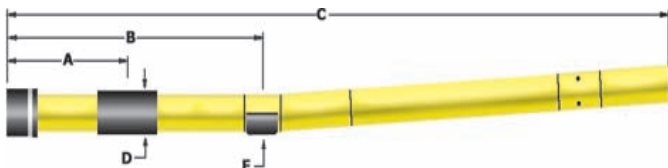




4 3/4" (121 mm)

Mud Motors



	Imperial		Metric	
A. Distance to stabilizer	18	inch	457	mm
B. Box to Bend	62	inch	1,575	mm
C. Overall Length	245	inch	6,223	mm
D. Thread Prot. Diameter	5.38	inch	137	mm
E. Kick Pad Diameter	5.25	inch	133	mm

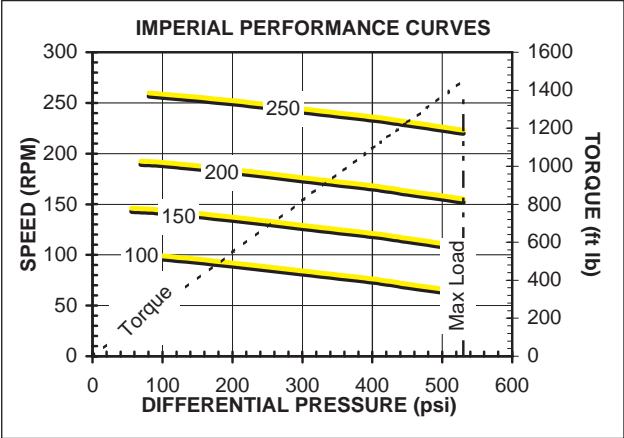
Top Connection	AS PER REQUEST				
Bottom Connection	3 1/2" Reg		3 1/2" Reg		
Weight	819	lb	364	daN	
Maximum Flow Rate	250	gpm	0.95	m ³ /min	
Maximum Torque	1,450	ft-lb	1,970	N-m	
Maximum Power	61	hp	45	kW	
Maximum Weight on bit	Dynamic	43,000	lb	19,000	daN
	Static	118,000	lb	52,000	daN
Maximum Allowable Pull	118,000	lb	52,000	daN	
Pull to Yield Motor	200,000	lb	90,000	daN	

Build Rate (degrees/100ft(30 m))				
Bend Settings (degrees)	Hole Sizes (in, mm)			
	5 7/8"	6 1/8"	6 1/4"	6 3/4"
	149 mm	156 mm	159 mm	171 mm
0.26	0.94	0.28	0.89	0.00
0.52	3.84	2.62	2.01	0.43
0.78	6.74	5.52	4.91	2.47
1.03	9.52	8.30	7.69	5.25
1.27	12.20	10.98	10.37	7.93
1.50	14.76	13.54	12.93	10.49
1.72	17.22	16.00	15.39	12.95
1.93	19.56	18.34	17.73	15.29
2.12	21.68	20.46	19.85	17.41
2.30	23.69	22.47	21.86	19.42
2.60	27.04	25.82	25.21	22.77
2.82	29.50	28.28	27.67	25.23
2.95	30.96	29.74	29.12	26.68
3.00	31.52	30.29	29.68	27.24

