



Detail

[APPLICATIONS]

- **Petroleum Production Wells**
- **Injection Wells**
- **Disposal Wells**
- **In-situ Solution Mining**
- **Chemical Disposal Wells**
- **Water Source Wells**
- **Monitor Wells**
- **Corroded Steel Casing Liners**

Centron® filament-wound fiberglass/epoxy casing is available in six basic sizes from 4¹/₂ through 10³/₄. Centron uses only the finest quality raw materials combined with modern manufacturing techniques to produce the highest quality composite tubulars available. Centron's quality system is certified to API Specification Q1 and ISO 9001, assuring customers of the highest quality products in the industry.

JOINING SYSTEM >
FEATURES

- Premium Coarse Threads (4 thd/in)—provides superior across the joint thread strength for reliability and fast make-up without crossthreading problems. API LTC 8RD threads also available on some sizes.
- O-ring—provides high pressure seal to keep thread lubricant in box and out of perforations

CEMENTING >

The special exterior surface of Centron casing provides for excellent cement bonding that satisfies the most stringent environmental requirements

ADVANTAGES >

- Excellent corrosion resistance
- Electrically non-conductive
- High temperature capability
- Use conventional packers
- Perforate with shaped charges
- Low installation costs
- Not bacteria nutrient — resistant to SRB's
- Low scale build-up
- Radio transparent
- Light weight



Q1, 15LR, 15HR
ISO 9001

Centron International Inc. offers a complete line of cementing components: metallic and all fiberglass centralizers and stop collars, float shoes, cementing plugs and wipers.

