

EXPLORATION TOOLS

DRILLING REFERENCE

DIMENSIONS, WEIGHTS AND VOLUMES

BIT SELECTION GUIDE (MOHS 1-4.5)



HARDNESS	SOFT	SOFT	SOFT
Mohs Scale	1-2.5	3-3.5	4-4.5
Lithologies	Talc, Gypsum, Mudstone	Limestone, Marble	Fluorite, Dolomite, Slate
Longyear	Purple	Blue	Blue
Longyear Large Diamond	Gray	Gray	Gray
UMX	SSUMX	SSUMX	SSUMX, 7UMX
Alpha	02	02	02, 06ABR
Fordia	--	Hero 3	Hero 7
Hayden	2	4	4

ALL THIRD-PARTY TRADEMARKS ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS. ALL DIMENSIONS, WEIGHTS AND VOLUMES SHOWN ARE NOMINAL

BIT SELECTION GUIDE (MOHS 6-9)



HARDNESS	SOFT	SOFT	SOFT	MEDIUM HARD
Mohs Scale	6-6.5	7-7.5	8	9
Lithologies	Sandstone, Basalt, Schist	Granite, Diorite, Rhyolite, Greenstone	Quartzite, Gniess, Chert, Taconite	Banded Iron, Corundum
Longyear	Blue, Green	Green, Yellow	Yellow, Orange	Orange, Red
Longyear Large Diamond	Gray, Black	Black	Black, Shadow	Shadow
UMX	SSUMX, 7UMX	7UMX, 9UMX	9UMX, 10UMX	10UMX
Alpha	06ABR, 07ABR	07ABR, 08ABR	08COM, 09ABR	09, 09COM, 10COM
Fordia	Hero 9, RS9	Hero 11, Kraken, RS9	Hero 13, Kraken	Hero 13
Hayden	9AA	9AA, KS5	KS5, 12-14	14-15

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DRILL BIT GAUGES (Q)



SUPERQ				
SIZE	CORE OD (IN/MM)	BIT OD -R (IN/MM)	BIT OD OS (IN/MM)	HOLE VOL (GAL/100FT / L/100M)
BQ	1.433 / 36.4	2.360 / 59.6	N/A	22.7 / 282
NQ	1.875 / 47.6	2.980 / 75.7	3.032 / 77.0	36.3 / 451
HQ	2.500 / 63.5	3.782 / 96.1	3.830, 3.895 / 97.3, 98.9	58.3 / 724
PQ	3.345 / 85.0	4.827 / 122.6	4.950 / 125.7	95.1 / 1180

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DRILL BIT GAUGES (QTK)



Q THIN KERF				
SIZE	CORE OD (IN/MM)	BIT OD -R (IN/MM)	BIT OD OS (IN/MM)	HOLE VOL (GAL/100FT / L/100M)
AQTK	1.202 / 30.5	1.890 / 47.6	N/A	14.6 / 181
BQTK	1.601 / 40.7	2.360 / 59.6	N/A	22.7 / 282
NQTK	1.995 / 50.7	2.980 / 75.7	3.032 / 77.0	36.3 / 451

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DRILL BIT GAUGES (Q3/QTT)



TRIPLE TUBE				
SIZE	CORE OD (IN/MM)	BIT OD -R (IN/MM)	BIT OD OS (IN/MM)	HOLE VOL (GAL/100FT / L/100M)
NQ3, NQTT	1.775 / 45.1	2.980 / 75.7	3.032 / 77.0	36.3 / 451
HQ3, HQTT	2.406 / 61.1	3.782 / 96.1	3.830, 3.895 / 97.3, 98.9	58.3 / 724
PQ3, PQTT	3.270 / 83.1	4.827 / 122.6	4.950 / 125.7	95.1 / 1180

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DRILLING GUIDELINES (Q)



Q					
SIZE	SPEED (RPM)	WOB (LOW - LBF / KN)	WOB (HIGH - LBF / KN)	FLOW (LOW - GPM / LPM)	FLOW (HIGH - GPM / LPM)
BQ	1200	2000 / 9	5500 / 24	6 / 20	8 / 30
NQ	1000	3000 / 13	8000 / 36	10 / 35	13 / 50
HQ	750	5000 / 22	12000 / 53	14 / 50	20 / 70
PQ	600	7000 / 31	18000 / 80	20 / 80	30 / 100

ALL DIMENSIONS, WEIGHTS AND VOLUMES SHOWN ARE NOMINAL

DRILLING GUIDELINES (QTK)



QTK					
SIZE	SPEED (RPM)	WOB (LOW - LBF / KN)	WOB (HIGH - LBF / KN)	FLOW (LOW - GPM / LPM)	FLOW (HIGH - GPM / LPM)
AQTK	1500	1200 / 5	3000 / 13	3 / 12	5 / 20
BQTK	1200	1500 / 8	5000 / 20	5 / 20	7 / 26
NQTK	950	2500 / 12	8000 / 34	9 / 32	12 / 44