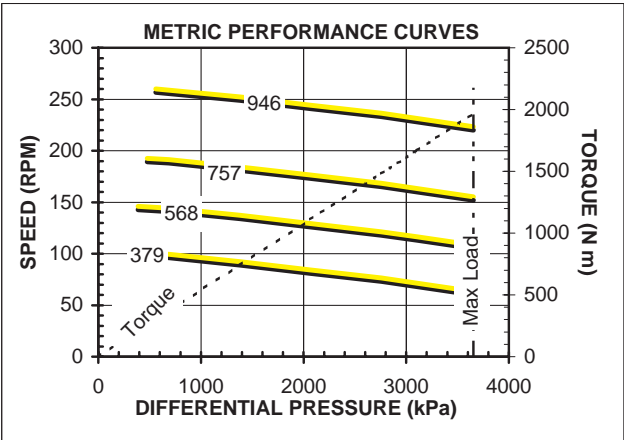
4 3/4" (121 mm) 4-5 3.5 Stage



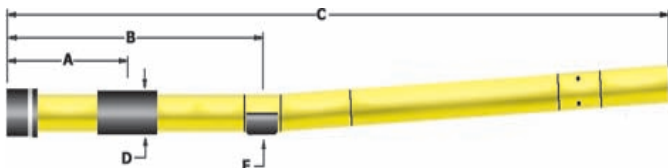
Maximum Pump Rate	250	gpm	950	Lpm
Revolutions per unit volume	1.020	rev/gal	0.270	rev/L
Pressure at full Load	530	psi	3,620	kPa
Torque at full load	1,450	ft lb	1,970	N m



Drilling Fluid Flow (GPM)	100	150	200	250
Pressure Drop Across Motor with No Load (off-bottom pressure) (PSI)	49	56	69	81
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (PSI)	481	474	461	449



Drilling Fluid Flow (L/min)	379	568	757	946
Pressure Drop Across Motor with No Load (off-bottom pressure) (kPa)	338	386	476	558
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (kPa)	3316	3268	3178	3096



	Imperial		Metric	
A. Distance to stabilizer	18	inch	457	mm
B. Box to Bend	62	inch	1,575	mm
C. Overall Length	309	inch	7,849	mm
D. Thread Prot. Diameter	5.38	inch	137	mm
E. Kick Pad Diameter	5.25	inch	133	mm

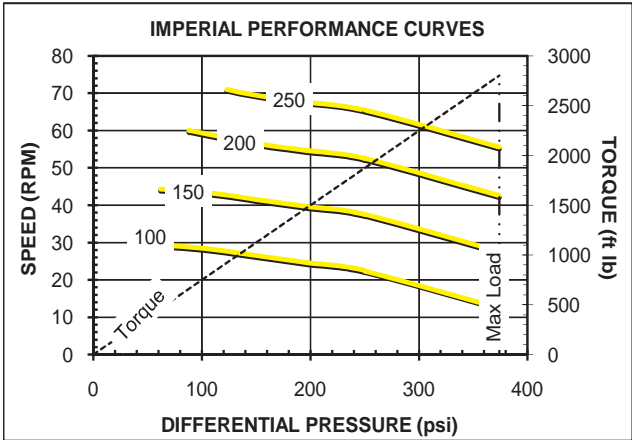
Top Connection	AS PER REQUEST				
Bottom Connection	3 1/2" Reg		3 1/2" Reg		
Weight	1,025	lb	456	daN	
Maximum Flow Rate	250	gpm	0.95	m ³ /min	
Maximum Torque	2,809	ft-lb	3,808	N-m	
Maximum Power	55	hp	41	kW	
Maximum Weight on bit	Dynamic	43,000	lb	19,000	daN
	Static	118,000	lb	52,000	daN
Maximum Allowable Pull	118,000	lb	52,000	daN	
Pull to Yield Motor	200,000	lb	90,000	daN	

Build Rate (degrees/100ft(30 m))				
Bend Settings (degrees)	Hole Sizes (in, mm)			
	5 7/8"	6 1/8"	6 1/4"	6 3/4"
	149 mm	156 mm	159 mm	171 mm
0.26	0.50	0.46	0.94	0.00
0.52	2.79	1.83	1.35	0.57
0.78	5.08	4.12	3.64	1.72
1.03	7.28	6.32	5.84	3.92
1.27	9.39	8.43	7.95	6.03
1.50	11.42	10.46	9.98	8.05
1.72	13.35	12.39	11.91	9.99
1.93	15.20	14.24	13.67	11.84
2.12	16.88	15.91	15.43	13.51
2.30	18.46	17.50	17.02	15.10
2.60	21.11	20.15	19.66	17.74
2.82	23.05	22.08	21.60	19.68
2.95	24.19	23.23	22.75	20.83
3.00	24.63	23.67	23.19	21.27