Physical Specifications

Nominal Size Inches (mm)	Series/ Rating	Nominal Outside Dia. Inches (mm)	Nominal Inside Dia. Inches (mm)	Minimum Drift	Nominal Wall Inches (mm)	Nominal ¹ Box O.D. Inches (mm)	Weight Lbs. / Ft. (Kg/M)
4¹/₂ (115)	DHC 150	4.28 (109)	3.98 (101.1)	3.965 (100.7)	.150 (3.81)	5.40 (137)	1.75 (2.61)
	DHC 200	4.38 (111)	3.98 (101.1)	3.965 (100.7)	.200 (5.08)	5.50 (140)	2.40 (3.58)
	DHC 250	4.48 (114)	3.98 (101.1)	3.965 (100.7)	.250 (6.35)	5.60 (142)	3.00 (4.47)
	DHC 300	4.58 (116)	3.98 (101.1)	3.965 (100.7)	.300 (7.62)	5.70 (145)	3.60 (5.37)
	DHC 350	4.68 (119)	3.98 (101.1)	3.965 (100.7)	.350 (8.89)	5.80 (147)	4.25 (6.34)
	DHC 400	4.78 (121)	3.98 (101.1)	3.965 (100.7)	.400 (10.2)	5.90 (150)	4.90 (7.13)
5 (125)	DHC150	4.63 (118)	4.33 (110.0)	4.310 (109.5)	.150 (3.81)	5.25 (133)	1.90 (3.27)
	DHC 175	4.68 (119)	4.33 (110.0)	4.310 (109.5)	.175 (4.45)	5.40 (137)	2.20 (3.28)
	DHC 200	4.73 (120)	4.33 (110.0)	4.310 (109.5)	.200 (5.08)	5.50 (140)	2.53 (3.77)
	DHC 250	4.83 (123)	4.33 (110.0)	4.310 (109.5)	.250 (6.35)	5.60 (142)	3.20 (4.77)
	DHC 280	4.89 (124)	4.33 (110.0)	4.310 (109.5)	.280 (7.11)	5.75 (146)	3.61 (5.38)
5¹/₂ (140)	DHC 150	5.15 (131)	4.85 (123.2)	4.835 (122.8)	.150 (3.81)	6.30 (160)	2.10 (3.13)
	DHC 175	5.20 (132)	4.85 (123.2)	4.835 (122.8)	.175 (4.45)	6.35 (161)	2.45 (3.65)
	DHC 200	5.25 (133)	4.85 (123.2)	4.835 (122.8)	.200 (5.08)	6.40 (163)	2.85 (4.25)
	DHC 250	5.35 (136)	4.85 (123.2)	4.835 (122.8)	.250 (6.35)	6.50 (165)	3.60 (5.35)
	DHC 300	5.45 (138)	4.85 (123.2)	4.835 (122.8)	.300 (7.62)	6.60 (167)	4.40 (6.55)
	DHC 350	5.55 (141)	4.85 (123.2)	4.835 (122.8)	.350 (8.89)	6.70 (170)	5.15 (7.66)
	DHC 400	5.65 (141)	4.85 (123.2)	4.835 (122.8)	.400 (10.2)	6.80 (173)	5.90 (8.78)
6⁵/₈* (170)	DHC 200	6.50 (165)	6.10 (154.9)	6.085 (154.6)	.200 (5.08)	8.10 (206)	3.52 (5.25)
	DHC 250	6.60 (168)	6.10 (154.9)	6.085 (154.6)	.250 (6.35)	8.20 (208)	4.50 (6.71)
	DHC 300	6.70 (170)	6.10 (154.9)	6.085 (154.6)	.300 (7.62)	8.35 (212)	5.40 (8.05)
	DHC 350	6.80 (173)	6.10 (154.9)	6.085 (154.6)	.350 (8.89)	8.50 (216)	6.50 (9.69)
	DHC 400	6.90 (175)	6.10 (154.9)	6.085 (154.6)	.400 (10.2)	8.65 (220)	7.35 (11.0)
	DHC 450	7.00 (178)	6.10 (154.9)	6.085 (154.6)	.450 (11.4)	8.80 (223)	8.40 (12.5)
	DHC 500	7.10 (180)	6.10 (154.9)	6.085 (154.6)	.500 (12.7)	8.95 (227)	9.30 (13.9)
	DHC 550	7.20 (183)	6.10 (154.9)	6.085 (154.6)	.550 (13.9)	9.10 (230)	10.20 (15.0)
7 (180)	DHC 200	6.80 (173)	6.40 (162.6)	6.380 (162.1)	.200 (5.08)	8.10 (206)	3.75 (5.59)
	DHC 250	6.90 (175)	6.40 (162.6)	6.380 (162.1)	.250 (6.35)	8.20 (208)	4.75 (7.08)
	DHC 300	7.00 (178)	6.40 (162.6)	6.380 (162.1)	.300 (7.62)	8.35 (212)	5.70 (8.50)
	DHC 350	7.10 (180)	6.40 (162.6)	6.380 (162.1)	.350 (8.89)	8.40 (213)	7.60 (9.99)
	DHC 400	7.20 (183)	6.40 (162.6)	6.380 (162.1)	.400 (10.2)	8.45 (214)	7.70 (11.5)
	DHC 450	7.30 (185)	6.40 (162.6)	6.380 (162.1)	.450 (11.4)	8.55 (217)	8.65 (12.9)
	DHC 500	7.40 (188)	6.40 (162.6)	6.380 (162.1)	.500 (12.7)	8.65 (220)	9.65 (14.4)
	DHC 550	7.50 (190)	6.40 (162.6)	6.380 (162.1)	.550 (13.9)	8.75 (223)	10.65 (15.6)
9⁵/₈** (250)	DHC 250	8.92 (227)	8.42 (213.9)	8.410 (213.6)	.250 (6.35)	10.10 (257)	6.10 (9.10)
	DHC 300	9.02 (229)	8.42 (213.9)	8.410 (213.6)	.300 (7.62)	10.25 (260)	7.45 (11.1)
	DHC 350	9.12 (232)	8.42 (213.9)	8.410 (213.6)	.350 (8.89)	10.40 (264)	8.70 (13.0)
	DHC 400	9.22 (234)	8.42 (213.9)	8.410 (213.6)	.400 (10.2)	10.55 (268)	9.95 (14.8)
	DHC 450	9.32 (237)	8.42 (213.9)	8.410 (213.6)	.450 (11.4)	10.70 (272)	11.25 (16.8)
	DHC 500	9.42 (239)	8.42 (213.9)	8.410 (213.6)	.500 (12.7)	10.90 (277)	12.60 (18.8)
10³/₄ (275)	DHC300	10.32 (262)	9.72 (246.9)	9.72 (246.9)	.300 (7.62)	12.20 (310)	7.80 (11.7)
	DHC 350	10.42 (264)	9.72 (246.9)	9.72 (246.9)	.350 (8.89)	12.30 (313)	9.50 (14.3)
	DHC 400	10.52 (266)	9.72 (246.9)	9.72 (246.9)	.400 (10.16)	12.50 (317)	11.0 (16.5)
	DHC 450	10.62 (270)	9.72 (246.9)	9.72 (246.9)	.450 (11.43)	12.70 (323)	12.5 (18.7)
	DHC 500	10.72 (272)	9.72 (246.9)	9.72 (246.9)	.500 (12.70)	12.90 (327)	14.0 (21.0)

