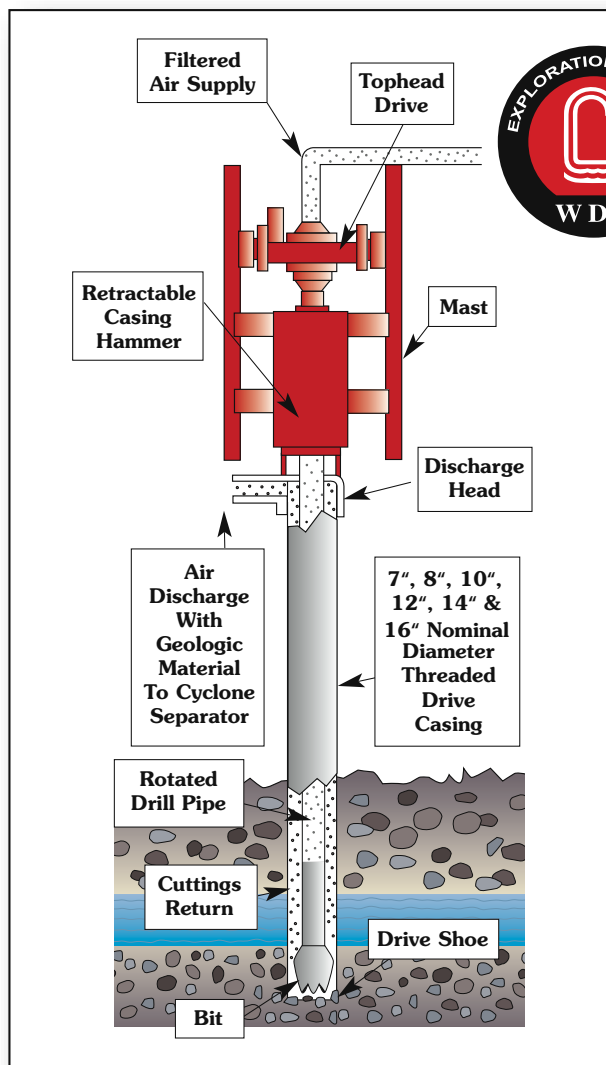


# CASING HAMMER

air rotary

The Air Rotary Casing Hammer System (ARCH) consists of a non-rotating flush-threaded casing driven in conjunction with a conventional air rotary drill string. Cuttings are cleared from the hole by the bit rotation and air circulation. The material is discharged through a hose into a cyclone, which separates the air from the formation cuttings to facilitate sampling and drill cuttings containment. The advanced drive casing is a heavy wall flush-threaded pipe. Six diameters are available to accommodate different well diameters and depth requirements. The casing is driven with a pneumatic or hydraulic drill-through casing hammer, which is rated up to 9700 foot-pounds of energy.

Upon completion of drilling, the drill rod and bit are extracted from the center of the drive casing to allow the installation of permanent well construction materials. A hydraulic casing puller rated up to 250 tons extracts the drive casing. After the well casing is placed, the sand, bentonite pellets, and cement are installed in the annulus as the drive casing is pulled.



## PRIMARY BENEFITS

Eliminates the need to set cemented-in conductor casing in upper aquifers in order to drill into lower aquifers.

The flush-threaded drive casing seals off formations in the borehole as drilling progresses, eliminating the potential for cross contamination of the aquifers.

Eliminates the need for drilling fluids.

The casing can be driven to a specified depth allowing continued borehole advancement with direct air/mud rotary methods.

Depth discreet water, vapor, and soil samples can be taken at selected intervals.

Drill cuttings discharged from the cyclone provide representative stratigraphy while drilling progresses.

Drills through most geologic formations and is superior over other methods in conglomerate.

Provides a clean borehole for well construction. This eliminates problems during well installation.

The completed well does not have any drilling mud to develop; thus the well develops quicker and is more efficient.

The method has been approved and utilized for over fifteen years on projects for the Environmental Protection Agency, California Department of Health Services, Arizona Department of Environmental Quality, Regional Water Quality Boards, Department of Energy, Department of Defense and private clients throughout the Western States.

*Sample specifications and references are available upon request.*

## GENERAL INFORMATION

Nominal Casing Diameter	Well Diameter	Nominal Depth Capacity	Telescoped Casing Diameter	Telescoped Depth Capacity
7"	2"	600'	10" x 7"	1000'
8"	4"	500'	10" x 8"	900'
10"	5"	400'	12" x 10"	750'
12"	6"	350'	16" x 12"	550'
14"	8"	250'	16" x 14"	450'
16"	10"	200'		

*The actual depth capacity will vary*

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