

Bi-Centered Centralization

“Up-jet” Float Shoe, Collar and Inline Centralizer

The Bi-Centered Float Shoe
has the unique “Tornado”
Up-Jet System
that has

The **RAY OIL TOOL COMPANY**
Bi-Centered Float Equipment and Inline
Centralizers are centralized with an integral bow
spring centralizer that fully recesses for close
tolerance passage and flexes out in the larger
wellbore below.

been most successful with the ROTCO
patented Solid Centralized Float Shoe.



The API approved flexible bow centralizers can
be recessed to below the outside diameter of
the Bi-Centered equipment for easy passage
through subsea wellheads, close
tolerance casing internal diameters,
and later flexes out for centralization
in underreamed or bi-center drilled
wellbores. The unique “patent pending”
LUG supported flexible bow centralizer
system allows the bow centralizer to
be drawn through restrictions going in
or out of the wellbore, reducing bow
spring stresses. In these most difficult
conditions, this combination with
the ROTCO “Up-Jet” Float Shoe
institutes the best possibility for
“No Squeeze” results.

Centralized
“Tornado”
Up-Jet Action



Float Shoe

PATENT PENDING



Float Collar
and/or Inline Centralizer

**“THE CENTRALIZATION
SPECIALIST”**



STAND-OFF®