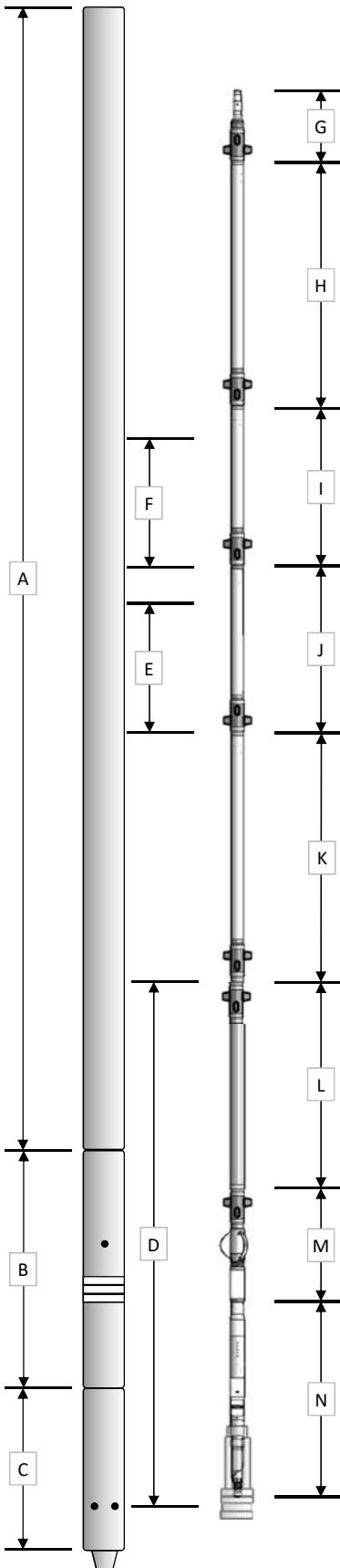


xBolt G2 - R Fishing Diagram and Specifications

Dual Telemetry



| Description | Length | OD | ID | Connection | | Connection Torque |
|---------------------|--------|--------|----------------------|----------------|----------------|-----------------------------------|
| | | | | UH | DH | |
| 4.75" Collar | | | | | | |
| (A) Rental Collar | > 30' | 4.75" | 2.68" | NC 38 (3.5 IF) | NC 38 (3.5 IF) | See ITC # 3837799 |
| (B) Gap Sub | 3.68' | 4.75" | | | | 9,400 ft.lbs |
| (C) Mule Shoe Sub | 3.25' | 4.75" | | | | 9,000 ft.lbs |
| 6.5" Collar | | | | | | |
| (A) Rental Collar | > 30' | > 6.5" | 2.813" / 3.25" | NC 50 (4.5 IF) | NC 50 (4.5 IF) | See ITC # 3837799 |
| (B) Gap Sub | 3.68' | 6.5" | | | | 26,000 ft.lbs |
| (C) Mule Shoe Sub | 3.25' | 6.75" | | | | 28,000 ft.lbs |
| 8" Collar | | | | | | |
| (A) Rental Collar | > 30' | > 8.0" | 3.25" / 3.5" / 3.75" | 6 5/8 Reg | 6 5/8 Reg | See ITC # 3837799 |
| (B) Gap Sub | 3.68' | 8.0" | | | | 39,000 ft.lbs |
| (C) Mule Shoe Sub | 3.25' | 8.0" | | | | 40,000 ft.lbs |

