BURST PLUG
TUBING DRAIN

BENEFITS

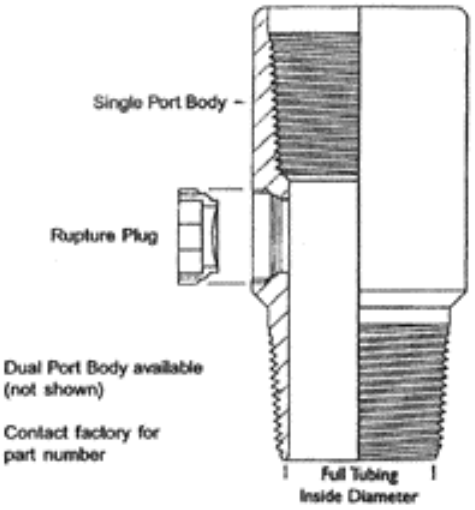
* Provides a positive indication of open drain
* Eliminates shear pin devices
* Provides the highest accuracy and reliability
* Corrosion resistant
* One Plug, available in three pressures for all tubing sizes, means less inventory and cost
* No mechanical moving parts
* No fragile o-rings to be damaged during assembly causing failure in the field.

DESCRIPTION

The Hydraulic Tubing Drains provide a positive method to equalize the fluid level in tubing strings, without mechanical manipulation. Appropriate production practices should always include the Hydraulic Tubing Drain as standard equipment in all wells to eliminate the potential hazards associated with pulling wet tubing strings.

TYPICAL APPLICATIONS

* Tubing drains remove the hazard of handling stuck pumps, by pulling dry strings.
* When tubing cannot be rotated or pulled to actuate mechanical draining devices
* Where corrosion build up restricts the “S” drain from operating properly
* Provides a means to pump down the tubing to kill a gassy well before pulling.
* Eliminates expenses and wasted time associated with wet jobs
* Allows producer to double traveling, and standing, valves operating, or none at all.
* Drains tubing for submersible pumps equipped with a check valve and pumps in a
  high angle or straight hole.
* Drains tubing above anchors and packers.



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OPERATION

The Burst Plug Tubing Drain is simple in design and utilizes applied hydraulic pressure to rupture the membrane which opens the fluid port to the casing annulus, with no restrictions. The Burst Plug Tubing Drain should be installed box up and pin down at the desired depth in the tubing string. For hydrostatic head at the drain, and determination of the proper disc pressure (psi), multiply .433psi/ft by the drain depth. Then select the disc for 130% of the nominal fluid load.

SERVICE

The Burst Plug Tubing Drain is best serviced by your local distributor to ensure proper disc preparation, assembly and testing. In applications where this is not possible the Burst Plug Tubing Drain can be field serviced, with moderate care, and attention to detail.

SELECTION GUIDE

Nominal Size	Outside Diameter	Drift Diameter	Total Length
2 3/8" (60mm)	3 1/16" (78mm)	1.901" (48mm)	7" (178mm)
2 3/8" (60mm)	3 5/8" (92mm)	1.901" (48mm)	7 1/4" (178mm)
2 7/8" (73mm)	3 5/8" (92mm)	2.347 (60mm)	7 1/2" (191mm)
2 7/8" (73mm)	4" (102mm)	2.347 (60mm)	7 3/4" (197mm)
3 1/2" (89mm)	4 1/2" (114mm)	2.867" (73mm)	8 1/8" (206mm)
4" (102mm)	5" (127mm)	3.351" (85mm)	8 3/8" (213mm)
4 1/2" (114mm)	5 9/16" (141mm)	3.833" (97mm)	8 5/8" (219mm)

BURST PRESSURES

(All above sizes available in each of the following opening pressures)

Burst Pressure	Burst Pressure
1500 psi (102atm)	4500 psi (306atm)
2000 psi (136atm)	5000 psi (340atm)
2500 psi (170atm)	5500 psi (374atm)
3000 psi (204atm)	6000 psi (408atm)
3500 psi (238atm)	6500 psi (442atm)
4000 psi (272atm)	7000 psi (476atm)

SIZES

The Burst Plug Tubing Drain is available in the above standard nominal sizes, using standard API EUE tubing threads. Non-standard configurations are available on an engineered design basis. Full tubing inside diameters are standard on all nominal (stock) sizes.

BURST PRESSURE/TEMPURATURE CONVERSION TABLE

This table is theoretical calculation of temperature vs. bust pressures.

70°F	100°F	200°F	300°F	400°F	500°F
1500 psi	1488 psi	1428 psi	1410 psi	1395 psi	1407 psi
2000 psi	1984 psi	1904 psi	1880 psi	1860 psi	1876 psi
2500 psi	2480 psi	2308 psi	2350 psi	2325 psi	2345 psi
3000 psi	2976 psi	2856 psi	2820 psi	2790 psi	2814 psi
3500 psi	3472 psi	3332 psi	3290 psi	3255 psi	3283 psi
4000 psi	3968 psi	3808 psi	3760 psi	3720 psi	3752 psi
4500 psi	4464 psi	4284 psi	4230 psi	4185 psi	4221 psi
5000 psi	4960 psi	4760 psi	4700 psi	4650 psi	4690 psi
5500 psi	5456 psi	5236 psi	5170 psi	5115 psi	5159 psi
6000 psi	5952 psi	5712 psi	5640 psi	5580 psi	5628 psi
6500 psi	6448 psi	6188 psi	6110 psi	6045 psi	6097 psi
7000 psi	6944 psi	6664 psi	6580 psi	6510 psi	6566 psi