face of the quotation and/or invoice shall be paid by Customer. If credit terms are not met, in addition to its other legal rights, WSI may (i) defer or cancel, at its option, further shipments of Equipment or Service personnel and (ii) charge Customer interest at the maximum rate permitted by applicable law on the unpaid balance due. Customer will pay all of WSI's costs, including attorney's fees and court costs, incurred in connection with the collection of past due amounts from Customer.

(C) **NO CONSEQUENTIAL DAMAGES:** WSI WILL NOT BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHICH SHALL INCLUDE BUT NOT BE LIMITED TO, LOSS OF REVENUE, PROFITS OR ANTICIPATED PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF PRODUCTION, DAMAGES FOR FAILURE TO MEET DEADLINES, LOSS OF USE, RIG TIME EXPENSES, WELL CONTROL EXPENSES, SUBSURFACE DAMAGE, LOSS OF HOLE, RE-DRILLING EXPENSES, RESERVOIR OR FORMATION DAMAGE, POLLUTION DAMAGE AND/OR WRECK OR DEBRIS REMOVAL EXPENSE ("CONSEQUENTIAL DAMAGES").

(D) **Force Majeure:** WSI will not be liable for any damages, including special and Consequential Damages, caused by events of force majeure or any other occurrences beyond WSI's reasonable control. In the event of any such occurrence, the time for performance will be extended automatically for such reasonable time as is necessary to permit performance hereof.

(E) **DISCLAIMER OF WARRANTIES/SERVICES AND TECHNICAL INFORMATION:** ANY ASSISTANCE IN EQUIPMENT INSTALLATION OR TECHNICAL OR ENGINEERING INFORMATION CONCERNING EQUIPMENT OR SERVICES PROVIDED BY WSI WILL BE ADVISORY ONLY. AT CUSTOMER'S SOLE COST AND ON AN "AS IS" BASIS. NO WARRANTY IS GIVEN WITH RESPECT TO SUCH SERVICES OR INFORMATION AND WSI WILL NOT BE LIABLE FOR ANY CLAIMS ARISING FROM ITS FURNISHING OR CUSTOMER'S USE OF SUCH ASSISTANCE OR INFORMATION.

(F) **Availability:** Customer agrees that, although a price is listed in any Price List, the Equipment listed may or may not be available in all and/or any of WSI's locations.

(G) **Insurance:** The parties agree that the indemnities provided by Customer herein shall be supported either by available insurance or be voluntarily self-insured, in whole or part. Customer will, at its expense, maintain a policy of insurance with limits of at least US \$500,000 insuring Customer's obligations herein, which policies shall be primary and name WSI as additional insured. Customer shall provide WSI with a current certificate of insurance as evidence of such insurance policy.

(H) **Taxes:** All prices and day rates quoted are net of customs fees, duties, and all taxes (including, sales, use, excise or similar taxes and foreign withholding taxes) and Customer shall be responsible for all such amounts.

(I) **Acceptance:** Customer acknowledges and represents that it has reviewed these terms, conditions and the prices in the applicable Price List, including any additional terms and conditions concerning specific Equipment and/or Services where applicable and Customer shall keep itself apprised of all revisions, changes and/or amendments thereto.

(J) **Assignment:** Customer may not assign any rights or obligations hereunder, without WSI's written consent.

(K) **Amendment of Indemnities to Conform to Law:** The indemnities provided by Customer herein shall be limited to the extent necessary for compliance with the laws of the applicable jurisdiction, and to the extent any laws are at variance with the indemnities provided herein, such indemnities shall be deemed to be amended so as to comply with such laws.

(L) **Termination/Survival:** No termination shall relieve Customer of any liability incurred hereunder and the obligations of Customer hereunder shall continue and survive such termination, including all indemnities contained herein which are made expressly for the benefit of WSI Group.