ALL DIMENSIONS, WEIGHTS AND VOLUMES SHOWN ARE NOMINAL

DRILLING GUIDELINES (Q3/QTT)



Q3/QTT					
SIZE	SPEED (RPM)	WOB (LOW - LBF / KN)	WOB (HIGH - LBF / KN)	FLOW (LOW - GPM / LPM)	FLOW (HIGH - GPM / LPM)
NQ3, NQTT	950	3000 / 14	8000 / 36	10 / 35	13 / 50
HQ3, HQTT	750	5000 / 20	12000 / 54	15 / 55	20 / 75
PQ3, PQTT	600	7000 / 32	18000 / 80	22 / 80	28 / 105

- **Rotation Speed:** in extremely broken, hard ground, run at half RPM and weight on bit (WOB) sufficient to reach 1 - 2 ipm (3 - 5 cpm).
- **WOB:** Constant WOB will require changing holdback pressure. Check off bottom weight as rods are added.
- **Water Flow:** We recommend a flow rate based on the amount of cuttings at 6-8 IPM (15-20 cpm). Higher penetration rates should have higher flow rates.

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ROD RATINGS (STANDARD)



STANDARD WALL				
SIZE	DEPTH RATING* (FT/M)	RATED PULLBACK* (LBF/KN)	MIN. MAKE- UP** (FT- LB/NM)	MAX. MAKE- UP** (FT- LB/NM)
BXQ	13000 / 4000	75000 / 330	300 / 400	1750 / 2400
BRQ	9800 / 3000	56250 / 250	300 / 400	1100 / 1500
B SuperQ	6500 / 2000	45000 / 200	300 / 400	750 / 1000
NRQ	9800 / 3000	75000 / 330	450 / 600	1750 / 2400
N SuperQ	8000 / 2500	60000 / 250	500 / 700	1500 / 2000
HRQ	8200 / 2500	115000 / 510	750 / 1000	1520 / 3500
HQ	6500 / 2000	80000 / 350	750 / 1000	1500 / 2000
PHD	4900 / 1500	100000 / 450	750 / 1000	3000 / 4000

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ROD RATINGS (THIN KERF)



THIN KERF				
SIZE	DEPTH RATING* (FT/M)	RATED PULLBACK* (LBF/KN)	MIN. MAKE- UP** (LBF/NM)	MAX. MAKE- UP** (FT- LB/NM)
BRQTK	4900 / 1500	45000 / 200	300 / 400	660 / 895

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ROD RATINGS (W-WALL)



W-WALL				
SIZE	DEPTH RATING* (FT/M)	RATED PULLBACK* (LBF/KN)	MIN. MAKE- UP** (FT- LB/NM)	MAX. MAKE- UP** (FT- LB/NM)
NXQ	13100 / 4000	95000 / 425	450 / 600	2500 / 3400
NRQ	10800 / 3300	75000 / 330	450 / 600	1750 / 2400
HXQ	13100 / 4000	115000 / 510	750 / 1000	3000 / 4000
HRQ	10000 / 3050	115000 / 510	750 / 1000	2600 / 3500
PHD	6500 / 2000	100000 / 450	750 / 1000	3000 / 4000

- (*) Depth capacity decreases with wear. For example, derate by at least 50% for box shoulder thickness worn to 50% of original.
- (**) Increase make-up torque to match operating torque as depth increases. Operating torque should not exceed make-up torque.

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DRILL RODS (STANDARD)



STANDARD					
SIZE	OD (IN/MM)	ID (IN/MM)	WEIGHT (LB-10FT / KG-3M)	THREADS (PER IN / PITCH MM)	CONTENT (GAL/L 100FT)
BRQ, BQ	2.19 / 55.6	1.81 / 46.1	40.2 / 18.0	3.0 / 8.5	13.2 / 167
BXQ*	2.19 / 55.6	1.81 / 46.1	40.2 / 18.0	2.0 / 12.7	13.2 / 167
NRQ, NQ	2.75 / 69.9	2.38 / 60.3	52.4 / 23.4	3.0 / 8.5	23.0 / 286
HRQ, HQ	3.50 / 88.9	3.06 / 77.8	77.0 / 34.5	3.0 / 8.5	38.2 / 475
PHD	4.50 / 114.3	4.00 / 101.6	117.0 / 52.2	2.5 / 102	65.3 / 811

- (*) Patents: AU2012209354; AU2013315186; CA2884798; CA2825533; CN201280010513; RU2607560; US9810029; ZA2013/06418; Patents Pending.
- W-Wall™ (XQ™) and V-Wall™ (RQ™, HD) drill rods are compatible with the standard wall rods and provide lighter weight, less stiffness, and faster inner tube tripping for deep or deviated holes. Usable under the following patents: AU2008222974; CA2679933; CN101675205; US8333255; US9359847; ZA2009/05921; Patents Pending. Q, RQ and XQ are trademarks of Boart Longyear.