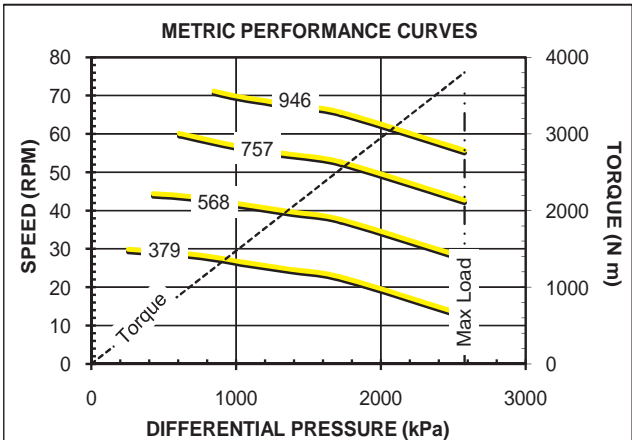
4 3/4" (121 mm) 7-8 2.0 Stage



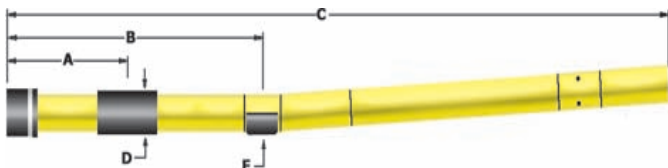
Maximum Pump Rate	250	gpm	950	Lpm
Revolutions per unit volume	0.296	rev/gal	0.078	rev/L
Pressure at full Load	374	psi	2578	kPa
Torque at full load	2,809	ft lb	3,808	N m



Drilling Fluid Flow (GPM)	100	150	200	250
Pressure Drop Across Motor with No Load (off-bottom pressure) (PSI)	37	62	88	123
Maximum Allowable Differential Pressure (on-bottom minus off-bottom pressure) (PSI)	337	312	286	251



Drilling Fluid Flow (L/min)	379	568	757	946
Pressure Drop Across Motor with No Load (off-bottom pressure) (kPa)	255	427	607	848
Maximum Allowable Differential Pressure (on-bottom minus off-bottom pressure) (kPa)	2324	2151	1972	1731



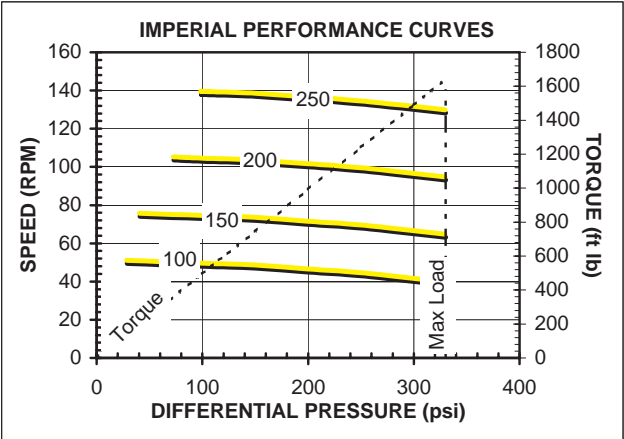
	Imperial		Metric	
A. Distance to stabilizer	18	inch	457	mm
B. Box to Bend	62	inch	1,575	mm
C. Overall Length	245	inch	6,223	mm
D. Thread Prot. Diameter	5.38	inch	137	mm
E. Kick Pad Diameter	5.25	inch	133	mm

Top Connection	AS PER REQUEST				
Bottom Connection	3 1/2" Reg		3 1/2" Reg		
Weight	1,181	lb	525	daN	
Maximum Flow Rate	250	gpm	0.95	m ³ /min	
Maximum Torque	1,560	ft-lb	2,120	N-m	
Maximum Power	33	hp	24	kW	
Maximum Weight on bit	Dynamic	43,000	lb	19,000	daN
	Static	118,000	lb	52,000	daN
Maximum Allowable Pull	118,000	lb	52,000	daN	
Pull to Yield Motor	200,000	lb	90,000	daN	