| Specification | 4.75" | 6.5" | 8" |
|--|--|---|--|
| Max Dogleg Rotating - Slick | 15°/100' | 13°/100' | 8°/100' |
| Max Dogleg Rotating - Flex | 25°/100' Ø4.00" Flex Section Min. 2/3 Total Length (20' of 31') Collars Above and Below Gap Sub | 18°/100' Ø5.625" Flex Section Min. 2/3 Total Length (20' of 31') Collars Above and Below Gap Sub | 13°/100' Ø6.00" Flex Section Min. 2/5 Total Length (12.4' of 31') Collars Above and Below Gap Sub |
| Max Compression | 100,000 lbs | 200,000 lbs | 300,000 lbs |
| Max Tension @ 302°F | 500,000 lbs | 1,000,000 lbs | 1,200,000 lbs |
| Max Torque @ Bit | 9,000 ft.lbs | 26,000 ft.lbs | 39,000 ft.lbs |
| Max Temp | 302 °F | 302 °F | 302 °F |
| Max Pressure | 15000 psi* | | |
| Max Flow Rate | 375 gpm | 500 gpm (2.813" ID) 750 gpm (3.25" ID) | 750 gpm (3.25" ID) 900 gpm (3.5" ID) 1000 gpm (3.75" ID) |
| Pressure Drop Coef <i>PSI = (PPG * GPM^2)/C</i> | C = 2988 | C = 6723 / C=21248 | C = 21248 / C = 40172 |

| Probe | Length | OD | Weight |
|-----------------------|--------|-------|--------|
| (N) Pulsar | 4.23' | 2" | 23 lbs |
| (M) Gap Assembly | 2.43' | 2" | 18 lbs |
| (L) XDT | 5.51' | 2" | 32 lbs |
| (K / H) Battery | 6.33' | 1.75" | 30 lbs |
| (J) Gamma | 4.52' | 1.75" | 24 lbs |
| (I) D&I Sensor Module | 4.67' | 1.75" | 26 lbs |
| (G) Fishing Head | 2.18' | 1.75" | 10 lbs |

| Sensor Measurement | Length | Comment |
|--------------------------|--------|--|
| (D) Fixed lower assembly | 12.23' | Upper seal face of XDT to lower UBHO set screw |
| (E) Gamma sensor | 2.83' | Sensor package to probe box seal face |
| (F) D&I sensor | 2.20' | |

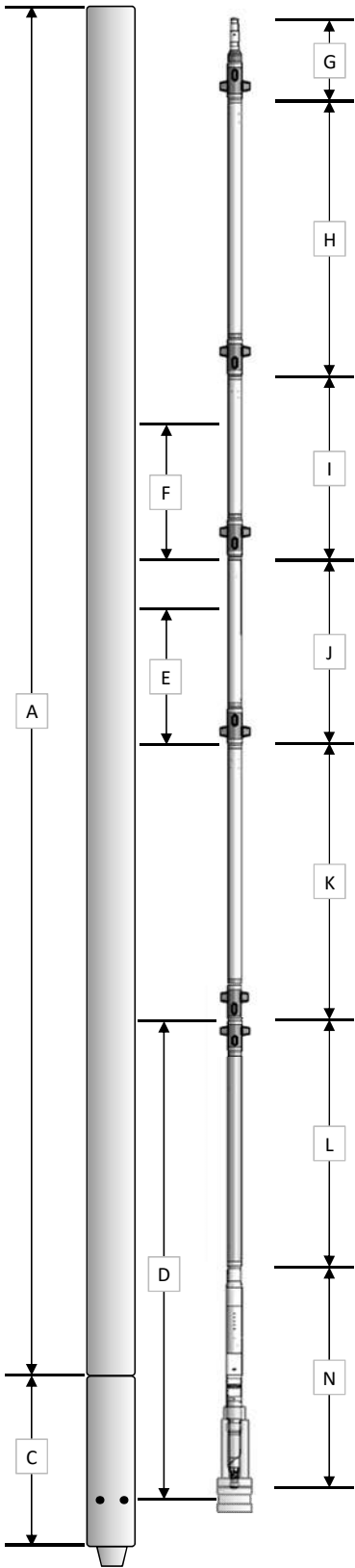
Toolstring Order

- The XDT, Gap Assembly and Pulsar probes must be assembled together at the base of the tool string
- Probes above the XDT may be assembled in any order - three batteries maximum
- Use xBolt G2 Tool Length Calculator to determine sensor offsets ([See ITC # 7288212](#))

* XDAG and Upgraded Batteries are rated to 20,000 psi.

