Tubing Drain

Burst Plug Tubing Drain

Description:

The Hydraulic Tubing Drain provides a positive method to equalize the fluid level in 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.

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

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

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)

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Operation

The burst plug Tubing Drains 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.

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/ Temperature Conversion Table

This table is theoretical calculation of temperature vs burst 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	1584 psi	1904 psi	1880 psi	1660 psi	1875 psi
2500 psi	2480 psi	2308 psi	2350 psi	2225 psi	2345 psi
3000 psi	2976 psi	2856 psi	2820 psi	2790 psi	2814 psi
3500 psi	3472 psi	3332 psi	3390 psi	3355 psi	3283 psi
4000 psi	3563 psi	3806 psi	3760 psi	3720 psi	3753 psi
4500 psi	4464 psi	4284 psi	4230 psi	4185 psi	4221 psi
5000 psi	4560 psi	4760 psi	4700 psi	4680 psi	4690 psi
5500 psi	5456 psi	5236 psi	5170 psi	5115 psi	5159 psi
6000 psi	5552 psi	5712 psi	5640 psi	5580 psi	5628 psi
6500 psi	6448 psi	6188 psi	6110 psi	6045 psi	6097 psi
7000 psi	6684 psi	6684 psi	6580 psi	6510 psi	6555 psi

Burst Pressure

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

Burst Pressure	Burst Pressure
1500 psi (102atm)	4000 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)

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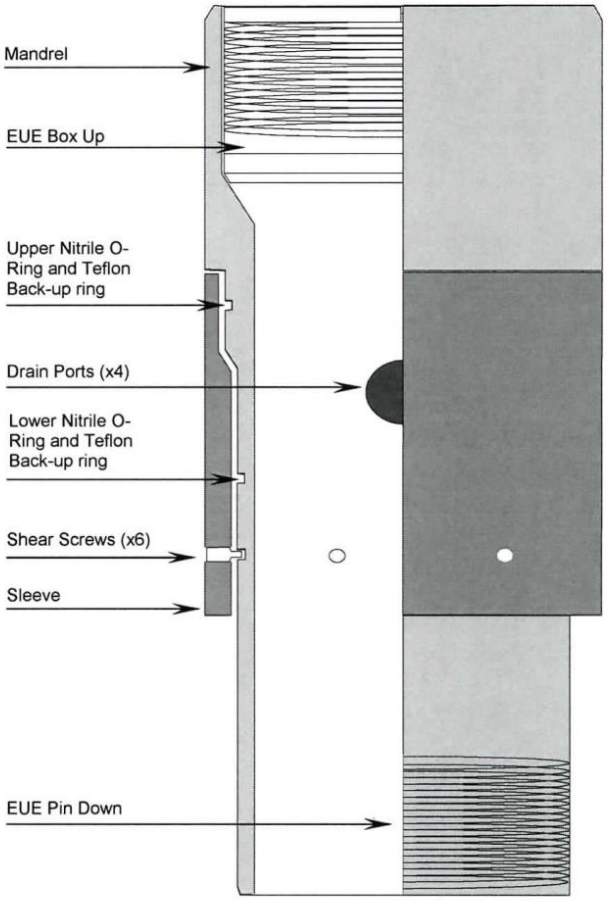
Tubing Drain

Tubing Drain Valve



The Tubing Drain Valve provides a simple method for draining the tubing string before tripping out. The Tubing Drain Valve has a shear pinned sleeve and it is activated by inside tubing pressure. The Tubing Drain Valve is used with both rod pumps and progressing cavity pumps. The opening pressure can be adjusted by using the required number of shear screws.

Specifications

Tubing Size		Tool OD		Tool ID		Tool Length		Connection
Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
2-7/8	73.0	3.975	101.1	2.441	62.0	12.00	304.8	2-7/8 EU
3-1/2	88.9	4.500	114.3	2.992	76.0	13.75	349.3	3-1/2 EU
4-1/2	114.3	5.560	141.2	4.000	101.6	14.50	368.3	4-1/2 EU
4-1/2	114.3	5.200	132.1	3.958	100.5	14.50	368.3	4-1/2 EU