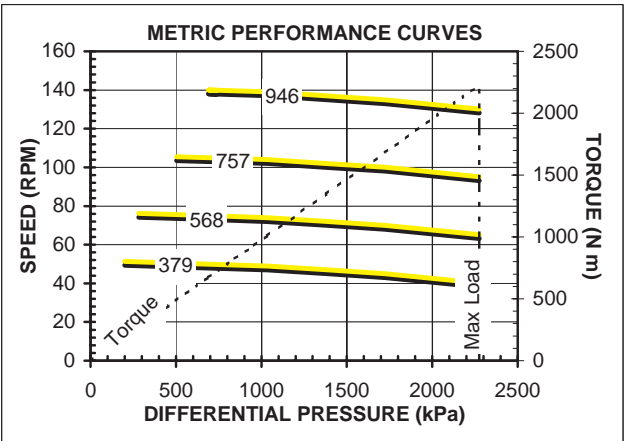
Build Rate (degrees/100ft(30 m))				
Bend Settings (degrees)	Hole Sizes (in, mm)			
	5 7/8"	6 1/8"	6 1/4"	6 3/4"
	149 mm	156 mm	159 mm	171 mm
0.26	0.89	0.31	0.90	0.00
0.52	3.72	2.53	1.93	0.48
0.78	6.56	5.36	4.77	2.38
1.03	9.28	8.09	7.49	5.11
1.27	11.90	10.71	10.11	7.73
1.50	14.41	13.22	12.62	10.23
1.72	16.81	15.62	15.02	12.63
1.93	19.10	17.91	17.31	14.93
2.12	21.18	19.98	19.39	17.00
2.30	23.14	21.95	21.35	18.97
2.60	26.42	25.23	24.63	22.24
2.82	28.83	27.63	27.04	24.65
2.95	30.25	29.06	28.46	25.85
3.00	30.80	29.60	29.01	26.62

4 3/4" (121 mm) 7-8 2.2 Stage

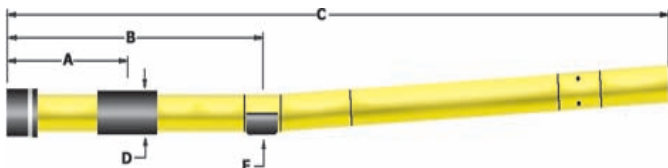
Maximum Pump Rate	250 gpm	950 Lpm
Revolutions per unit volume	0.522 rev/gal	0.138 rev/L
Pressure at full load	330 psi	2,280 kPa
Torque at full load	1,560 ft lb	2,120 N m



Drilling Fluid Flow (GPM)	100	150	200	250
Pressure Drop Across Motor with No Load (off-bottom pressure) (PSI)	29	41	73	107
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (PSI)	301	289	257	223



Drilling Fluid Flow (L/min)	379	568	757	946
Pressure Drop Across Motor with No Load (off-bottom pressure) (kPa)	200	283	503	738
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (kPa)	2075	1993	1772	1538



	Imperial		Metric	
A. Distance to stabilizer	18	inch	457	mm
B. Box to Bend	62	inch	1,575	mm
C. Overall Length	346	inch	8,788	mm
D. Thread Prot. Diameter	5.38	inch	137	mm
E. Kick Pad Diameter	5.25	inch	133	mm