xBolt G2 - R Fishing Diagram and Specifications

Mud Pulse Telemetry



| Description | Length | OD | ID | Connection | | Connection Torque |
|---------------------|--------|--------|----------------------|----------------|----------------|-----------------------------------|
| | | | | UH | DH | |
| 4.75" Collar | | | | | | |
| (A) Rental Collar | > 30' | 4.75" | 2.68" | NC 38 (3.5 IF) | NC 38 (3.5 IF) | See ITC # 3837799 |
| (C) Mule Shoe Sub | 3.25' | 4.75" | | | | 9,000 ft.lbs |
| 6.5" Collar | | | | | | |
| (A) Rental Collar | > 30' | > 6.5" | 2.813" / 3.25" | NC 50 (4.5 IF) | NC 50 (4.5 IF) | See ITC # 3837799 |
| (C) Mule Shoe Sub | 3.25' | 6.75" | | | | 28,000 ft.lbs |
| 8" Collar | | | | | | |
| (A) Rental Collar | > 30' | > 8.0" | 3.25" / 3.5" / 3.75" | 6 5/8 Reg | 6 5/8 Reg | See ITC # 3837799 |
| (C) Mule Shoe Sub | 3.25' | 8.0" | | | | 40,000 ft.lbs |

| Specification | 4.75" | 6.5" | 8" |
|--|---------------------------------|---|--|
| Max Dogleg Rotating - Slick | 15°/100' | 13°/100' | 8°/100' |
| Max Dogleg Rotating - Flex | 25°/100' Ø4.00" Flex Section | 18°/100' Ø5.625" Flex Section | 13°/100' Ø6.00" Flex Section |
| Max Tension @ 302°F | 500,000 lbs | 1,000,000 lbs | 1,200,000 lbs |
| Max Torque @ Bit | 9,000 ft.lbs | 28,000 ft.lbs | 40,000 ft.lbs |
| Max Temp | 302 °F* | 302 °F* | 302 °F* |
| Max Pressure | 15000 psi** | | |
| Max Flow Rate | 370 gpm | 500 gpm (2.813" ID) 750 gpm (3.25" ID) | 750 gpm (3.25" ID) 900 gpm (3.5" ID) 1000 gpm (3.75" ID) |
| Pressure Drop Coef <i>PSI = (PPG * GPM^2)/C</i> | C = 2988 | C = 6723 / C=21248 | C = 21248 / C = 40172 |

| Probe | Length | OD | Weight |
|-----------------------|--------|-------|--------|
| (N) Pulsar | 4.23' | 2" | 23 lbs |
| (L) XDT | 5.51' | 2" | 32 lbs |
| (K / H) Battery | 6.33' | 1.75" | 30 lbs |
| (J) Gamma | 4.52' | 1.75" | 24 lbs |
| (I) D&I Sensor Module | 4.67' | 1.75" | 26 lbs |
| (G) Fishing Head | 2.18' | 1.75" | 10 lbs |

| Sensor Measurement | Length | Comment |
|--------------------------|--------|--|
| (D) Fixed lower assembly | 9.81' | Upper seal face of XDT to lower UBHO set screw |
| (E) Gamma sensor | 2.83' | Sensor package to probe box seal face |
| (F) D&I sensor | 2.20' | |

