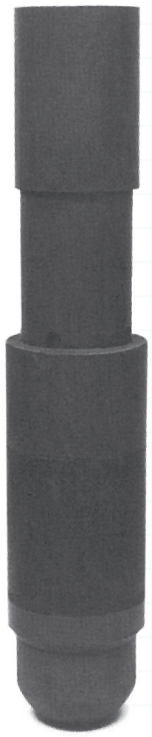
Type A Cementing Shoe
Packer Type



Type A Cementing Shoe is designed to effectively protect the formation below the shoe from cement contamination. The rubber packing element, when expanded, not only retains the cement above the shoe, but also assures a seal between the casing and the formation. This is particularly important in the completion of water input wells.

The Type A Cementing Shoe is made up on the casing string and run to the point where the casing is to be cemented. The tripping ball is dropped and allowed to gravitate to its seat.

Pump pressure is then slowly built up in the casing. The pressure will move the inner piston downward, allowing fluid to enter the outside cylinder. Continued pressure will force fluid behind the packing rubber while moving the top of the rubber downward. This will expand the packing rubber to seal against the sides of the open hole. Pressure of approximately 500 P.S.I. will shear the bolts holding the sliding sleeve. The sleeve will move downward, opening the cementing ports and locking the packing rubber in its expanded position. The tripping ball prevents cement slurry from entering the bottom of the shoe, and the cement leaves the casing through the cementing ports above the packing element.

All internal parts of the shoe are easily drillable.