

Acoustic Velocity Core Holder AVC Series

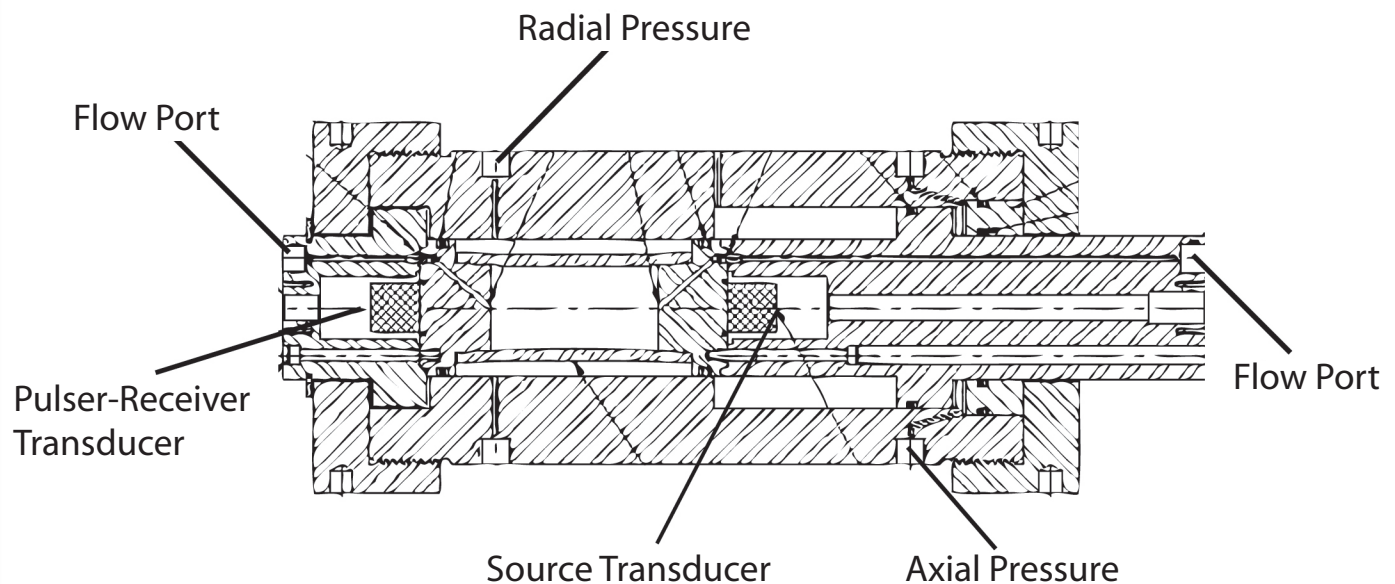
Applications

- Acoustic velocity measurements at reservoir conditions
 - Propagate ultrasonic waves through core samples
- Propagate compressional and two plane polarized shear waves
 - Measure dynamic Young's, bulk, and shear modulus
 - Measure Poisson's ratio

Proven Design

Acoustic velocity measurements are performed during logging measurements at reservoir locations. This core holder is used to test a core sample in the laboratory at reservoir conditions. The core holder contains a pair of insulated transducers.

The core sample is tri-axial loaded to insure proper surface contact between the sample and the transducers. The operator can flow fluids through the core sample in addition to performing the acoustic measurements. The operating pressure, temperature, and sample dimensions can be specified by the client.



Pulsar-Receiver

The electronics are normally provided by the end-user to work with these core holders. Typical systems include pulser-receiver electronics which send a high voltage excitation pulse to the source transducer, to amplify and condition the ultrasonic signal transmitted to the receiver transducer, and to select the P, S1, and S2 ultrasonic signals. Excitation pulse energy can be selected from various pulse amplitudes between 200 and 1000 volts and a repetition rate is typically fixed at 10 Hz. Either transducer can act as either the source or the receiver. The received signal is normally amplified by selectable gains of 0.1, 0.3, 1, 3, 10, 30, 100, or 300; or in remote mode the gain is continuously variable between 0.1 and 1000. The ultrasonic software is written for the oscilloscope to operate at 100 Megasamples per second digitization rate and 60 MHz bandwidth.

Ultrasonic Transducers

Transducers are used in high-pressure experiments to propagate ultrasonic waves from the source to receiver along the axis of jacked cylindrical samples. Transducers are manufactured to match the dimensions of the test sample. The frequency range is between 250 kHz and 1MHz. Transducers sequentially propagate a single compressional (P) and two plane-polarized shear (S1 and S2) waves. The compressional and shear velocities may be combined with bulk density to calculate dynamic Young's modulus, bulk modulus, shear modulus, and Poisson's ratio. P and S wave signal selection, source excitation, and signal conditioning of the ultrasonic signal from the receiver are controlled by

Specifications

Diameter	1, 1½, 2 inch or 30, 40, 50 mm
Length	0-2 inches
Confining pressure	2,500, 5,000, 10,000 psig
Temperature	Room, 200°F, 300°F (93°C, 149°C)
Wetted material	Titanium
Fluid inlet	1 each standard
Loading style	Tri-axial

Ordering Information

When requesting a quotation from Temco for a core holder, please provide the specifications required per the listed specifications. Please list any special features required for a particular application.