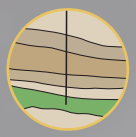
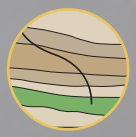
D-TECH
ROTARY STEERABLE
AN SBO COMPANY

D-Tech Gen7 Rotary Steerable Tool

Ruggedized Solution Delivers Reduced Downtime and Optimal Value


High-Angle Tangents


Vertical


Curve


Lateral Drilling


Harsh Drilling Environments

BENEFITS

- Reduces risk and costs since the streamlined, robust design has minimal moving parts, experiences less damage, and keeps you in the hole longer
- Increases flexibility with a universal plug-and-play system that is compatible with virtually any bit, motor, MWD/LWD sensor, fluid system, etc.
- Decreases nonproductive time (NPT) and risk of setup errors since it requires no programming at surface
- Provides longer life in harsh, abrasive formations

FEATURES

- Full 3D directional control with build, drop, and turn capabilities
- Real-time integration capabilities provide enhanced data and improved decision-making
- Rugged design decreases maintenance costs and turnaround times
- Solids-control system increases tool longevity in high-LCM applications
- Closed-loop control and power system allow for operations at high hours without risk of power loss
- Data capture allows for post-run analysis and program optimization to maximize future performance
- Onsite D-Tech technician, 24/7 remote support, and post-well analysis available

D-Tech's low-risk, high-return Generation 7 RST was engineered to meet/overcome drilling challenges, with an emphasis on reliably reaching total depth quickly, accurately, and with minimal financial risk. At an average of 12 to 13 ft in length, the robust solution is one of the shortest, most streamlined systems on the market, reducing the risk of getting hung up while moving through extreme doglegs.

The fully rotating, push-the-bit system delivers consistent, predictable build rates to drill a high-quality wellbore that can improve production over the long term. Because it was designed to eliminate as many failure points as possible, the self-contained system includes only 10 moving parts and requires no connections—even to MWD/LWD sensors—making it truly plug-and-play in virtually any BHA.

To further reduce NPT, all programming is completed before it arrives onsite, minimizing the chance of incorrect data entry. Since the system does not have a data port, the potential for fluid invasion through the port is eliminated.

The robust tool can withstand high-shock events and operate in harsh drilling applications, decreasing the risk of damage seen with other rotary steerables. The potential for stuck pipe or excessive reaming has also been reduced since everything rotates.

The RST facilitates pinpoint accuracy with a six-axis, near-bit directional package. This continuously records inclination and azimuth and can be transmitted in real time via the MWD to surface, which is used to maintain control on target and allows the operator to drill to and remain in the sweet spot longer.

The D-Tech RST has been run reliably in every shale play in North America as well as in many international markets. It has consistently delivered value by reducing risk, drilling time, and cost-per-foot while providing high directional accuracy and overall reliability to total depth.

To learn how we can help you improve performance and reliability on your next drilling campaign, contact your local D-Tech representative.

