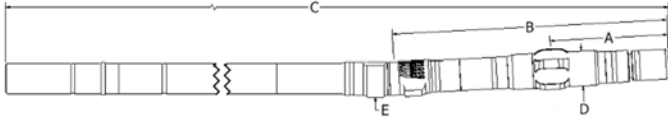


### RVMA-71 : 4/5 Lobe 7.0 Stage



#### Dimensions

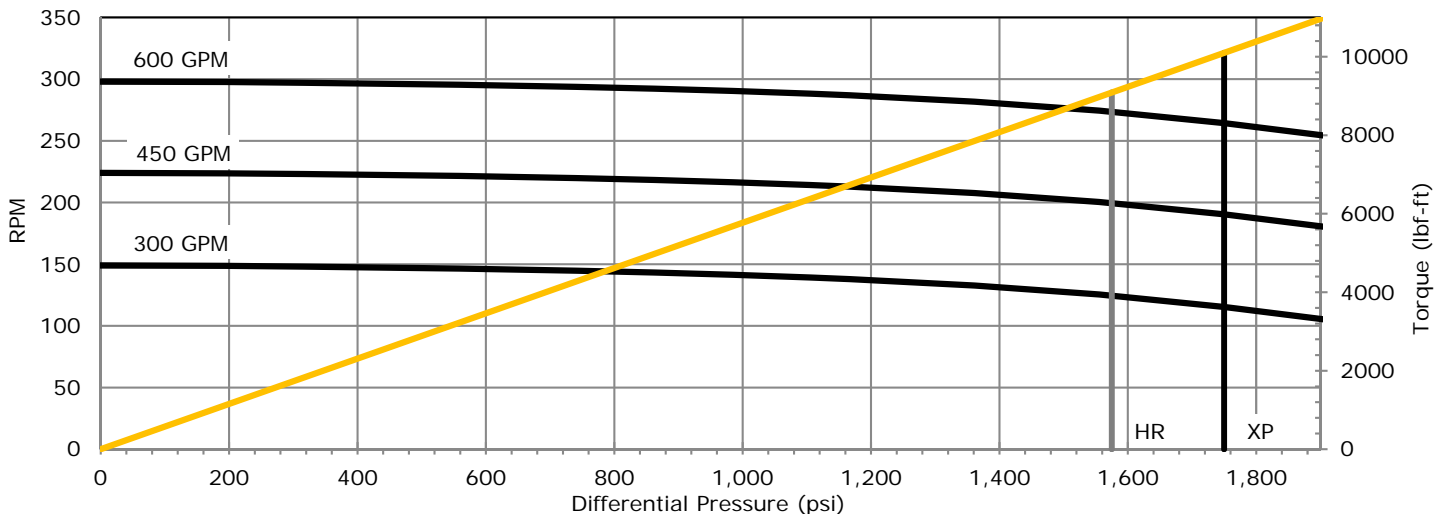
Bit to Stabilizer Center	A	27 in
Bit to Bend, ABH	B	63 in
Bit to Bend, Fixed	B	52 in
Bit to Top Sub	C	326 in
Body OD, Slick	D	7.13 in
Body OD, Stabilizer	D	7.88 in
Pad Radius, ABH	E	4.11 in
Pad Radius, Fixed	E	3.90 in
Bottom Connection	4-1/2 REG Box 6-5/8 REG Box 4-1/2 IF Pin	
Top Connection	4-1/2 IF Box 4-1/2 XH Box XT-39 Box	
Top Sub Float Bore	4R	

#### Recommended Operating Limits

Max WOB	109,000 lbf
Max Overpull, Backream	157,000 lbf
Max Overpull, Re-Run	252,000 lbf
Max Overpull, POOH	780,000 lbf

Performance Details	HR	XP
Max Diff Pressure	1,580	1,740 psi
Max Torque	9,090	10,000 lbf-ft
Stall Torque	13,630	15,000 lbf-ft
Rotation	0.497	0.497 rev/gal
Flow Range	300-600	300-600 gpm
Speed Range	149-300	149-300 rpm

#### Theoretical Performance Curve



Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.

#### Predicted Build Rates (Adj.) – Degrees/100ft

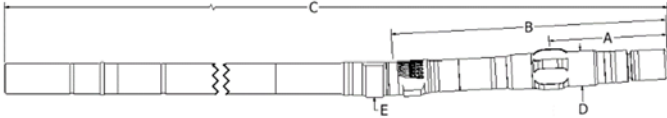
Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4
<b>0.39</b>	2.8	2.1	1.2	2.8	2.7	3.6
<b>0.78</b>	5.8	5.1	1.8	5.8	5.3	6.2
<b>1.15</b>	8.6	7.9	4.6	8.6	7.9	8.6
<b>1.50</b>	11.3	10.5	7.3	11.3	10.5	10.9
<b>1.83</b>	13.8	13.1	9.8	13.8	13.1	13.1
<b>2.12</b>	16.0	15.3	12.0	16.0	15.3	15.0
<b>2.38*</b>	18.0	17.2	14.0	18.0	17.2	16.7
<b>2.60*</b>	19.6	18.9	15.7	19.6	18.9	18.2
<b>2.77*</b>	20.9	20.2	17.0	20.9	20.2	19.3
<b>2.90*</b>	21.9	21.2	17.9	21.9	21.2	20.1
<b>2.97*</b>	22.5	21.7	18.5	22.5	21.7	20.6
<b>3.00*</b>	22.7	22.0	18.7	22.7	22.0	20.8