1. Reduced OD boxes available on special order basis.

Centron casing joints are 29.5 (9.0 m) overall with a "make-up" length of 29.125 (8.87 m), except for size 5" which is 30' (9.14 m) overall length with a "make-up" length of 29.67' (9.04 m) and 9⁵/₈" which is 29.17' (8.89 m) overall length with a "make-up" length of 28.67' (8.74 m).

* 7 API LTC 8RD threads available.

** 9⁵/₈ API LTC 8RD threads available.

Casing

Performance Properties

RATED OPERATING VALUES					TYPICAL ULTIMATE VALUES				
Nominal Size Inches (mm)	Series/ Rating	External Collapse Pressure psi (MPa)	Internal Operating Pressure psi (MPa)	Rated Axial Load x 10 ³ Lbs. (N)	Ultimate Axial Thread Load	Internal Weep Pressure psi (MPa)	External Collapse Pressure psi (MPa)	Axial Wall Load x 10 ³ Lbs. (N)	
4 1/2 (115)	DHC 150	150 (1.03)	1000 (6.87)	9 (40.0)	90,000 lbs. (400,000 N)	2500 (17.1)	350 (2.40)	23 (102)	
	DHC 200	300 (2.07)	1250 (8.60)	12 (53.0)	90,000 lbs. (400,000 N)	3100 (21.4)	450 (5.16)	30 (133)	
	DHC 250	550 (3.78)	1500 (10.3)	15 (67.0)	90,000 lbs. (400,000 N)	3750 (25.9)	1350 (9.29)	39 (173)	
	DHC 300	900 (6.21)	1800 (12.3)	18 (80.0)	90,000 lbs. (400,000 N)	4300 (29.7)	2200 (15.1)	48 (214)	
	DHC 350	1350 (9.30)	2000 (13.8)	21 (93.0)	90,000 lbs. (400,000 N)	4500 (31.0)	3300 (22.6)	57 (254)	
	DHC 400	1850 (12.8)	2500 (17.1)	25 (111)	90,000 lbs. (400,000 N)	5000 (34.4)	4600 (31.7)	65 (289)	
5 (125)	DHC 150	110 (0.75)	900 (6.20)	9.5 (42.0)	50,000 lbs. (222,000 N)	2250 (15.5)	275 (1.88)	25 (111)	
	DHC 175	160 (1.10)	1000 (6.87)	11 (48.9)	50,000 lbs. (222,000 N)	2500 (17.1)	400 (2.73)	29 (129)	
	DHC 200	240 (1.62)	1200 (8.20)	13 (57.8)	50,000 lbs. (222,000 N)	3000 (20.6)	600 (4.10)	34 (151)	
	DHC 250	440 (3.30)	1400 (9.60)	16 (71.2)	50,000 lbs. (222,000 N)	3500 (24.1)	1100 (7.55)	43 (191)	
	DHC 280	600 (4.10)	1600 (11.0)	18 (80.1)	50,000 lbs. (222,000 N)	4000 (27.3)	1500 (10.3)	48 (214)	
	5 1/2 (140)	DHC 150	80 (0.55)	800 (5.51)	10 (44.5)	100,000 lbs. (444,000 N)	2000 (13.7)	200 (1.37)	28 (125)
DHC 175		120 (0.83)	900 (6.20)	13 (57.8)	100,000 lbs. (444,000 N)	2250 (15.5)	300 (2.05)	32 (142)	
DHC 200		180 (1.23)	1000 (6.87)	14 (62.3)	100,000 lbs. (444,000 N)	2500 (17.1)	440 (3.03)	38 (169)	
DHC 250		320 (2.20)	1250 (8.60)	18 (80.1)	100,000 lbs. (444,000 N)	3100 (21.4)	800 (5.51)	48 (214)	
DHC 300		520 (3.50)	1500 (10.3)	22 (97.9)	100,000 lbs. (444,000 N)	3750 (25.9)	1300 (8.95)	58 (258)	
DHC 350		800 (5.52)	1800 (12.3)	26 (116)	100,000 lbs. (444,000 N)	4300 (29.6)	2000 (13.8)	68 (302)	
DHC 400		1150 (7.93)	2000 (13.8)	30 (133)	100,000 lbs. (444,000 N)	4500 (31.0)	2800 (19.3)	78 (347)	
