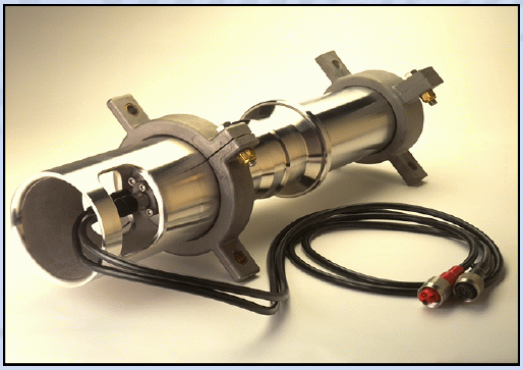
# Sleeve Gun

Marine Seismic Acquisition Energy Source



## FIELD-PROVEN IN WORLD-WIDE APPLICATIONS

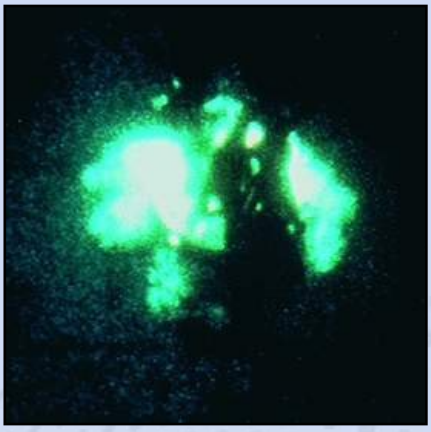
- Deep water multiple array 3-D seismic surveys
- Ocean bottom cable energy source
- Shallow water and marsh operations, with optional mud-shuttles
- High-resolution surveys, requiring extended bandwidth
- VSP applications, both offshore and onshore

## ION SLEEVEGUNS ARE AVAILABLE IN TWO SERIES

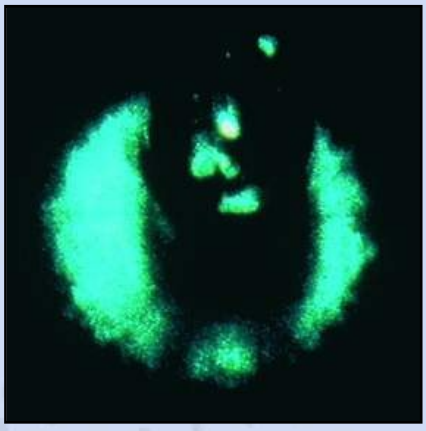
- Sleeve Gun-IC and Sleeve Gun-IIC
- Sleeve Gun-IC is provided in three sizes, with volumes of 10 $in^3$, 20 $in^3$ or 40 $in^3$
- Sleeve Gun-IIC can be obtained in five sizes; 70 $in^3$, 100 $in^3$, 150 $in^3$, 210 $in^3$, and 300 $in^3$
- Chamber inserts are available if further adjustment in gun volume is desired

## PRECISE TIMING FOR A SUPERIOR ACOUSTIC SIGNATURE

The figure on the right shows a plot of timing data obtained for 500 consecutive shots. The mean firing time is 10.948 msec with a standard deviation of 0.071 msec and a dispersion of 0.374 msec.