(M) **Acceptance of Terms and Conditions by Customer:** (i) In the event of a conflict between these Terms and Conditions and the provisions of any of Customer's printed or other prepared form of purchase orders, work or service orders, job or delivery tickets, or other similar forms, the provisions of these Terms and Conditions shall govern and control. (ii) Customer agrees to the Terms and Conditions contained herein, unless Customer specifically objects to WSI in writing, to those specific Terms and Conditions which are not acceptable, (a) no later than 7 days after sales confirmation date or invoice date, whichever is earlier, or (b) prior to the time WSI, as per Customer's request, dispatches Equipment or Service personnel to Customer, whichever is earlier. Any conflict between these Terms and Conditions and the provisions of any of Customer's work or service orders, job or delivery tickets, or any other similar forms, shall not constitute an objection in writing by Customer. These Terms and Conditions shall not be altered, changed or modified, except as specifically provided herein or by the written agreement of Customer and WSI, signed by a duly authorized officer or representative of WSI.

(N) **Existing Agreements:** In the event that Customer and the applicable WSI entity supplying the goods and services have entered into a current Master Service Agreement (MSA) the terms and conditions of the MSA shall control.

(O) **Registrations:** Customer hereby authorizes WSI to sign on Customer's behalf any financing statements, financing charge statements or similar documents necessary to perfect any security interest or lien created in WSI's favor in this Contract. Customer hereby waives its right to receive copies of any such statements or documents.

(P) **Confidentiality:** Customer shall strictly maintain the confidentiality of all confidential information concerning WSI, Equipment or Services, which is acquired by or disclosed to Customer. Customer shall not acquire any title, interest or rights in such confidential information pursuant to this Contract.

#### SALES TERMS

1. **LIMITED WARRANTY/DISCLAIMER:** (A) Provided that Customer subjects Equipment only to operating conditions specified by Customer when the order is placed, if any, and operates it in accordance with WSI's written operating instructions, if any, WSI warrants Equipment sold pursuant hereto to be free of defects in material and workmanship for a period of 1 year after the date Equipment is delivered. The above warranty does not apply to: (i) used Equipment or Equipment that has been repaired or worked over; (ii) Equipment that has been modified or subjected to improper handling, storage, installation, operation or maintenance by Customer, including use of unauthorized replacement parts; (iii) component parts not manufactured by WSI, whether purchased by WSI or furnished by Customer, such parts being subject to any applicable manufacturer's warranty; (iv) parts requiring replacement because of normal wear and tear; (v) design on those jobs where WSI prepared drawings, lists or bills of material from designs furnished by others; and (vi) models or samples furnished to Customer as illustrations only of general properties of equipment. This warranty will not apply if Customer, on request by WSI, does not return the defective part to WSI for inspection, freight prepaid. (B) WSI's liability for breach of this warranty is expressly limited to the repair or replacement, at its sole option, of any Equipment or parts of Equipment which prove to be defective during the warranty period. All parts repaired or replaced hereunder shall be repaired or replaced F.O.B. WSI's Plant (i.e. location from which Equipment is shipped). (C) WSI'S OBLIGATION TO REPAIR OR REPLACE CONSTITUTES AGREED AND LIQUIDATED DAMAGES FOR ANY BREACH OF WSI'S WARRANTY. THIS LIMITED EXPRESS WARRANTY, AND THE STATED REMEDIES FOR BREACH THEREOF, SHALL BE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, WARRANTIES FOR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, AND IN LIEU OF LIABILITY FOR WSI'S NEGLIGENCE OR FAULT. WSI WILL NOT BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. (D) Notice of defective products or services must be given in writing to WSI by the Customer. Customer or user of the products must keep the products in unaltered condition for examination by WSI representative. All warranty claims must be made within ten (10) days after discovery, or after such claims should have been discovered, or else be barred from any remedy.

Notwithstanding the preceding, used parts and assemblies – unless rebuilt by WSI and specifically stated otherwise on the quotation or invoice, will carry no warranty. Warranties will not apply and be void if the product or Service has been subjected to or suffered misuse, negligence, abuse, neglect, accident, or has not been installed or operated or repaired in accordance with applicable published instructions or has been installed in or operated under more severe conditions than those specified for the particular product or Service or has been altered so as to affect its ability or reliability (except where such alteration has been accomplished with the prior written consent of WSI). Products sold by WSI, but manufactured by another company, will carry only the warranty of the manufacturer, and Customer will rely solely on that warranty. The liability of WSI for any loss or damage resulting to Customer or user or any third party from any defect in any product or Service will not, in any case, exceed the selling price which WSI received from Customer for that product or Service. WSI does not warrant that any of the products sold by it, if used or sold in combination with other equipment or used in the practice of methods or processes, will not, by virtue of such combination or use, infringe patents of others and WSI shall not be liable for any patent infringement arising from, or by reason of, any use or sale of any materials, Equipment or products not of WSI's manufacture or for the use or sale of any materials, Equipment or products or other goods specially made, in whole or in part, to Customer's design specifications.