6 5/8* (170)		DHC 200	90 (0.62)	800 (5.51)	18 (80.1)	150,000 lbs. (667,000 N)	2000 (13.7)	225 (1.54)	47 (209)
	DHC 250	170 (1.17)	1000 (6.87)	22 (97.9)	150,000 lbs. (667,000 N)	2500 (17.1)	425 (2.93)	59 (262)	
	DHC 300	290 (2.00)	1250 (8.60)	27 (120)	150,000 lbs. (667,000 N)	3100 (21.4)	725 (5.00)	72 (320)	
	DHC 350	440 (3.03)	1500 (10.3)	32 (142)	150,000 lbs. (667,000 N)	3750 (25.9)	1100 (7.55)	85 (378)	
	DHC 400	620 (4.28)	1650 (11.3)	37 (165)	150,000 lbs. (667,000 N)	4125 (28.4)	1550 (10.6)	95 (423)	
	DHC 450	850 (5.86)	1800 (12.3)	42 (187)	150,000 lbs. (667,000 N)	4300 (29.6)	2100 (14.5)	111 (494)	
	DHC 500	1150 (7.93)	2000 (13.8)	48 (214)	150,000 lbs. (667,000 N)	4500 (31.0)	2800 (19.3)	120 (534)	
	7 (180)	DHC 200	80 (0.55)	800 (5.51)	19 (84.5)	150,000 lbs. (667,000 N)	2000 (13.7)	200 (1.37)	49 (218)
DHC 250		150 (1.05)	1000 (6.87)	24 (107)	150,000 lbs. (667,000 N)	2500 (17.1)	380 (2.62)	60 (267)	
DHC 300		250 (1.72)	1200 (8.20)	29 (129)	150,000 lbs. (667,000 N)	3000 (20.6)	625 (4.31)	74 (329)	
DHC 350		400 (2.75)	1400 (9.60)	34 (151)	150,000 lbs. (667,000 N)	3500 (24.1)	950 (6.55)	86 (383)	
DHC 400		550 (3.78)	1600 (11.0)	39 (173)	150,000 lbs. (667,000 N)	4000 (27.3)	1350 (9.31)	100 (445)	
DHC 450		750 (5.17)	1750 (12.1)	44 (196)	150,000 lbs. (667,000 N)	4250 (29.3)	1850 (12.8)	115 (512)	
DHC 500		1000 (6.87)	2000 (13.8)	50 (222)	150,000 lbs. (667,000 N)	4500 (31.0)	2400 (16.6)	128 (569)	
9 5/8** (250)		DHC 250	70 (0.48)	750 (5.17)	30 (133)	250,000 lbs. (1,110,000 N)	1875 (12.9)	175 (1.21)	78 (347)
	DHC 300	120 (0.83)	900 (6.20)	37 (165)	250,000 lbs. (1,110,000 N)	2250 (15.5)	300 (2.05)	95 (423)	
	DHC 350	180 (1.23)	1000 (6.87)	44 (196)	250,000 lbs. (1,110,000 N)	2500 (17.1)	450 (3.10)	114 (507)	
	DHC 400	260 (1.79)	1200 (8.20)	50 (222)	250,000 lbs. (1,110,000 N)	3000 (20.6)	650 (4.48)	130 (578)	
	DHC 450	360 (2.48)	1400 (9.60)	57 (254)	250,000 lbs. (1,110,000 N)	3500 (24.1)	900 (6.20)	148 (658)	
	DHC 500	480 (3.31)	1500 (10.3)	64 (285)	250,000 lbs. (1,110,000 N)	3750 (25.9)	1200 (8.20)	165 (734)	
	10 3/4 (275)	DHC 300	65 (0.45)	750 (5.17)	35 (156)	290,000 lbs. (1,300,000 N)	1875 (12.9)	160 (1.10)	87 (388)
DHC 350		100 (0.69)	900 (6.20)	41 (183)	290,000 lbs. (1,300,000 N)	2250 (15.5)	250 (1.70)	102 (457)	
DHC 400		150 (1.03)	1000 (6.89)	48 (214)	290,000 lbs. (1,300,000 N)	2500 (17.2)	380 (2.60)	120 (535)	
DHC 450		210 (1.44)	1150 (7.93)	55 (245)	290,000 lbs. (1,300,000 N)	2875 (19.8)	530 (3.60)	137 (611)	
DHC 500		280 (1.93)	1250 (8.62)	61 (272)	290,000 lbs. (1,300,000 N)	3100 (21.4)	720 (4.90)	152 (678)	