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DRILL RODS (THIN KERF)



THIN KERF					
SIZE	OD (IN/MM)	ID (IN/MM)	WEIGHT (LB-10FT / KG-3M)	THREADS (PER IN / PITCH MM)	CONTENT (GAL/L 100FT)
BRQTK	2.20 / 55.8	1.91 / 48.4	32.0 / 14.3	3.5 / 7.3	14.8 / 184

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ALL DIMENSIONS, WEIGHTS AND VOLUMES SHOWN ARE NOMINAL

DRILL RODS (W-WALL)



W-WALL						
SIZE	OD (IN/MM)	ROD BODY ID (IN/MM)	JOINT ID (IN/MM)	WEIGHT (LB- 10FT / KG-3M)	THREADS (PER IN / PITCH MM)	CONTENT (GAL/L 100FT)
NRQ	2.75 / 69.9	2.44 / 62.0	2.38 / 60.3	44.0 / 20.7	3.0 / 8.5	23.9 / 297
NXQ*	2.75 / 69.9	2.44 / 62.0	2.38 / 60.3	44 / 20.7	2.0 / 12.7	23.9 / 297
HRQ	3.50 / 88.9	3.19 / 81.0	3.06 / 77.8	56 / 27.3	3.0 / 8.5	40.7 / 506
HXQ*	3.50 / 88.9	3.19 / 81.0	3.06 / 77.8	56 / 27.3	2.0 / 12.7	40.7 / 506
PHD	4.50 / 114.3	4.19 / 106.4	4.00 / 101.6	85.5/38. 3	2.5 / 10.2	71.0 / 889

- (*) Patents: AU2012209354; AU2013315186; CA2884798; CA2825533; CN201280010513; RU2607560; US9810029; ZA2013/06418; Patents Pending.
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CONVENTIONAL DRILL RODS



CONVENTIONAL DRILL RODS						
SIZE	OD (IN/MM)	ROD BODY ID (IN/MM)	JOINT ID (IN/MM)	WEIGHT (LB- 10FT / KG-3M)	THREADS (PER IN / PITCH MM)	CONTENT (GAL/L 100FT)
AW	1.75 / 44.5	1.22 / 30.9	0.63 / 15.9	44.0 / 19.7	3.0 / 8.5	6.0 / 75
AWJ	1.75 / 44.5	1.38 / 34.9	0.63 / 15.9	32.0 / 14.5	5.0 / 5.1	7.2 / 90
AWJ LW	1.75 / 44.5	1.50 / 38.1	0.63 / 15.9	22.7 / 10.4	5.0 / 5.1	8.8 / 94
BW	2.20 / 54.0	1.75 / 44.5	.75 / 19.0	42 / 18.8	3.0 / 8.5	12.5 / 155
BWJ	2.20 / 54.0	1.75 / 44.5	.75 / 19.0	40.4 / 18.0	5.0 / 5.1	11.8 / 146
BWJ LW	2.20 / 54.0	1.91 / 48.4	.75 / 19.0	36 / 16.4	5.0 / 5.1	14.2 / 177
NW	2.68 / 68.0	2.30 / 57.2	1.38 / 34.9	54 / 24.2	3.0 / 8.5	20.7 / 257
NWJ	2.68 / 68.0	2.25 / 57.2	1.13 / 28.6	52.0 / 23.5	4.0 / 6.4	19.6 / 244
HW	3.50 / 88.9	3.06 / 77.8	2.38/ 60.3	77 / 35	3.0 / 8.5	38.2 / 475

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FLUSH CASING



FLUSH CASING					
SIZE	OD (IN/MM)	ID (IN/MM)	WEIGHT (LB-10FT / KG-3M)	THREADS (PER IN / PITCH MM)	CONTENT (GAL/L 100FT)
AW	2.25 / 57.1	1.91 / 47.4	38.0 / 17.0	4.0 / 6.4	14.8 / 184
BW	2.88 / 73.0	2.38 / 60.3	70.0 / 31.3	4.0 / 6.4	23.0 / 286
NWT	3.50 / 88.9	3.00 / 76.2	86.0 / 38.4	4.0 / 6.4	36.7 / 456
HWT*	4.50 / 114.3	4.00 / 101.6	117.0 / 52.2	2.5 / 10.2	65.5 / 811
PWT	5.50 / 139.7	5.00 / 127.0	144.0 / 64.3	2.5 / 10.2	102.0 / 1267

*Compatible with PHD drill rod. ALL DIMENSIONS, WEIGHTS AND VOLUMES SHOWN
ARE NOMINAL