\*Bend Setting not recommended for Rotary Drilling

#### Predicted Build Rates (Fixed) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4
<b>0.78</b>	3.8	3.0	-	5.3	5.5	6.4
<b>1.15</b>	6.6	5.8	2.0	7.9	8.1	9.0
<b>1.50</b>	9.3	8.5	4.6	10.3	10.5	11.4
<b>1.75</b>	11.2	10.4	6.6	12.0	12.2	13.1
<b>1.83</b>	11.8	11.0	7.2	12.6	12.8	13.7
<b>2.00</b>	13.1	12.3	8.5	13.8	13.9	14.8
<b>2.12</b>	14.0	13.2	9.4	14.6	14.8	15.7
<b>2.25*</b>	15.0	14.2	10.4	15.5	15.7	16.6
<b>2.38*</b>	16.0	15.2	11.3	16.4	16.6	17.4
<b>2.50*</b>	16.9	16.1	12.3	17.2	17.4	18.3

\*Bend Setting not recommended for Rotary Drilling

**RVMA-71 : 7/8 Lobe 5.0 Stage**

**Dimensions**

Bit to Stabilizer Center	A	27 in
Bit to Bend, ABH	B	63 in
Bit to Bend, Fixed	B	52 in
Bit to Top Sub	C	311 in
Body OD, Slick	D	7.13 in
Body OD, Stabilizer	D	7.88 in
Pad Radius, ABH	E	4.11 in
Pad Radius, Fixed	E	3.90 in
Bottom Connection	4-1/2 REG Box 6-5/8 REG Box 4-1/2 IF Pin	
Top Connection	4-1/2 IF Box 4-1/2 XH Box XT-39 Box	
Top Sub Float Bore	4R	

**Recommended Operating Limits**

Max WOB	109,000 lbf
Max Overpull, Backream	157,000 lbf
Max Overpull, Re-Run	252,000 lbf
Max Overpull, POOH	780,000 lbf

Performance Details	HR	XP
Max Diff Pressure	1,130	1,240 psi
Max Torque	10,460	11,510 lbf-ft
Stall Torque	15,690	17,260 lbf-ft
Rotation	0.288	0.288 rev/gal
Flow Range	300-600	300-600 gpm
Speed Range	86-180	86-180 rpm

**Predicted Build Rates (Adj.) – Degrees/100ft**

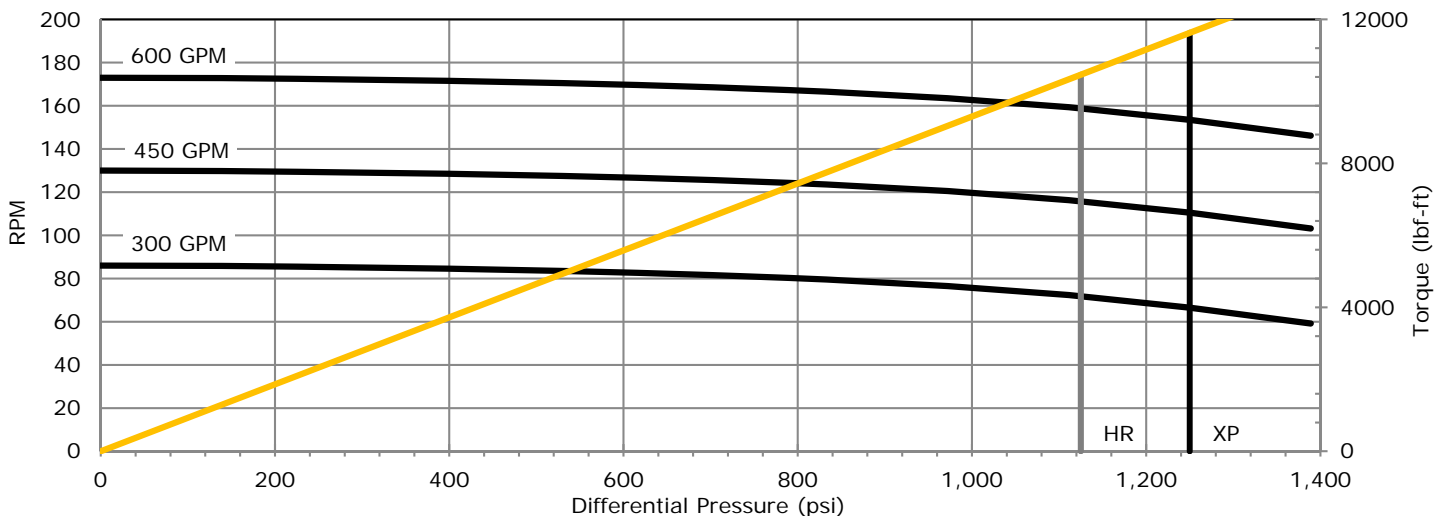
Bend Setting	Slick Hole Size			Stabilized Hole Size		
	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
Deg	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
0.39	3.0	2.2	1.2	3.0	2.9	3.9
0.78	6.1	5.4	1.9	6.1	5.6	6.6
1.15	9.1	8.3	4.9	9.1	8.3	9.1
1.50	11.9	11.1	7.7	11.9	11.1	11.5
1.83	14.5	13.8	10.4	14.5	13.8	13.8
2.12	16.9	16.1	12.7	16.9	16.1	15.8
2.38*	18.9	18.2	14.8	18.9	18.2	17.5
2.60*	20.7	19.9	16.5	20.7	19.9	19.1
2.77*	22.1	21.3	17.9	22.1	21.3	20.2
2.90*	23.1	22.3	18.9	23.1	22.3	21.1
2.97*	23.7	22.9	19.5	23.7	22.9	21.6
3.00*	23.9	23.1	19.7	23.9	23.1	21.8