D-Tech RST Specifications

	RST475	RST500	RST650	HDT650 [9]	RST675	HDT675 [9]	RST800	RST900	RST900 PLUS	RST1100
Hole size, in. (mm)	5⅞ to 6½ (149.23 to 165.10)	6¾ (171.45)	7⅞ (200.03)	7⅞ (200.03)	8½ to 8¾ (215.90 to 222.25)	8½ to 8¾ (215.90 to 222.25)	9⅞ to 10⅝ (250.83 to 269.88)	12¼ to 12½ (311.15 to 317.50)	13½ (342.90)	16 to 18¼ (406.40 to 463.55)
Tool length, ft (m)	11.50 (3.50) w/o stabilizer	11.50 (3.50) w/o stabilizer	15.64 (4.77) w/ stabilizer	14.73 (4.49) w/ stabilizer	13.00 (3.96) w/ stabilizer	13.09 (3.99) w/ stabilizer	14.91 (4.54) w/o stabilizer	12.87 (3.92) w/o stabilizer	12.87 (3.92) w/o stabilizer	15.55 (4.74) w/o stabilizer
Nominal OD, in. (mm)	4.75 (120.65)	5.00 (127.00)	6.50 (165.10)	6.50 (165.10)	6.75 (171.45)	6.75 (171.45)	8.00 (203.20)	9.00 (228.60)	9.00 (228.60)	9.00 (228.60)
Max overpull, lbf (N)	400,000 (1,779,288)	400,000 (1,779,288)	1,100,000 (4,893,042)	1,100,000 (4,893,042)	1,200,000 (5,337,864)	1,200,000 (5,337,864)	1,400,000 (6,227,508)	1,500,000 (6,672,330)	1,500,000 (6,672,330)	1,500,000 (6,672,330)
Max torque-at-bit, ft-lbf (N·m)	8,000 (10,846)	8,500 (11,525)	16,000 (21,693)	18,000 (24,405)	16,000 (21,693)	20,000 (27,116)	55,000 (74,570)	65,000 (88,128)	65,000 (88,128)	65,000 (88,128)
Max weight-on-bit, lbf (N)	Drill bit limited	Drill bit limited	Drill bit limited	Drill bit limited	Drill bit limited	Drill bit limited	Drill bit limited	Drill bit limited	Drill bit limited	Drill bit limited
Bit connection, in.	3½ Reg	3½ Reg	4½ Reg	4½ Reg	4½ Reg	4½ Reg	6⅝ Reg	6⅝ Reg	6⅝ Reg	7⅝ Reg
Max DLS passthrough - nonrotating (rotating), °/100 ft (°/30 m) [1]	25 (15)	25 (15)	16 (10)	20 (14)	16 (10)	20 (14)	10 (7)	10 (7)	10 (7)	10 (7)
Flow range, gal/min (L/min) [2]	170 to 400 (643 to 1,514)	170 to 400 (643 to 1,514)	300 to 670 (1,135 to 2,540)	300 to 670 (1,135 to 2,540)	300 to 670 (1,135 to 2,540)	300 to 670 (1,135 to 2,540)	410 to 1,200 (1,552 to 4,550)	410 to 1,200 (1,552 to 4,550)	410 to 1,200 (1,552 to 4,550)	410 to 1,200 (1,552 to 4,550)
Max mud density, lbm/gal US (kg/L)	20 (2.39)	20 (2.39)	20 (2.39)	20 (2.39)	20 (2.39)	20 (2.39)	20 (2.39)	20 (2.39)	20 (2.39)	20 (2.39)
Chlorides, ppm [3]	Material dependent	Material dependent	Material dependent	Material dependent	Material dependent	Material dependent	Material dependent	Material dependent	Material dependent	Material dependent
Max LCM concentration, lbm/bbl (kg/L) [4]	30 (0.09)	30 (0.09)	50 (0.14)	50 (0.14)	50 (0.14)	50 (0.14)	50 (0.14)	50 (0.14)	50 (0.14)	50 (0.14)
pH [5]	9 to 12	9 to 12	9 to 12	9 to 12	9 to 12	9 to 12	9 to 12	9 to 12	9 to 12	9 to 12
Max sand content, %	1	1	1	1	1	1	1	1	1	1
Max pressure, psi (MPa)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)	20,000 (137.95)
Max temperature, °F (°C)	302 (150)	302 (150)	302 (150)	302 (150)	302 (150)	302 (150)	302 (150)	302 (150)	302 (150)	302 (150)
Max rotational speed rev/min [6]	330	330	330	400	330	400	330	330	330	330
Max DLS capability, °/100 ft (°/30 m) [7]	8	8	8	12	8	12	5	5	5	3
Bit box to inclination sensor, ft (m)	7.23 (2.20)	7.39 (2.25)	7.88 (2.40)	7.97 (2.43)	7.96 (2.43)	7.97 (2.43)	8.14 (2.48)	9.05 (2.76)	8.78 (2.68)	8.67 (2.64)
Bit box to azimuth sensor, ft (m)	6.79 (2.07)	6.95 (2.12)	7.44 (2.27)	7.53 (2.29)	7.52 (2.29)	7.53 (2.29)	7.70 (2.35)	8.61 (2.62)	8.34 (2.54)	8.23 (2.51)
Up-hole/top connection, in. [8]	3½ IF (NC38) or XT39	3½ IF (NC38) or XT39	4½ IF (NC50)	4½ IF (NC50)	4½ IF (NC50)	4½ IF (NC50)	6⅝ Reg	6⅝ Reg	6⅝ Reg	7⅝ Reg

[1] Contact your D-Tech rep if your DLS exceeds what is provided.
[2] Dependent on mud density.
[3] >50,000 ppm requires RST to be surface-flushed/externally cleaned with freshwater post-run. High-chloride resistant material options available on request, contact D-Tech.
[4] Subject to type of lost circulation material (LCM), medium-sized LCM. For specific materials, contact D-Tech.
[5] For silicate fluid systems, contact D-Tech.
[6] Max rotational speed for toolface control and internal flow.
[7] Dependent on application, formation, bit design, run parameters, etc.
[8] Alternative top connections available on request.
[9] HDT BHA configuration dependent on application requirements.

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