2. **Return Policy:** Products purchased from WSI may be returned for credit provided the returned item is unused, in new condition, and considered by WSI to be a normally stocked item and WSI gives its written consent to such return at WSI's sole discretion. A minimum restocking fee of 20% of list price plus freight will be charged for inspection and testing on all products returned for credit. No products or other material will be accepted for credit after ninety (90) days from date of purchase.

3. **Cancellation or Changes:** There shall be no cancellations without WSI's written consent at WSI's sole discretion. Any cancellation at Customer's request may result in a cancellation charge equal to (a) if standard Equipment, 20% of, and (b) if nonstandard or special Equipment, 100% of, the full Contract price for Equipment billable by WSI to Customer, before any discount. Purchase orders once placed and accepted can be changed only with WSI's written consent. WSI reserves the right to make substitutions

or design and construction modifications to Equipment or Services provided these changes do not affect the performance of those Equipment or Services.

4. **Prices:** (A) Prices for standard Equipment will be the sales price shown on WSI's current product sales price list (the "Price List"). Prices are subject to change at any time without notice. (B) Requests for quotations for nonstandard Equipment should be sent to the appropriate WSI office. Quoted prices are valid for 30 days after the date of the quotation. Unless otherwise noted on the quotation, validity of the quotation may be extended at the sole option of WSI. (C) Prices are EX WORKS WSI's point of manufacture or one of WSI's stocking points, depending on the location from which the Equipment is shipped. (D) Customer will arrange for shipment of Equipment, at Customer's risk, and pay for all crating, handling and shipping costs. If Customer requests WSI to arrange for shipment or does not furnish WSI with shipping instructions prior to the time Equipment is ready for shipment, WSI will ship Equipment to Customer in a commercially reasonable manner, at Customer's risk, and WSI may charge Customer at WSI's cost, plus 15% or as otherwise agreed by the parties. (E) Prices are based on WSI's standard procedures and specifications for manufacturing and testing Equipment. Cost of additional labor, materials or outside service for modification of such procedures or specifications requested by Customer will be charged to Customer at WSI's total cost, plus 15%, including direct and indirect cost, such as engineering, labor, overhead and shop supplies. (F) Prices do not include the cost of personnel or equipment required to install the Equipment. Upon request, WSI may provide such personnel and Equipment at its prevailing rates at the time of installation.

5. **DISCLAIMER:** WSI will use reasonable efforts to have Equipment ready for shipment by the date agreed to by WSI, subject to receipt by WSI of all necessary Customer information, including approval of drawings. HOWEVER, WSI ASSUMES NO LIABILITY FOR DAMAGES INCURRED AS A RESULT OF ITS LATE DELIVERY OF EQUIPMENT, REGARDLESS OF CAUSE.

6. **Delivery, Title and Risk of Loss:** (A) Delivery, title and risk of loss will pass to Customer upon the date WSI notifies Customer the Equipment is ready for delivery to Customer or Customer's agent or carrier. EX WORKS WSI's Plant (i.e. location from which Equipment is shipped.) Customer shall be responsible for arranging shipping and for all shipping costs. (B) If WSI has not received shipping instructions at the time of delivery or if Customer requests that WSI store the Equipment until further instruction, WSI shall act as a bailee of such Equipment and may charge Customer WSI's customary storage rates. During any such bailment, Customer will maintain all-risk property insurance on Equipment, at its replacement value, and WSI will not be liable for deterioration of Equipment resulting from atmospheric conditions, acts of God, or other events not within WSI's reasonable control.