\*Bend Setting not recommended for Rotary Drilling

**Predicted Build Rates (Fixed) – Degrees/100ft**

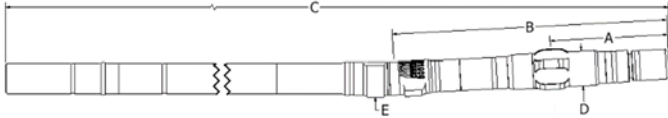
Bend Setting	Slick Hole Size			Stabilized Hole Size		
	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
Deg	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
0.78	4.0	3.2	-	5.6	5.9	6.8
1.15	7.0	6.1	2.1	8.3	8.5	9.5
1.50	9.8	8.9	4.9	10.8	11.0	12.0
1.75	11.8	10.9	6.9	12.6	12.8	13.8
1.83	12.5	11.6	7.6	13.2	13.4	14.4
2.00	13.8	12.9	8.9	14.4	14.6	15.6
2.12	14.8	13.9	9.9	15.3	15.5	16.5
2.25*	15.8	14.9	10.9	16.2	16.4	17.4
2.38*	16.9	16.0	12.0	17.2	17.4	18.4
2.50*	17.8	16.9	12.9	18.0	18.2	19.2

\*Bend Setting not recommended for Rotary Drilling

**Theoretical Performance Curve**


Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.

### RVMA-71 : 7/8 Lobe 5.7 Stage



#### Dimensions

Bit to Stabilizer Center	A	27 in
Bit to Bend, ABH	B	63 in
Bit to Bend, Fixed	B	52 in
Bit to Top Sub	C	376 in
Body OD, Slick	D	7.13 in
Body OD, Stabilizer	D	7.88 in
Pad Radius, ABH	E	4.11 in
Pad Radius, Fixed	E	3.90 in
Bottom Connection	4-1/2 REG Box 6-5/8 REG Box 4-1/2 IF Pin 4-1/2 IF Box	
Top Connection	4-1/2 XH Box XT-39 Box	
Top Sub Float Bore	4R	

#### Recommended Operating Limits

Max WOB	109,000 lbf
Max Overpull, Backream	157,000 lbf
Max Overpull, Re-Run	252,000 lbf
Max Overpull, POOH	780,000 lbf

Performance Details	HR	XP
Max Diff Pressure	1,280	1,430 psi
Max Torque	13,720	15,240 lbf-ft
Stall Torque	20,580	22,870 lbf-ft
Rotation	0.242	0.242 rev/gal
Flow Range	300-700	300-700 gpm
Speed Range	72-169	72-169 rpm

#### Predicted Build Rates (Adj.) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
<b>Deg</b>	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
<b>0.39</b>	2.3	1.7	1.1	2.3	2.3	2.9
<b>0.78</b>	4.9	4.3	1.5	4.9	4.6	5.2
<b>1.15</b>	7.3	6.7	3.9	7.3	6.7	7.4
<b>1.50</b>	9.6	9.0	6.2	9.6	9.0	9.4
<b>1.83</b>	11.8	11.2	8.4	11.8	11.2	11.3
<b>2.12</b>	13.7	13.1	10.3	13.7	13.1	13.0
<b>2.38*</b>	15.4	14.8	12.0	15.4	14.8	14.5
<b>2.60*</b>	16.9	16.2	13.4	16.9	16.2	15.8
<b>2.77*</b>	18.0	17.3	14.5	18.0	17.3	16.8
<b>2.90*</b>	18.8	18.2	15.4	18.8	18.2	17.5
<b>2.97*</b>	19.3	18.7	15.8	19.3	18.7	17.9
<b>3.00*</b>	19.5	18.9	16.0	19.5	18.9	18.1

