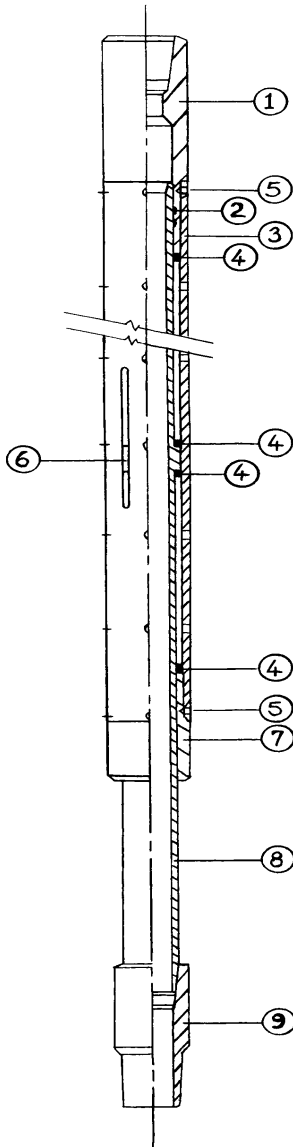


SHOCK ABSORBER - IN LINE ("VERTICAL")



APPLICATION

The vertical shock absorber is designed to prevent the packer from unseating and protect gauges in the string when the guns are fired giving rise to initial pressure shocks and disturbances.

OPERATION

Shock waves transmitted to the base of the shock tool are absorbed and cushioned by the use of Belleville washers on both up and down strokes. Each washer is rated to 800lb and will deflect to a maximum of 0.06". For repeated use, the washers should be replaced every 6 runs. 2 keys at 90° in the body of the tool prevent rotation.

ASSEMBLY

The tool is normally pre-assembled at manufacture. It can, however, be disassembled by removing upper and lower lock screws holding the top and bottom subs in place which allows access to the washers placed over the mandrel. O-rings and washers can be examined and easily changed. 94 washers are used in the upper part of the tool and 35 in the lower part.

Item	Description
1	Top Sub
2	O-Ring Size 229 (x2)
3	Housing
4	Belleville Washers
5	Hex Soc Set Screw
6	Key (x2) (held by 2 set screws each)
7	Bottom Nose
8	Mandrel
9	Crossover

SPECIFICATIONS	3-1/2"	3-3/4"	5"
Thread	8rd. EUE or as specified		
Min ID (in)	1.744	1.992	2.44
Max OD (in)	3.50	3.75	5.00
Max Shock Load (lb)	36,000	40,000	50,000