



RODEC™

Covered by One or More of the Following Patents

	US	CANADA
1000	8,383,518	5,465,788
1001	5,427,178	5,875,841
1002	5,746,249	6,199,830
1003	6,526,898	6,272,434

MADE IN CANADA

RODEC

Tubing Rotators

We have been providing effective tubing wear solutions for over 70 years. Whether using rod pumping units or progressing cavity downhole pumps, we offer the most complete package of wear prevention solutions including tubing rotators. Our Rodec™ tubing rotators and swivels, offers a wide range of products designed to effectively distribute wear evenly around the entire internal circumference of the production tubing. The application of these products can dramatically increase tubing life span and reduce operating costs proportionately.

Tubing Rotators

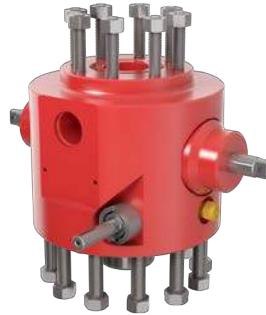
RODEC "C" Low Profile Rotator / RODEC "C" Integral Rotator (3 in 1)

Field proven with years of effective service performance, the RODEC "C" models significantly decrease production costs per barrel. The RODEC "C" Tubing Rotators' patented technology radically slows tubing wear resulting in savings of service rig costs and downtime. The compact design allows for easy installation on any existing well or new completion.

- Uses separate rotating hanger that sits in the customer tubing head. Hanger and rotator are coupled through a spline connection.
- Split rotating hanger option (J-slot) for setting tubing in tension is available.
- Rotating elements and mechanism are isolated from the well bore, annular fluid and gases preventing from corrosion damage.
- Overall height for the RODEC "C" Low Profile is five inches while the RODEC "C" Integral is about twelve inches.



RODEC "C" Low Profile Rotator



RODEC "C" Integral Rotator

RODEC "C" Low Profile Rotator



Tubing String Hung from Rotating Hanger Landed on Customer Wellhead



Tubing String Hung from Split Rotating Hanger Landed on Customer Wellhead

RODEC "C" Integral Rotator



Tubing String Hung from Rotating Hanger Landed on Customer Wellhead



Tubing String Hung from Split Rotating Hanger Landed on Customer Wellhead

Tubing Rotators

RODEC RII Tubing Rotator

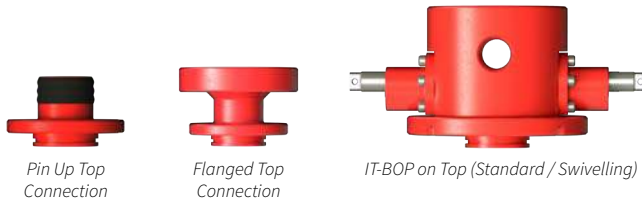
Featuring a modular design, the RODEC RII Tubing Rotator is the most versatile unit in the market being capable of adapting to flanged and threaded cap wellheads. The main body or spool is the same for all configurations having a wide variety of top and bottom connectors.

Depending on the customer needs the following tubing hanger options are available:

- Tubing string hung directly from the tubing rotator inner mandrel (separate hanger not required)
 - Tubing string hung from a double box bushing that connects to the tubing rotator (separate hanger not required). This option allows for landing an anchor catcher and setting the tubing string in tension
 - Tubing string hung from a rotating hanger landed in the tubing head body
 - Tubing string hung from a split rotating hanger landed in the tubing head body; this option incorporates a J-slot connection enabling for landing an anchor catcher and setting the tubing string in tension
- Low profile design
 - Compatible with a wide range of wellhead configurations either threaded cap style or flanged
 - Top end connections can be either API male threads or stud-thru flanges
 - Top end connections can be either API male threads, stud-thru flanges or ITBOP