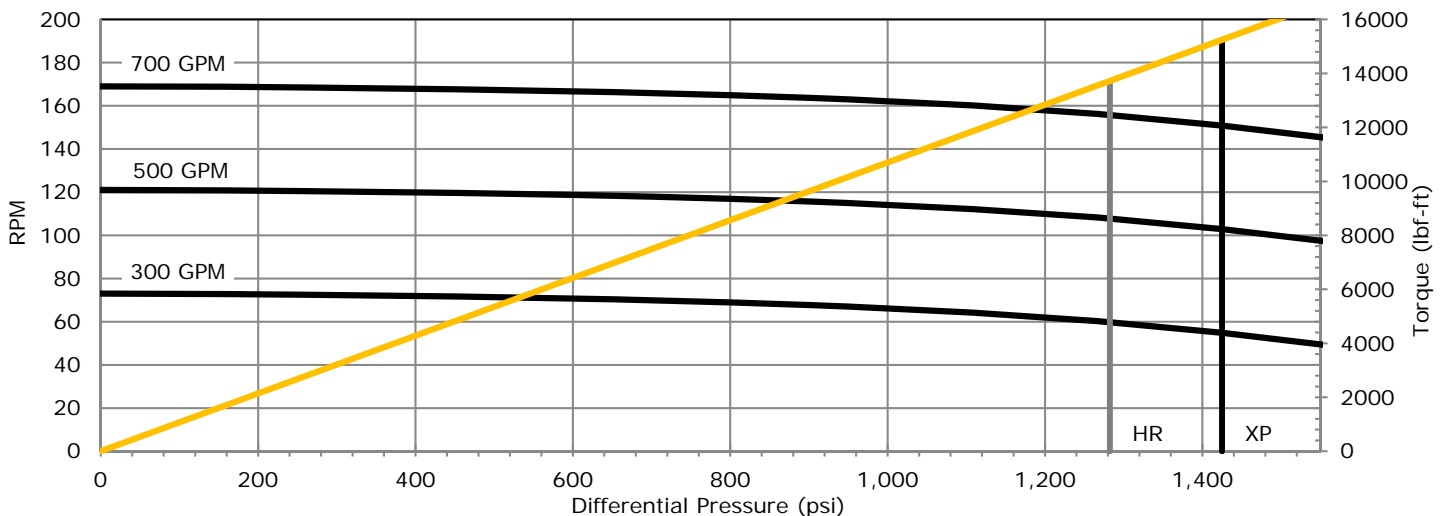
\*Bend Setting not recommended for Rotary Drilling

#### Predicted Build Rates (Fixed) – Degrees/100ft

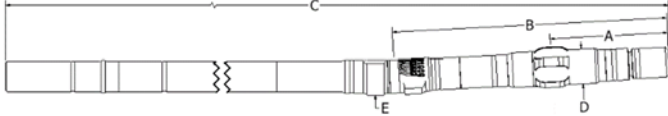
Bend Setting	Slick Hole Size			Stabilized Hole Size		
	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
<b>Deg</b>	8 1/2	8 3/4	9 7/8	8 1/2	8 3/4	9 7/8
<b>0.78</b>	3.3	2.5	-	4.6	4.7	5.4
<b>1.15</b>	5.7	5.0	1.7	6.8	7.0	7.6
<b>1.50</b>	8.0	7.3	4.0	8.9	9.1	9.7
<b>1.75</b>	9.6	8.9	5.6	10.5	10.6	11.2
<b>1.83</b>	10.2	9.4	6.1	10.9	11.1	11.7
<b>2.00</b>	11.3	10.6	7.3	12.0	12.1	12.8
<b>2.12</b>	12.1	11.3	8.0	12.7	12.8	13.5
<b>2.25*</b>	12.9	12.2	8.9	13.5	13.6	14.3
<b>2.38*</b>	13.8	13.0	9.8	14.3	14.4	15.1
<b>2.50*</b>	14.6	13.8	10.5	15.0	15.1	15.8

\*Bend Setting not recommended for Rotary Drilling

#### Theoretical Performance Curve



Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.

**RVMA-85 : 7/8 Lobe 3.4 Stage**

**Dimensions**

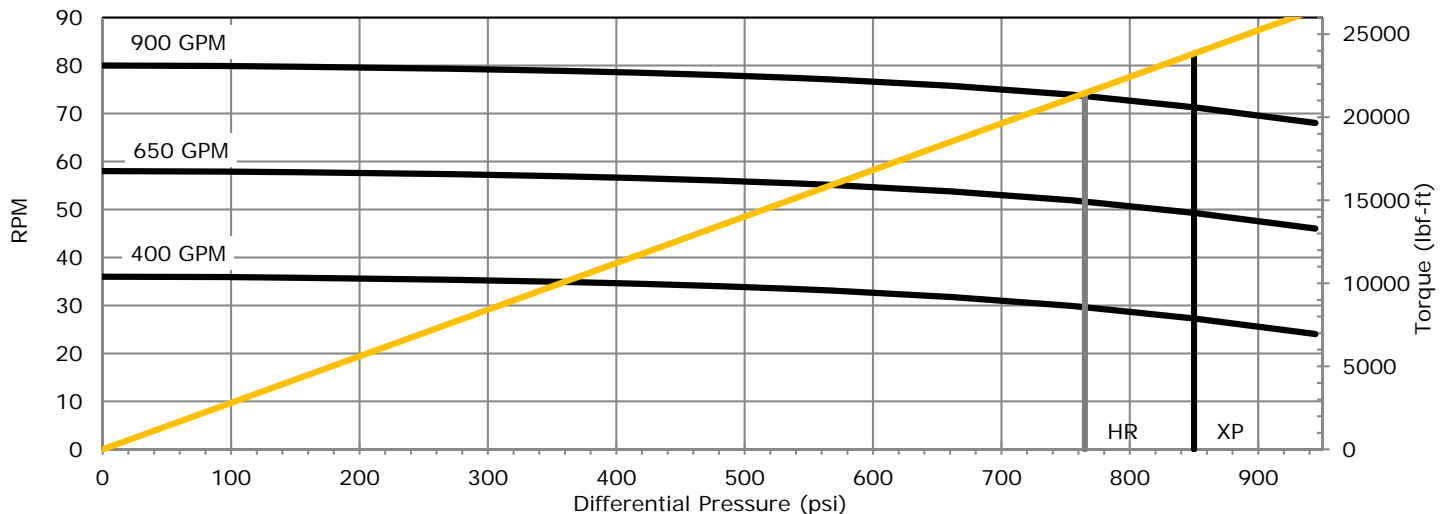
Bit to Stabilizer Center	A	39 in
Bit to Bend, ABH	B	90 in
Bit to Bend, Fixed	B	76 in
Bit to Top Sub	C	452 in
Body OD, Slick	D	8.50 in
Body OD, Stabilizer	D	9.50 in
Pad Radius, ABH	E	4.56 in
Pad Radius, Fixed	E	4.34 in
Bottom Connection	6-5/8 REG Box 6-5/8 REG Pin	
Top Connection	6-5/8 REG Box	
Top Sub Float Bore	5F-6R	