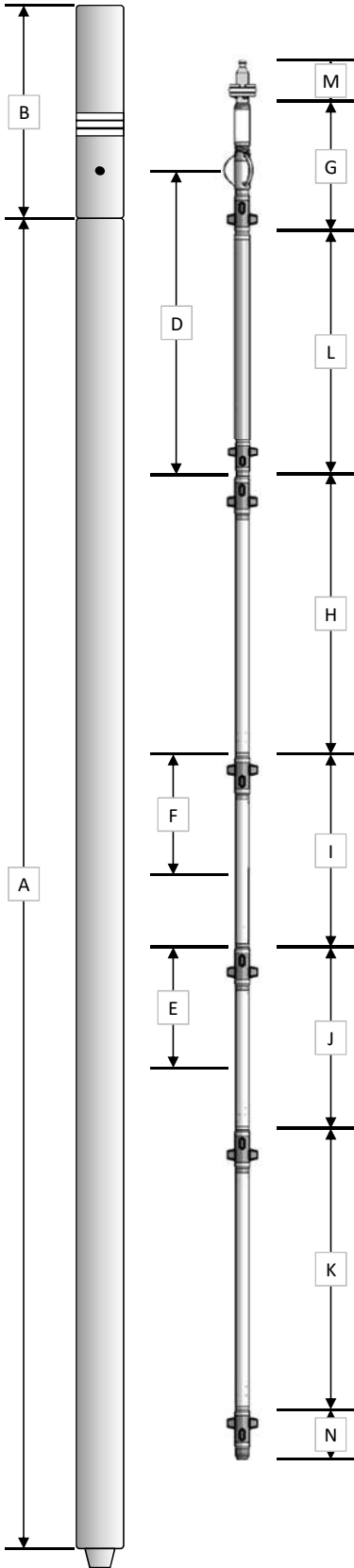
Toolstring Order

- The XDT, Gap Assembly and Pulsar probes must be assembled together at the base of the tool string
- Probes above the XDT may be assembled in any order - three batteries maximum
- Use xBolt G2 Tool Length Calculator to determine sensor offsets ([See ITC # 7288212](#))

* XDAG and XBTs are rated to 329°F
 ** XDAG and XBTs are rated to 20,000 psi.

xBolt G2 - EM Fishing Diagram and Specifications

EM Telemetry



| Description | Length | OD | ID | Connection | | Connection Torque |
|---------------------|--------|--------|----------------------|----------------|----------------|------------------------------------|
| | | | | UH | DH | |
| 4.75" Collar | | | | | | |
| (A) Rental Collar | > 30' | 4.75" | 2.68" | NC 38 (3.5 IF) | NC 38 (3.5 IF) | See ITC # 3837799 9,400 ft.lbs |
| (B) Gap Sub | 3.68' | 4.75" | | | | |
| 6.5" Collar | | | | | | |
| (A) Rental Collar | > 30' | > 6.5" | 2.813" / 3.25" | NC 50 (4.5 IF) | NC 50 (4.5 IF) | See ITC # 3837799 26,000 ft.lbs |
| (B) Gap Sub | 3.68' | 6.5" | | | | |
| 8" Collar | | | | | | |
| (A) Rental Collar | > 30' | > 8.0" | 3.25" / 3.5" / 3.75" | 6 5/8 Reg | 6 5/8 Reg | See ITC # 3837799 39,000 ft.lbs |
| (B) Gap Sub | 3.68' | 8.0" | | | | |

| Specification | 4.75" | 6.5" | 8" |
|-----------------------------|--|---|--|
| Max Dogleg Rotating - Slick | 15°/100' | 13°/100' | 8°/100' |
| Max Dogleg Rotating - Flex | 25°/100' Ø4.00" Flex Section Min. 2/3 Total Length (20' of 31') Collars Above and Below Gap Sub | 18°/100' Ø5.625" Flex Section Min. 2/3 Total Length (20' of 31') Collars Above and Below Gap Sub | 13°/100' Ø6.00" Flex Section Min. 2/5 Total Length (12.4' of 31') Collars Above and Below Gap Sub |
| Max Compression | 100,000 lbs | 200,000 lbs | 300,000 lbs |
| Max Tension @ 302°F | 500,000 lbs | 1,000,000 lbs | 1,200,000 lbs |
| Max Torque | 9,000 ft.lbs | 26,000 ft.lbs | 39,000 ft.lbs |
| Max Temp | 302 °F | 302 °F | 302 °F |
| Max Pressure | 15000 psi* | | |
| Max Flow Rate | 375 gpm | 500 gpm (2.813") 750 gpm (3.25") | 750 gpm (3.25" ID) 900 gpm (3.5" ID) |

