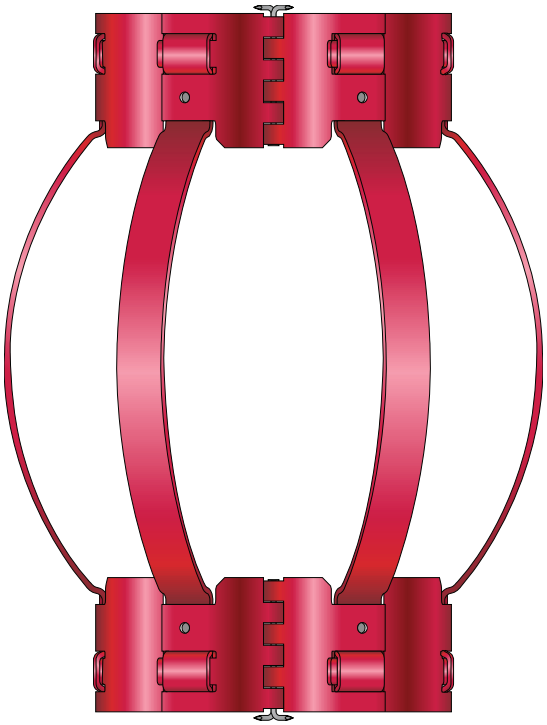
Nonweld Bow-Spring Centralizer

Weatherford's nonweld bow-spring centralizers are designed to centralize casing or tubing in the wellbore during running and cementing operations. With over 50 years of field experience and laboratory testing, the nonweld spring-bow centralizer features high-quality, spring-steel bows that are attached to integrated, hinged end collars with locking tabs. The hinged design enables the end collars to be latched onto casing over a stop collar, if desired, for easy installation. The centralizer should be fitted over a stop collar to ensure the tool is pulled in and out of the wellbore. The nonweld design provides reliable downhole performance in cased-hole or openhole applications. The bows provide maximum standoff to achieve the most efficient displacement of mud and cement.

Nonweld bow-spring centralizers are available in several bow heights and sizes, assuring optimum restoring force and providing a variety of bow configurations for special applications. During the planning phase, Weatherford's CentraPro Plus® software is recommended to ensure optimum centralizer quantity and placement with minimized friction forces.



Applications

- Tubing or casing applications
- Vertical and deviated wells
- Wells where rotation capabilities are not required
- Can be run inside casing or in openhole

Features, Advantages and Benefits

- High-performance bows provide maximum standoff in multiple locations of the annulus, providing the best possible conditions for primary cement to achieve zonal isolation, reducing remedial cementing operations and costs.
- All common centralizer sizes have been tested and validated to meet American Petroleum Institute (API) 10D requirements, providing reliability and durability during operations.

Nonweld Bow-Spring Centralizer

Features, Advantages and Benefits *(continued)*

- Nonwelded design can withstand most wellbore environments, providing operational flexibility.
- Locking tabs secure the high-quality, spring-steel bows to the hinged collars, bearing the load force of the centralizer for a reliable downhole performance.
- Bow configurations are available in various heights and sizes suitable for most applications, ensuring operational flexibility.
- Bows and hinged collars are stocked at most locations, enabling the centralizers to be assembled to specifications quickly.

Specifications

Nonweld Single-Bow Centralizer Heights

	STA0	STA1	STA2	STA3	STA4
in.	0.965	1.161	1.437	2.303	3.051
mm	*24.5*	*29.5*	*36.5*	58.5	*77.5*

Nonweld Single-Bow Centralizers'

Casing Size (in.)	Bow Type	Maximum OD (in./*mm*)	Minimum Compressed OD (in./*mm*)	Casing Size (in.)	Bow Type	Maximum OD (in./*mm*)	Minimum Compressed OD (in./*mm*)
4	STA0	6.185 *157.1*	4.965 *126.1*	10-3/4	STA0	13.012 *330.5*	11.791 *299.5*
	STA1	6.579 *167.1*	5.201 *132.1*		STA1	13.406 *340.5*	12.028 *305.5*
	STA2	7.130 *181.1*			STA2	13.957 *354.5*	
	STA3	8.902 *226.1*			STA3	15.728 *399.5*	
	STA4	10.398 *264.1*			STA4	17.224 *437.5*	
4-1/2	STA0	6.689 *169.9*	5.469 *138.9*	11-3/4	STA0	14.024 *356.2*	19.764 *502.0*
	STA1	7.083 *179.9*	5.705 *144.9*		STA1	14.417 *366.2*	20.000 *508.0*
	STA2	7.634 *193.9*			STA2	14.969 *380.2*	
	STA3	9.406 *238.9*			STA3	16.740 *425.2*	
	STA4	10.902 *276.9*			STA4	18.236 *463.2*	