**Recommended Operating Limits**

Max WOB	164,000 lbf
Max Overpull, Backream	236,000 lbf
Max Overpull, Re-Run	440,000 lbf
Max Overpull, POOH	1,172,000 lbf

**Performance Details**

	HR	XP
Max Diff Pressure	770	850 psi
Max Torque	21,450	23,600 lbf-ft
Stall Torque	32,180	35,400 lbf-ft
Rotation	0.089	0.089 rev/gal
Flow Range	400-900	400-900 gpm
Speed Range	35-81	35-81 rpm

**Theoretical Performance Curve**


Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.

**Predicted Build Rates (Adj.) – Degrees/100ft**

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8	12 1/4
Deg						
0.39	1.3	-	-	2.0	2.3	3.0
0.78	3.4	2.3	-	3.8	4.1	4.8
1.15	5.5	4.3	1.9	5.6	5.9	6.6
1.50	7.4	6.3	3.8	7.4	7.5	8.2
1.83	9.2	8.1	5.6	9.2	9.1	9.8
2.12	10.8	9.7	7.2	10.8	10.5	11.1
2.38*	12.2	11.1	8.7	12.2	11.7	12.4
2.60*	13.4	12.3	9.9	13.4	12.8	13.4
2.77*	14.4	13.2	10.8	14.4	13.6	14.2
2.90*	15.1	13.9	11.5	15.1	14.2	14.8
2.97*	15.5	14.3	11.9	15.5	14.5	15.2
3.00*	15.6	14.5	12.1	15.6	14.6	15.3

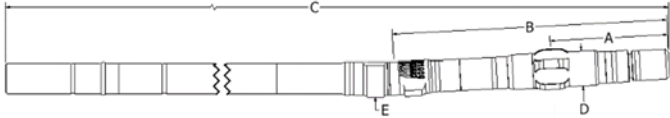
\*Bend Setting not recommended for Rotary Drilling

**Predicted Build Rates (Fixed) – Degrees/100ft**

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8	12 1/4
Deg						
0.78	2.3	1.0	-	4.0	4.3	4.9
1.15	4.3	3.0	-	5.8	6.1	6.8
1.50	6.3	5.0	2.2	7.5	7.8	8.5
1.75	7.6	6.3	3.5	8.8	9.1	9.7
1.83	8.1	6.8	4.0	9.2	9.5	10.1
2.00	9.0	7.7	4.9	10.0	10.3	11.0
2.12	9.7	8.4	5.6	10.6	10.9	11.6
2.25*	10.4	9.1	6.3	11.2	11.5	12.2
2.38*	11.1	9.8	7.0	11.9	12.2	12.8
2.50*	11.7	10.4	7.6	12.5	12.8	13.4

\*Bend Setting not recommended for Rotary Drilling

### RVMA-85 : 7/8 Lobe 4.0 Stage



#### Dimensions

Bit to Stabilizer Center	A	39 in
Bit to Bend, ABH	B	90 in
Bit to Bend, Fixed	B	76 in
Bit to Top Sub	C	355 in
Body OD, Slick	D	8.50 in
Body OD, Stabilizer	D	9.50 in
Pad Radius, ABH	E	4.56 in
Pad Radius, Fixed	E	4.34 in
Bottom Connection	6-5/8 REG Box 6-5/8 REG Pin	
Top Connection	6-5/8 REG Box	
Top Sub Float Bore	5F-6R	