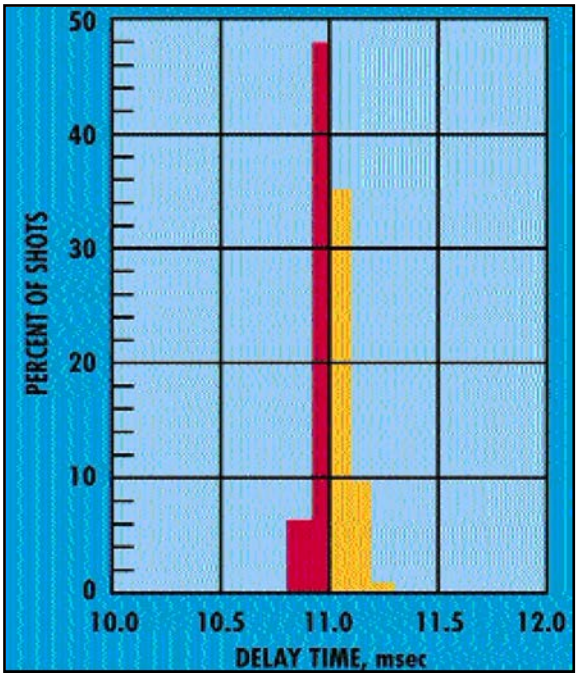


Ported Gun – Irregular Gun Bubble



ION Sleeve Gun – Regular 360° Gun Bubble
No Recoil

ion
MARINE IMAGING SYSTEMS



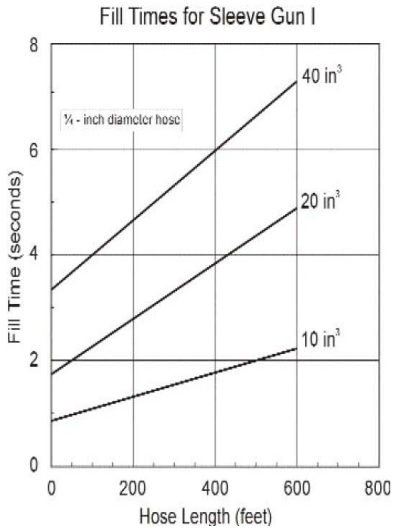

Gun volumes:  4 to 300 cuin

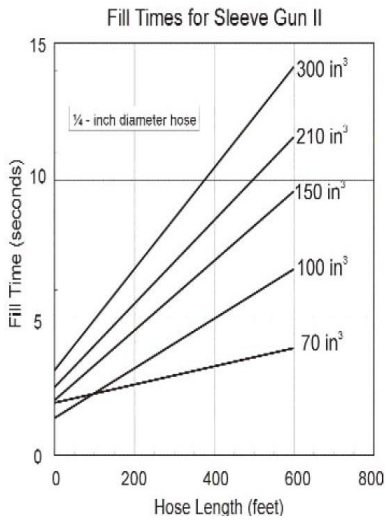
## RELIABILITY, SAFETY, PLUS EASE OF REPAIR

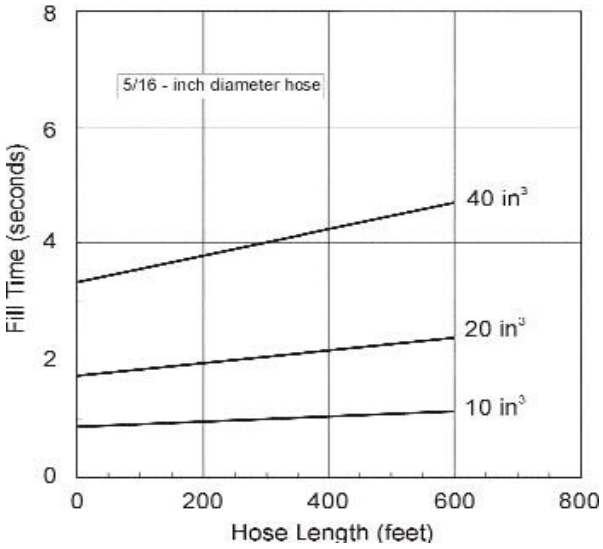
- Routine service internal in excess of 250,000 shots
- Long-life wear surfaces and wear indicators to prevent unnecessary part replacements
- Crown seals and  wear rings with longer lives
- May be deployed and retrieved without high pressure air applied to the guns
- Fewer parts for quick, easy, low cost maintenance
- Simple, reliable face seal
- Patented low-impedance timing coil yields maximum tolerance to leakage
- Solenoid valve with inertial poppet and without dynamic o-ring seals

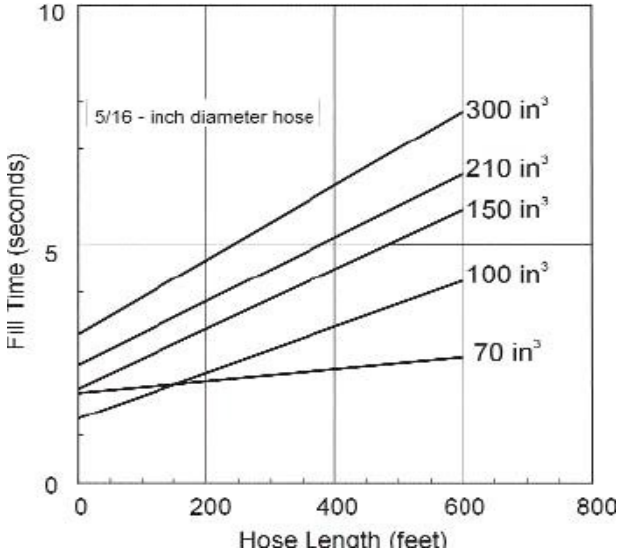
## FEATURES

- Polarized timing coil
- Measured standard deviation of 110 µs with a 351 µs dispersion
- Tow clamps equipped with a top hat that minimizes electrical cable and air hose problems during handling and operation
- Bolt-in chamber plugs (inserts) available in 5 $in^3$ increments

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