| Probe | Length | OD | Weight |
|-----------------------|--------|-------|--------|
| (M) Fishing Head | 0.83' | 1.75" | 8 lbs |
| (G) Gap Assembly | 2.43' | 2" | 18 lbs |
| (L) XDT | 5.51' | 2" | 32 lbs |
| (K / H) Battery | 6.33' | 1.75" | 30 lbs |
| (J) Gamma | 4.52' | 1.75" | 24 lbs |
| (I) D&I Sensor Module | 4.67' | 1.75" | 26 lbs |
| (N) End Stabilizer | 1.38' | 1.75" | 12 lbs |

| Sensor Measurement | Length | Comment |
|--------------------------|--------|---|
| (D) Fixed lower assembly | 6.64' | Lower seal face of XDT to gap sub set screw |
| (E) Gamma sensor | 2.83' | Sensor package to probe box seal face |
| (F) D&I sensor | 2.20' | |

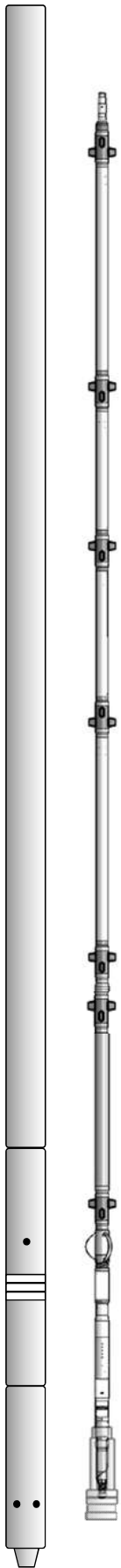
Toolstring Order

- The XDT, Gap Assembly and Pulsar probes must be assembled together at the top of the tool string
- Probes below the XDT may be assembled in any order - three batteries maximum
- Use xBolt G2 Tool Length Calculator to determine sensor offsets (See ITC # 7288212)

* XDAG and XBTs are rated to 20,000 psi.

xBolt G2 - R Fishing Diagram and Specifications

Dual Telemetry



Shock And Vibration Specifications

| | | Axial Peak Shock | Lateral Peak Shock | Shock Risk |
|------------|---------|------------------|--------------------|------------|
| Dpoint: | | SHK_AXL_MAX | SHK_LAT_MAX | SHKRSK |
| Unit: | | G | G | Unitless |
| Risk Level | Low | 0-25 | 0-75 | 0 |
| | Medium | 25-50 | 75-150 | 1 |
| | High | 50-100 | 150-225 | 2 |
| | Severe* | >100 | >225 | 3 |

| SHKRSK Value | Shocks over 50G per second |
|--------------|----------------------------|
| 0 | 0 - 2 |
| 1 | 2 - 30 |
| 2 | 30 - 100 |
| 3 | 100+ |

| STKSLP Value | StickSlip Percent |
|--------------|-------------------|
| 0 | 0-40 |
| 1 | 40-80 |
| 2 | 80-100 |
| 3 | 100+ |

| LCM/Solids Specifications | |
|------------------------------|---------------|
| LCM/Solids Type | Limit |
| Med/Fine Ground Walnut Shell | 40 ppb |
| Plastic/Glass Beads | 40 ppb |
| Baro Seal | 30 ppb |
| Cotton Seed | 30 ppb |
| Cedar Fiber | 30 ppb |
| Sand | < 1% |
| Low Gravity Solids | < 8% |
| pH Range | 9.5 < pH < 12 |

| xBolt-R DT Bow Spring Chart | | |
|-----------------------------|-------------|-----------|
| Bow Spring P/N | No-Go Gauge | Tool Size |
| 103121534* | Red | 475 |
| 103121535* | Yellow | 675 |
| 103232578* | Blue | 800 |

*Bow Springs Should Always Be Installed on Connector Housing for xBolt G2-R DT/EM

| Temperature | |
|-------------------------------|-------|
| DT/EM Configurations | 150°C |
| MP Configuration w/XDAG & XBT | 165°C |

Orifice Recommendations