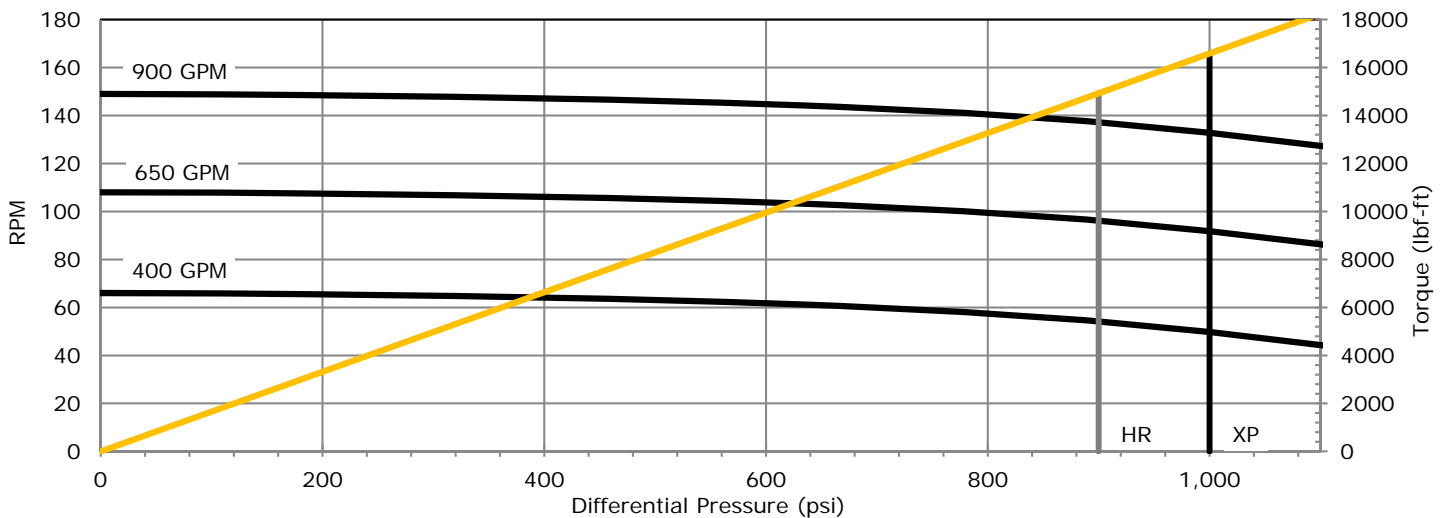
#### Recommended Operating Limits

Max WOB	164,000 lbf
Max Overpull, Backream	236,000 lbf
Max Overpull, Re-Run	440,000 lbf
Max Overpull, POOH	1,172,000 lbf

#### Performance Details

	HR	XP
Max Diff Pressure	900	990 psi
Max Torque	14,930	16,420 lbf-ft
Stall Torque	22,400	26,640 lbf-ft
Rotation	0.166	0.166 rev/gal
Flow Range	400-900	400-900 gpm
Speed Range	66-150	66-150 rpm

#### Theoretical Performance Curve



Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.

#### Predicted Build Rates (Adj.) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8
<b>0.39</b>	1.8	-	-	2.6	3.2	4.3
<b>0.78</b>	4.6	3.1	-	4.9	5.4	6.5
<b>1.15</b>	7.2	5.7	2.6	7.2	7.5	8.7
<b>1.50</b>	9.7	8.2	5.1	9.7	9.6	10.7
<b>1.83</b>	12.0	10.5	7.4	12.0	11.5	12.6
<b>2.12</b>	14.0	12.6	9.4	14.0	13.1	14.3
<b>2.38*</b>	15.9	14.4	11.3	15.9	14.6	15.8
<b>2.60*</b>	17.4	16.0	12.8	17.4	16.0	17.0
<b>2.77*</b>	18.6	17.2	14.0	18.6	17.2	18.0
<b>2.90*</b>	19.5	18.1	14.9	19.5	18.1	18.8
<b>2.97*</b>	20.0	18.6	15.4	20.0	18.6	19.2
<b>3.00*</b>	20.2	18.8	15.6	20.2	18.8	19.3

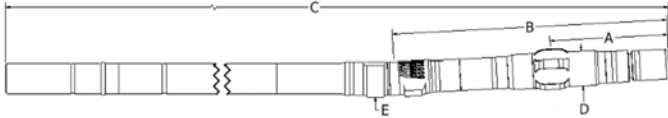
\*Bend Setting not recommended for Rotary Drilling

#### Predicted Build Rates (Fixed) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8
<b>0.78</b>	3.0	1.3	-	5.1	5.7	6.8
<b>1.15</b>	5.6	3.9	-	7.4	7.9	9.1
<b>1.50</b>	8.1	6.4	2.8	9.5	10.1	11.2
<b>1.75</b>	9.8	8.2	4.6	11.1	11.6	12.7
<b>1.83</b>	10.4	8.7	5.1	11.5	12.1	13.2
<b>2.00</b>	11.6	9.9	6.3	12.6	13.1	14.2
<b>2.12</b>	12.4	10.8	7.2	13.3	13.8	15.0
<b>2.25*</b>	13.4	11.7	8.1	14.1	14.6	15.8
<b>2.38*</b>	14.3	12.6	9.0	14.9	15.4	16.5
<b>2.50*</b>	15.1	13.5	9.9	15.6	16.1	17.3

\*Bend Setting not recommended for Rotary Drilling

### RVMA-85 : 7/8 Lobe 5.9 Stage



#### Dimensions

Bit to Stabilizer Center	A	39 in
Bit to Bend, ABH	B	90 in
Bit to Bend, Fixed	B	76 in
Bit to Top Sub	C	452 in
Body OD, Slick	D	8.50 in
Body OD, Stabilizer	D	9.50 in
Pad Radius, ABH	E	4.56 in
Pad Radius, Fixed	E	4.34 in
Bottom Connection	6-5/8 REG Box 6-5/8 REG Pin	
Top Connection	6-5/8 REG Box	
Top Sub Float Bore	5F-6R	