Nonweld Bow-Spring Centralizer

Specifications *(continued)*

Casing Size (in.)	Bow Type	Maximum OD (in./*mm*)	Minimum Compressed OD (in./*mm*)	Casing Size (in.)	Bow Type	Maximum OD (in./*mm*)	Minimum Compressed OD (in./*mm*)
5	STA0	7.197 *182.8*	5.976 *151.8*	13-3/8	STA0	15.669 *398.0*	14.449 *367.0*
	STA1	7.591 *192.8*	6.213 *157.8*		STA1	16.063 *408.0*	14.685 *373.0*
	STA2	8.142 *206.8*			STA2	16.614 *422.0*	
	STA3	9.913 *251.8*			STA3	18.386 *467.0*	
	STA4	11.409 *289.8*			STA4	19.882 *505.0*	
5-1/2	STA0	7.701 *195.6*	6.480 *164.6*	16	STA0	18.327 *465.5*	17.106 *434.5*
	STA1	8.094 *205.6*	6.717 *170.6*		STA1	18.720 *475.5*	17.343 *440.5*
	STA2	8.646 *219.6*			STA2	19.272 *489.5*	
	STA3	10.417 *264.6*			STA3	21.043 *534.5*	
	STA4	11.913 *302.6*			STA4	22.539 *572.5*	
6-5/8	STA0	8.839 *224.5*	7.598 *193.0*	18-5/8	STA0	20.984 *533.0*	19.764 *502.0*
	STA1	9.232 *234.5*	7.854 *199.5*		STA1	21.378 *543.0*	20.000 *508.0*
	STA2	9.783 *248.5*			STA2	21.929 *557.0*	
	STA3	11.555 *293.5*			STA3	23.701 *602.0*	
	STA4	13.051 *331.5*			STA4	25.197 *640.0*	

Nonweld Bow-Spring Centralizer

Specifications *(continued)*

Casing Size (in.)	Bow Type	Maximum OD (in./*mm*)	Minimum Compressed OD (in./*mm*)	Casing Size (in.)	Bow Type	Maximum OD (in./*mm*)	Minimum Compressed OD (in./*mm*)
7	STA0	9.217 *234.1*	7.996 *203.1*	20	STA0	22.378 *568.4*	21.157 *537.4*
	STA1	9.610 *244.1*	8.232 *209.1*		STA1	22.772 578.4	21.394 *543.4*
	STA2	10.16 *258.1*			STA2	23.323 *592.4*	
	STA3	11.933 *303.1*			STA3	25.094 *637.4*	
	STA4	13.429 *341.1*			STA4	26.591 *675.4*	
7-5/8	STA0	9.846 *250.1*	8.626 *219.1*	24	STA0	26.425 *671.2*	25.205 *640.2*
	STA1	10.240 *260.1*	8.862 *225.1*		STA1	26.819 *681.2*	25.441 *646.2*
	STA2	10.791 *274.1*			STA2	27.370 *695.2*	
	STA3	12.563 *319.1*			STA3	29.142 *740.2*	
	STA4	14.059 *357.1*			STA4	30.638 *778.2*	
8-5/8	STA0	10.858 *275.8*	9.638 *244.8*	26	STA0	28.453 *722.7*	27.232 *691.7*
	STA1	11.252 *285.8*	9.874 *250.8*		STA1	28.846 *732.7*	27.469 *697.7*
	STA2	11.803 *299.8*			STA2	29.398 *746.7*	
	STA3	13.575 *344.8*			STA3	31.169 *791.7*	
	STA4	15.071 *382.8*			STA4	32.665 *829.7*	
9-5/8	STA0	11.866 *301.4*	10.646 *270.4*	30	STA0	32.500 *825.5*	31.280 *794.5*
	STA1	12.260 *311.4*	10.882 276.4		STA1	32.894 *835.5*	31.516 *800.5*
	STA2	12.811 *325.4*			STA2	33.445 *849.5*	
	STA3	14.583 *370.4*			STA3	35.217 *894.5*	
	STA4	16.079 *408.4*			STA4	36.713 *932.5*	

Note: Minimum compressed OD is the restriction in which the centralizer can be pushed or pulled through. The starting and running force of this restriction may be larger than API 10D recommendations.