Top Connection

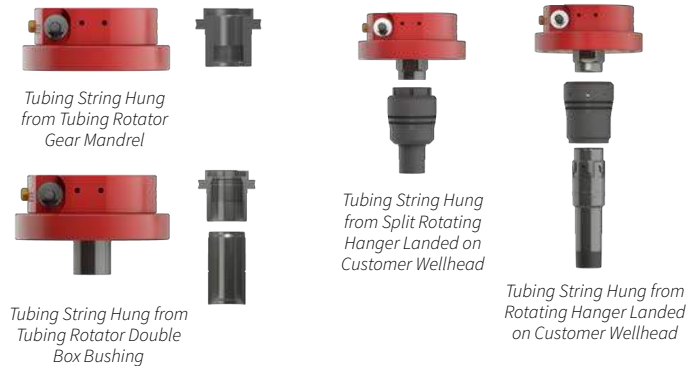


Body + Wellhead Connection

Threaded Cap Wellhead Connection



Flanged Wellhead Connection



Tubing Rotators

RODEC High Temperature Tubing Rotator

Capable of operating in temperatures to 650°F (343°C) and pressures to 3,000 psi, the RODEC High Temperature Tubing Rotator can be installed on any wellhead configuration that complies with API specifications. In addition, it can rotate any size of production tubing with an API thread connection.

The RODEC High Temperature Tubing Rotator has a patented, self-energized sealing mechanism that does not require service or adjustment.

- Low profile design
- Does not require a separate tubing hanger



RODEC Ultimate Tubing Rotator

By only adding 9 – 10½" of height to the wellhead, the RODEC Ultimate Tubing Rotator is one of the most compact rotators in the market. As a fixed component of the wellhead, it remains in place during well servicing having the BOP installed on top. The unit acts as a tubing head, complete with lockdown screws. It is studded down to fit any existing API tubing head and flanged up to rigidly support other components. The tubing hanger is landed in the tubing rotator spool and replaces the need for a conventional tubing hanger.

- Retrofits any well with an existing tubing head
- Compatible with rotating and reciprocating applications
- Minimum maintenance and field repairable



RODEC Dual String Hanger and Tubing Rotator

Including a side entry access for chemical injection or coiled tubing jobs, the RODEC Dual String Hanger and Tubing Rotator is a powerful solution for complex applications. Two tubing strings can be independently hung from the custom built spool furnished with lockdown screws, but only the production tubing is rotated.

- Separate connections for hanging each tubing string.
- Secondary hold down mechanism included for the production tubing hanger.
- ITBOP included.



Tubing Rotators

Tubing Rotators Specifications

		RII	C Low Profile	C Integral	Ultimate	Dual String Hanger	High Temperature
Wellhead Connection	Flange	7- ¹ / ₁₆ " 9" 11"	7- ¹ / ₁₆ " 9"	7- ¹ / ₁₆ " 9"	7- ¹ / ₁₆ " 9" 11"	11"	7- ¹ / ₁₆ " 11"
	"Threaded Cap"	7- ⁵ / ₈ " 8- ⁵ / ₈ "	-----	-----	-----	-----	-----
Pressure Rating		2000 psi 3000 psi	2000 psi 3000 psi	2000 psi	2000 psi 3000 psi	2000 psi	3000 psi
Top Connection	Flange	2- ⁹ / ₁₆ " 3- ¹ / ₈ " 7- ¹ / ₁₆ "	7- ¹ / ₁₆ " 9"	-----	7- ¹ / ₁₆ " 9" 11"	-----	-----
	Thread	2- ⁷ / ₈ " EUE 3- ¹ / ₂ " EUE 4- ¹ / ₂ " LP	-----	-----	-----	-----	2- ⁷ / ₈ " EUE 3- ¹ / ₂ " EUE 4- ¹ / ₂ " NUE 5- ¹ / ₂ " CSG
	ITBOP	3- ¹ / ₈ "	-----	3- ¹ / ₈ "	-----	3- ¹ / ₈ "	-----
ITBOP (Integral Flow-T/BOP)	Polished Rod	1- ¹ / ₄ " 1- ¹ / ₂ "	-----	1- ¹ / ₄ "	-----	1- ¹ / ₄ " 1- ¹ / ₂ "	-----
	Pipeline Outlets	2" LP 3" LP"	-----	2" LP 3" LP	-----	2" LP 3" LP	-----
	Pressure Rating	3000 psi	-----	2000 psi	-----	3000 psi	-----
Tubing Sizes		2-3/8" EUE 2-7/8" EUE 3-1/2" EUE 4-1/2" NUE	2-7/8" EUE 3-1/2" EUE		2-3/8" EUE 2-7/8" EUE 3-1/2" EUE 4-1/2" EUE 5-1/2" CSG	2-3/8" EUE 3-1/2" EUE	2-7/8" EUE 3-1/2" EUE 4-1/2" NUE 5-1/2" CSG
Torque Rating		2400 lbf.ft	2200 lbf.ft		1800 lbf.ft (7- ¹ / ₁₆ "") 2250 lbf.ft (9") 1200 lbf.ft (11")	2200 lbf.ft	2400 lbf.ft
Temperature Rating	Standard Seals*	320°F (160°C)	320°F (160°C)		320°F (160°C)	320°F (160°C)	-----
	High Temp. Seals	-----	450°F (232°C)		-----	-----	650°F (343°C)
Thrust Bearing Load Rating (Rotator or Hanger as applicable)**		60000 lbf (Standard) 128750 lbf (Heavy Duty) 162000 lbf (Custom)			60000 lbf (Std) 128750 lbf (HD)	60000 lbf	132840 lbf (7- ¹ / ₁₆ "") 204370 lbf (11")
Drive System		Manual BPU				-----	BPU
	Electric Motor	12 volt 110 volt 240/460 volt					