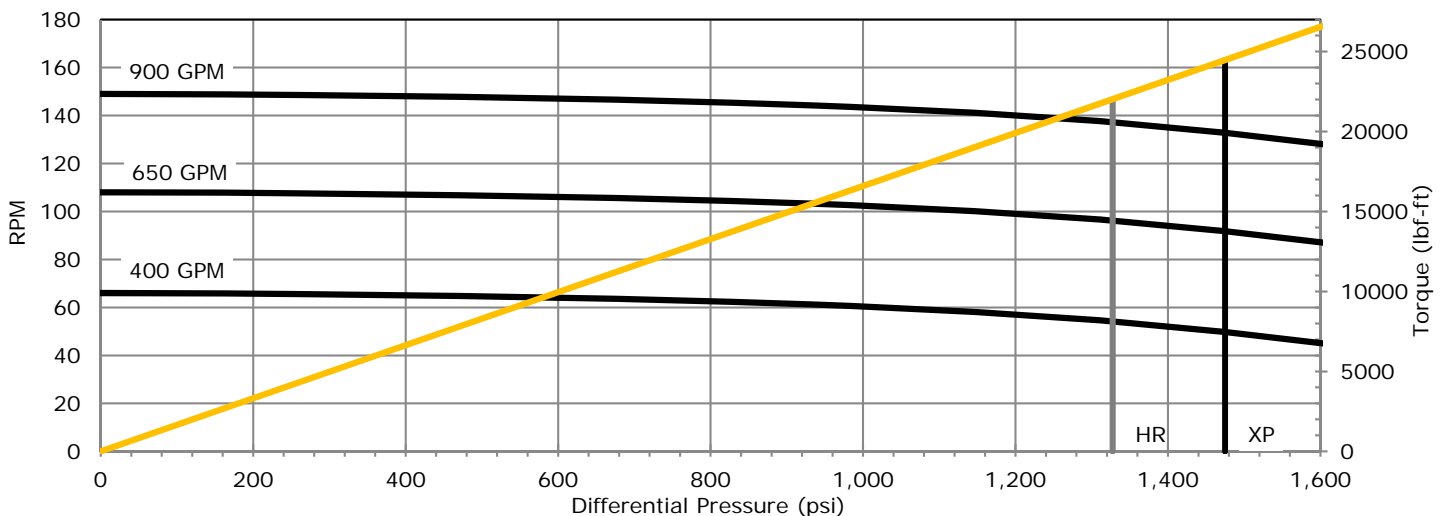
#### Recommended Operating Limits

Max WOB	164,000 lbf
Max Overpull, Backream	236,000 lbf
Max Overpull, Re-Run	440,000 lbf
Max Overpull, POOH	1,172,000 lbf

#### Performance Details

	HR	XP
Max Diff Pressure	1,330	1,460 psi
Max Torque	22,020	24,220 lbf-ft
Stall Torque	33,030	36,330 lbf-ft
Rotation	0.166	0.166 rev/gal
Flow Range	400-900	400-900 gpm
Speed Range	66-150	66-150 rpm

#### Theoretical Performance Curve



Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.

#### Predicted Build Rates (Adj.) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8
0.39	1.3	-	-	2.0	2.3	3.0
0.78	3.4	2.3	-	3.8	4.1	4.8
1.15	5.5	4.3	1.9	5.6	5.9	6.6
1.50	7.4	6.3	3.8	7.4	7.5	8.2
1.83	9.2	8.1	5.6	9.2	9.1	9.8
2.12	10.8	9.7	7.2	10.8	10.5	11.1
2.38*	12.2	11.1	8.7	12.2	11.7	12.4
2.60*	13.4	12.3	9.9	13.4	12.8	13.4
2.77*	14.4	13.2	10.8	14.4	13.6	14.2
2.90*	15.1	13.9	11.5	15.1	14.2	14.8
2.97*	15.5	14.3	11.9	15.5	14.5	15.2
3.00*	15.6	14.5	12.1	15.6	14.6	15.3

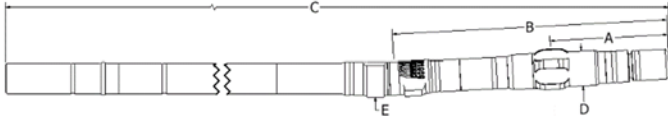
\*Bend Setting not recommended for Rotary Drilling

#### Predicted Build Rates (Fixed) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8
0.78	2.3	1.0	-	4.0	4.3	4.9
1.15	4.3	3.0	-	5.8	6.1	6.8
1.50	6.3	5.0	2.2	7.5	7.8	8.5
1.75	7.6	6.3	3.5	8.8	9.1	9.7
1.83	8.1	6.8	4.0	9.2	9.5	10.1
2.00	9.0	7.7	4.9	10.0	10.3	11.0
2.12	9.7	8.4	5.6	10.6	10.9	11.6
2.25*	10.4	9.1	6.3	11.2	11.5	12.2
2.38*	11.1	9.8	7.0	11.9	12.2	12.8
2.50*	11.7	10.4	7.6	12.5	12.8	13.4

\*Bend Setting not recommended for Rotary Drilling

### RVMA-51 : 6/7 Lobe 8.0 Stage



#### Dimensions

Bit to Stabilizer Center	A	22 in
Bit to Bend, ABH	B	55 in
Bit to Bend, Fixed	B	47 in
Bit to Top Sub	C	354 in
Body OD, Slick	D	5.13 in
Body OD, Stabilizer	D	5.80 in
Pad Radius, ABH	E	2.78 in
Pad Radius, Fixed	E	2.84 in
Bottom Connection	3-1/2 REG Box 3-1/2 IF Pin	
Top Connection	3-1/2 IF Box XT-39 Box	
Top Sub Float Bore	3-1/2 IF	