7. **CUSTOMER'S INDEMNITY OF WSI GROUP:** IF WSI MANUFACTURES OR MODIFIES EQUIPMENT IN ACCORDANCE WITH CUSTOMER'S PLANS OR SPECIFICATIONS, CUSTOMER WILL DEFEND, INDEMNIFY, RELEASE AND HOLD WSI GROUP HARMLESS FROM AND AGAINST ALL CLAIMS BY CUSTOMER, OR ANY OTHER PERSON OR ENTITY, AGAINST WSI GROUP OF EVERY KIND OR CHARACTER WHATSOEVER, INCLUDING BUT NOT LIMITED TO THOSE CLAIMS ARISING IN CONNECTION WITH BODILY INJURY, DEATH OR DAMAGE TO PROPERTY ARISING OUT OF, DIRECTLY OR INDIRECTLY, OR IN ANY MANNER CONNECTED WITH SUCH EQUIPMENT, INCLUDING ALL CLAIMS RESULTING, EITHER IN WHOLE OR IN PART, FROM WSI GROUP'S ALLEGED BREACH OR BREACH OF IMPLIED OR EXPRESSED WARRANTY (EXCEPT AS SPECIFICALLY PROVIDED HEREIN), OR OF THE DOCTRINE OF STRICT LIABILITY IN TORT OF WSI GROUP OR ANY OTHER PERSON OR LEGAL ENTITY FOR WHICH WSI GROUP IN LAW WOULD OTHERWISE BE HELD LIABLE, IRRESPECTIVE OF WHETHER WSI GROUP MAY BE ALLEGED OR PROVEN TO HAVE BEEN NEGLIGENT, (INCLUDING BUT NOT LIMITED TO ACTIVE, PASSIVE, SOLE, JOINT, CONCURRENT OR COMPARATIVE) OR OTHERWISE LEGALLY LIABLE (WITH OR WITHOUT FAULT OR WHETHER STRICTLY LIABLE OR IN BREACH OF ANY WARRANTY) ANY SUCH CLAIMS, WHETHER SUCH CLAIMS ARE BASED ON THEORIES OF CONTRACT LAW, TORT LAW, OR OTHERWISE, DIRECT OR INDIRECT, INCLUDING SPECIAL AND CONSEQUENTIAL DAMAGES FOR BODILY INJURY, DEATH OR PROPERTY DAMAGE OR DESTRUCTION OR ECONOMIC LOSS (INCLUDING, BUT NOT LIMITED TO SUBSURFACE PROPERTY OR PROPERTY RIGHTS), OR ON ACCOUNT OF INFRINGEMENT OF ANY PATENT, DESIGN, COPYRIGHT, OR TRADE NAME OR MARK.

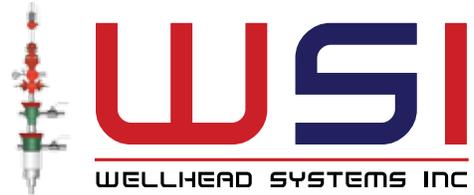
8. **Design and Construction Modification:** WSI may modify the design and method of construction of any Equipment without notice and without incurring any obligation to furnish or install such modification on Equipment previously or subsequently sold.

9. **Compliance with Laws:** Compliance with safety and health laws and regulations relating to the use of any Equipment or products is the sole responsibility of Customer, WSI makes no representations with respect thereto.

10. **Quotations.** Unless otherwise agreed in writing by WSI, quotations furnished by WSI are not intended as and shall not be construed as constituting an offer to Customer, and any quotation of WSI is subject to, and shall not become binding upon WSI until (i) actual receipt by WSI of Customer's written order based on all the Terms and Conditions stated herein, without qualification, within 30 days after the date hereof, and (ii) WSI's written acceptance of such order.

11. **International Sales.** Unless otherwise specified in writing signed by WSI, Equipment sold from a WSI location in the USA for shipment to another country shall in addition to these Terms and Conditions, be governed by the following: (a) all prices and terms of sale are FCA (Incoterms 2000) WSI's factory from which shipment is made; (b) all orders hereunder are subject to WSI's ability to obtain export licenses and other necessary papers within a reasonable period; (c) Customer will furnish all Consular and Custom declarations and will accept and bear all responsibility for penalties resulting from errors or omissions thereon; (d) Customer shall not export or re-export the Equipment or any goods or items which incorporate the Equipment if the export or reexport would violate the export or import laws of the United States or any other applicable jurisdiction; (e) WSI reserves the right to require Customer to provide an irrevocable Letter of Credit with a bank in terms acceptable to WSI or an advance payment deposited into a WSI nominated account; and (e) the United Nations Convention for the International Sale of Goods shall not apply to this agreement.

The Global Wellhead Systems Authority™



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