Note: Casing design may be altered to meet specific application requirements.

Chemical compatibility must be determined before use.

Mill Test Pressure:	Operating Pressure x 1.25
Axial Modulus of Elasticity:	1.85 x 10 ⁶ PSI (1.27 x 10 ⁴ MPa)
Hoop Modulus of Elasticity:	3.00 x 10 ⁶ PSI (2.05 x 10 ⁴ MPa)
Density:	0.07 lbs/in ³ (Sp. Gr. = 1.95)
Coefficient of Thermal Expansion:	1.0 x 10 ⁻⁵ in/in/°F (1.8 x 10 ⁻⁵ m/m/°C)
Hazen-Williams Flow Factor:	150
Poissons Ratio (Hoop Tensile):	.60
Poissons Ratio (Axial Tensile):	.45

GENERAL FEATURES

Design Flexibility—Each size is available in several pressure ratings which allows for cost effective well design. Lightweight Centron® fiberglass casing weighs about 1/4 that of equivalent steel casing. Smaller rigs and tools can be used.

Electromagnetic Transparency—Centron fiberglass casing is being used in steam flood monitor wells at temperatures up to 325 °F. The non-metallic casing allows for telemetry instruments to monitor temperature changes and flow in this demanding service.

Corrosion Resistance—Centron fiberglass casing is resistant to a wide variety of hostile oil field fluids which results in minimum well maintenance and environmental concerns.

GENERAL CONSIDERATIONS FOR USE

WELL BORE CONDITIONS

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Temperature—Centron manufactures casing made of three epoxy resin systems with different upper temperature limitations:

System	Maximum Temperature °F (°C)
HP Anhydride	180 (82)
Aromatic Amine	210 (99)
HT Aromatic Amine	300 (149)

Fluid Characteristics—The type of resin system selected is also dependent on the fluid chemical make-up. In general, the "HP" anhydride is resistant to fluids with a pH of 2 to 9, brine, methane, H₂S, and other common fluids within the temperature limitations. The aromatic amine systems are more resistant to higher pHs (to 12) and large amounts of CO₂ within the temperature limitations.

Downhole Tools—Common packers, anchors, etc. can be used with Centron casing. Care must be taken to insure the amount of force applied by the slips to the casing wall does not damage the composite. The smooth inside surface of Centron fiberglass casing assures a good sealing surface and high sealing pressure is not required.

Centron casing is ideal for slip (Cup) type packers such as those used in selective injection enhanced recovery schemes.