

Hydraulic pipe puncher type DGT-1

The hydraulic pipe puncher is used to punch hole to drain fluid from tubing during repair and emergency works in the well.

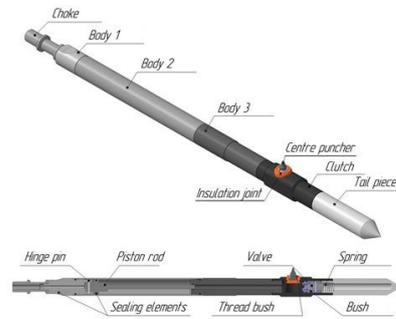


Fig. 1.

Setup and operation principle

The hydraulic pipe puncher (Fig. 1) consists of choke, body 1, rod bush, body 2, rod, thrust bush, body3, clutch, isolation joint, puncher, thread bush, ring, valve bush, valve, cup, spring, tail piece, rod hinge pin, set of sealing rings and valve hinge pin. Nipple in upper part has connecting outer thread, in lower part – internal thread for connecting to body 1. Body 1 is screwed by lower connecting thread to body 2. Body 2 houses rod fixed by rod pin in rod sleeve. Rod sleeve is installed in internal cavity of body 1 and is pressed with upper end of body 2. Design provides for installation of rod pin (shear) of two diameters, with different shear load. To install pins in rod and rod sleeve holes of corresponding diameters are made. Side surface of rod tail are provided with two grooves, in which sealing rings are set. Body 2 is screwed with body 3. Thread joint is sealed with ring. Between rod and body 3 thrust sleeve is set. Sleeve has two grooves (outer and internal), where corresponding sealing rings are located. Body 3 is screwed to sleeve. Joint is sealed with ring. Internal cavity of body 3 is filled with oil. In middle part of sleeve in cavity brass cup with sealing ring in circular groove is set, which can move radially. Centre puncher, fixed by threaded sleeve, is installed to brass cup.

Standard size code of roller swage	DGT-60	DGT-73	DGT-89
Nominal diameter of tubing punched, in	2.36	2.87	3.5
Connecting thread, GOST 13877-96	ShN-22	ShN 22	M42x2
Outer diameter of body 1, in, not more	1.57	1.99	2.36
Outer diameter of sleeve, in, not more	0.70	2.23	2.69
Outer diameter of nose piece, in, not more	1.57	1.87	2.36
Outer diameter of prick puncher, in, not more	0.47	0.61	0.61
Outer diameter of shear pin, in, not more	0.17	0.22 or 0.25	0.27
Pressure differential necessary to cut shear pin, psi			
- diameter 0.22 in	3 046 +/- 304	3 771 +/- 290	
- diameter 0.25 in		4 206 +/- 290	
- diameter 0.27 in			3 553 +/- 290
Length, ft, not more	3.29	3.66	3.73
Weight, lb, not more	17.64	26.46	41.89