* Standard seals are Highly Saturated Nitrile (HSN).

RODEC Slimline Tubing Swivel

Engineered to meet demanding applications requiring a tubing swivel, the RODEC Downhole Tubing Swivel allows for installing and removing mechanically set tools. Working in conjunction with a RODEC Tubing Rotator, it enables the tubing string to be rotated during production while keeping the downhole pump anchored.

Features & Benefits

- Mechanical clockwise rotation setting/counter-clockwise rotation unsetting.
- Reduced outside diameter.
- Redundant seals to protect against wellbore fluids.
- Extended length on the pin thread for applying power tongs.



RODEC Anchor Catcher Swivel

The RODEC Anchor Catcher Swivel has been engineered to be used in conjunction with a right hand set anchor catcher in applications where the production tubing is installed in tension. The AC Swivel allows for mechanically setting the anchor in clockwise direction upon installation; the tubing can then be pulled into tension and rotated during production.

Features & Benefits

- Mechanical clockwise rotation setting/counter-clockwise rotation unsetting.
- Redundant seals to protect against wellbore fluids.

Downhole Tubing Swivels Specifications

		Slimline			Anchor Catcher	
Connections		2-3/8" EUE	2-7/8" EUE	3-1/2" EUE	2-7/8" EUE	3-1/2" EUE
Pressure Rating		6000 psi	6000 psi	6000 psi	6000 psi	6000 psi
Dimensions	Max. OD	3.84" (97.54 mm)	3.84" (97.54 mm)	4.50" (114.30 mm)	4.63" (117.48 mm)	5.13" (130.18 mm)
	Drift	2.38" (60.33 mm)	2.38" (60.33 mm)	2.90" (73.66 mm)	2.50" (63.50 mm)	3.00" (76.20 mm)
	Overall Length	23.3" (593 mm)	27.8" (706 mm)	29.1" (738 mm)	20.9" (530 mm)	20.9" (530 mm)
Shear Torque (Shear Pins)**		576 lbf.ft	576 lbf.ft	684 lbf.ft	600 lbf.ft	700 lbf.ft
Continuous Torque Rating		2000 lbf.ft	2000 lbf.ft	2000 lbf.ft	2000 lbf.ft	2000 lbf.ft
Thrust Bearing Load Rating		55285 lbf	55285 lbf	67800 lbf	66300 lbf	77400 lbf
Temperature Rating	Standard Seals*	320°F (160°C)	320°F (160°C)	320°F (160°C)	320°F (160°C)	320°F (160°C)

* Standard seals are Highly Saturated Nitrile (HSN).

**For higher shear torque requirements please consult your sales representative.