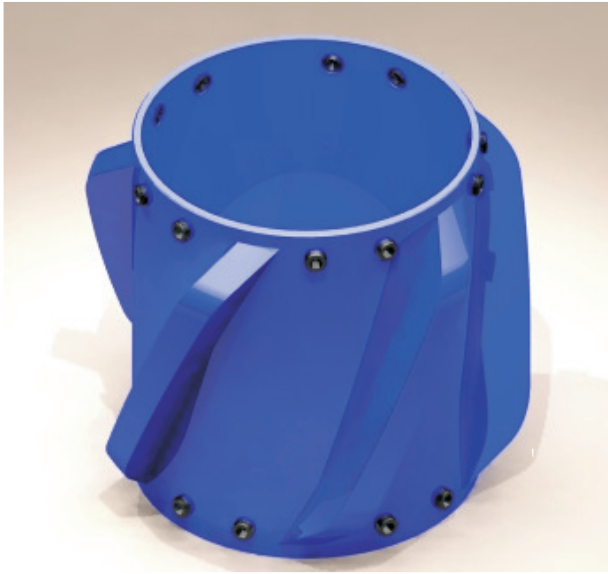


SPIRAL VANE RIGID CENTRALIZER



Fixed Spiral Vane



Rotating Spiral Vane

- **Provides Positive Standoff**
- **Improved Vane Angle Reduces Friction, Drag and Running Forces**
- **Helps Prevent Differential Sticking**
- **Rugged 10-20 Mild Steel Construction**
- **Fixed (HD) Model with Set Screws**
- **Rotator (Free Floating) Styles Available**
- **Longer Vanes for Better Standoff**

The design concept of this solid body-angled vane centralizer brings a new dimension to casing centralization and successful primary cement jobs. The SPIRAL VANE CENTRALIZER is designed to improve primary cement jobs and eliminate costly remedial squeeze work. These results are accomplished by positive standoff centralization, good hole cleaning and uniform cement displacement, regardless of casing orientation in the wellbore. There are no laminar gaps between the spiral vanes.

The angled vanes impart a radial flow path for pumped wellbore fluids. This radial flow provides positive transport for removal of solids and cuttings, even on the low side of highly angled and horizontal wellbores. The angled vanes also create a fluid displacement uplift by running the casing in the wellbore, and thereby assist in hole cleaning while transporting the casing to bottom. The angled vanes assure uniform cement placement around the O.D. of the casing, which is critical for successful primary cement jobs.

SPIRAL VANE RIGID CENTRALIZER

STANDARD LENGTH IS 8" (OTHERS AVAILABLE)

CASING SIZE "	SLEEVE I.D. "	SLEEVE O.D. "	# OF VANES	# OF SET SCREWS	STANDARD VANE SIZES	
					MIN O.D.	MAX O.D.
2 7/8	3	3 3/8	3	12	3 1/2	8 1/4
3 1/2	3 5/8	4	3	12	4 5/8	9 1/2
4	4 1/8	4 1/2	3	12	4 3/4	9 1/2
4 1/2	4 5/8	5	3	12	5 3/4	9 1/2
5	5 1/8	5 1/2	3	12	6	9 1/2
5 1/2	5 5/8	6	3	12	6 1/2	10 1/2
7	7 1/8	7 1/2	6	12	8	12
7 5/8	7 7/8	8	6	12	8 1/4	8 3/4
7 5/8	7 3/4	8 1/8	6	15	8 7/8	12
7 3/4	8	8 1/2	6	15	9 1/4	12
8 5/8	8 3/4	9 1/4	6	15	9 7/8	12 1/2
9 5/8	9 7/8	10	6	18	10 1/4	10 7/8
9 5/8	9 3/4	10 1/8	6	18	11	14 1/4
9 7/8	10	10 1/2	6	18	11	14 1/4
10 3/4	11	11 1/2	6	24	12 1/4	21
11 3/4	12	12 1/2	6	24	13 1/4	21
13 3/8	13 5/8	14	9	24	14 3/4	24
16	16 1/4	16 3/4	9	24	17 2/4	25 1/2
20	20 1/4	20 3/4	9	30	21 1/4	30
24	24 1/4	24 3/4	9	36	25 1/2	36

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
SLEEVE I.D. AND O.D. ARE DETERMINED BY THE VANE O.D. OF THE TURBULATOR

- **Vane O.D. is typically recommended to be either 1/4" under bit size or 1/8" under drift diameter.**
- **INVENTORY: Available in most casing and hole size combinations.**
- **Computerized spacing program available.**