#### Recommended Operating Limits

Max WOB	54,000 lbf
Max Overpull, Backream	78,000 lbf
Max Overpull, Re-Run	154,000 lbf
Max Overpull, POOH	441,000 lbf

#### Performance Details

	HR	XP
Max Diff Pressure	1,800	2,000 psi
Max Torque	5,720	6,350 lbf-ft
Stall Torque	8,580	9,530 lbf-ft
Rotation	0.810	0.810 rev/gal
Flow Range	150-350	150-350 gpm
Speed Range	122-284	122-284 rpm

#### Predicted Build Rates (Adj.) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	6	6 1/4	6 3/4	6	6 1/4
<b>0.39</b>	1.3	-	-	1.8	2.0	2.3
<b>0.78</b>	4.1	3.3	1.7	4.3	4.4	4.7
<b>1.15</b>	6.7	5.9	4.3	6.7	6.7	7.1
<b>1.50</b>	9.1	8.3	6.8	9.1	8.9	9.2
<b>1.83</b>	11.5	10.7	9.1	11.5	11.0	11.3
<b>2.12</b>	13.5	12.7	11.1	13.5	12.8	13.1
<b>2.38*</b>	15.3	14.5	12.9	15.3	14.5	14.7
<b>2.60*</b>	16.9	16.1	14.5	16.9	16.1	16.1
<b>2.77*</b>	18.1	17.3	15.7	18.1	17.3	17.2
<b>2.90*</b>	19.0	18.2	16.6	19.0	18.2	18.0
<b>2.97*</b>	19.5	18.7	17.1	19.5	18.7	18.4
<b>3.00*</b>	19.7	18.9	17.3	19.7	18.9	18.6

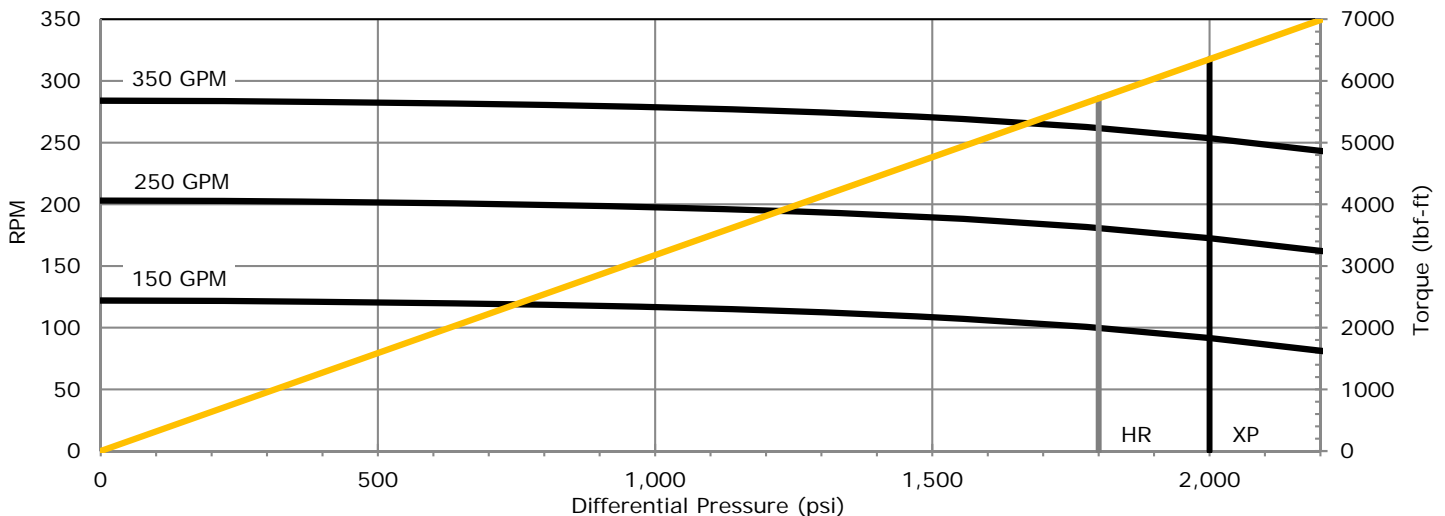
\*Bend Setting not recommended for Rotary Drilling

#### Predicted Build Rates (Fixed) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
	Deg	6	6 1/4	6 3/4	6	6 1/4
<b>0.78</b>	4.5	3.5	1.7	4.5	4.6	4.9
<b>1.15</b>	7.1	6.2	4.3	7.1	6.9	7.3
<b>1.50</b>	9.5	8.6	6.8	9.5	9.2	9.5
<b>1.75</b>	11.3	10.4	8.6	11.3	10.8	11.1
<b>1.83</b>	11.9	10.9	9.1	11.9	11.3	11.6
<b>2.00</b>	13.1	12.1	10.3	13.1	12.4	12.7
<b>2.12</b>	13.9	13.0	11.2	13.9	13.2	13.5
<b>2.25*</b>	14.8	13.9	12.1	14.8	14.0	14.3
<b>2.38*</b>	15.7	14.8	13.0	15.7	14.8	15.2
<b>2.50*</b>	16.6	15.7	13.8	16.6	15.7	15.9

\*Bend Setting not recommended for Rotary Drilling

#### Theoretical Performance Curve



Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.