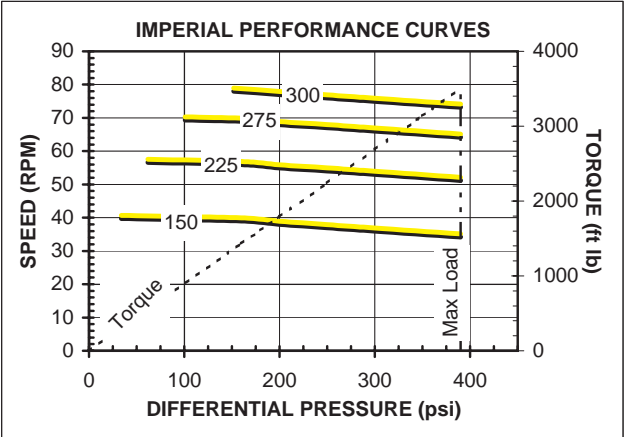
Top Connection	AS PER REQUEST				
Bottom Connection	3 1/2" Reg		3 1/2" Reg		
Weight	1,164	lb	518	daN	
Maximum Flow Rate	300	gpm	1.14	m ³ /min	
Maximum Torque	3,500	ft-lb	4,750	N-m	
Maximum Power	46	hp	35	kW	
Maximum Weight on bit	Dynamic	43,000	lb	19,000	daN
	Static	118,000	lb	52,000	daN
Maximum Allowable Pull	118,000	lb	52,000	daN	
Pull to Yield Motor	200,000	lb	90,000	daN	

Build Rate (degrees/100ft(30 m))				
Bend Settings (degrees)	Hole Sizes (in, mm)			
	5 7/8"	6 1/8"	6 1/4"	6 3/4"
	149 mm	156 mm	159 mm	171 mm
0.26	0.33	0.48	0.89	0.00
0.52	2.27	1.45	1.05	0.58
0.78	4.20	3.39	2.99	1.36
1.03	6.07	5.26	4.85	3.22
1.27	7.86	7.05	6.64	5.01
1.50	9.57	8.76	8.35	6.73
1.72	11.22	10.40	10.00	8.37
1.93	12.78	11.97	11.56	9.94
2.12	14.20	13.39	12.98	11.35
2.30	15.54	14.73	14.32	12.70
2.60	17.78	16.97	16.56	14.94
2.82	19.43	18.61	18.21	16.58
2.95	20.40	19.58	19.18	17.55
3.00	20.77	19.96	19.55	17.92

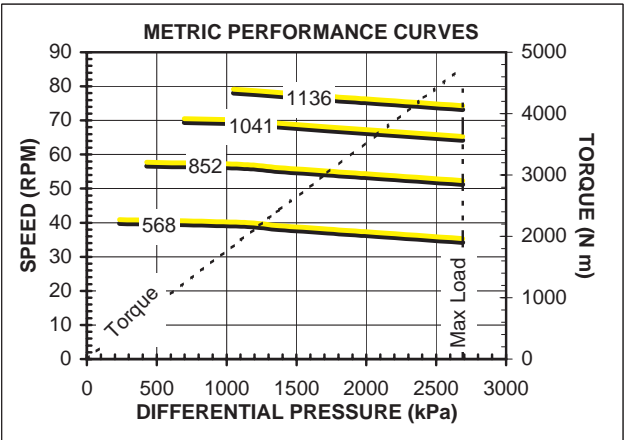
4 3/4" (121 mm) 7-8 2.6 Stage ESX



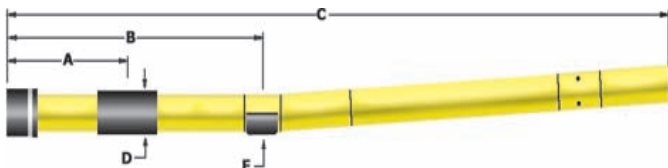
Maximum Pump Rate	300 gpm	1,140 Lpm
Revolutions per unit volume	0.263 rev/gal	0.070 rev/L
Pressure at full Load	390 psi	2,690 kPa
Torque at full load	3,500 ft lb	4,750 N m



Drilling Fluid Flow (GPM)	150	225	275	300
Pressure Drop Across Motor with No Load (off-bottom pressure) (PSI)	34	62	101	152
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (PSI)	356	328	289	238



Drilling Fluid Flow (L/min)	568	852	1041	1136
Pressure Drop Across Motor with No Load (off-bottom pressure) (kPa)	234	427	696	1048
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (kPa)	2455	2261	1993	1641



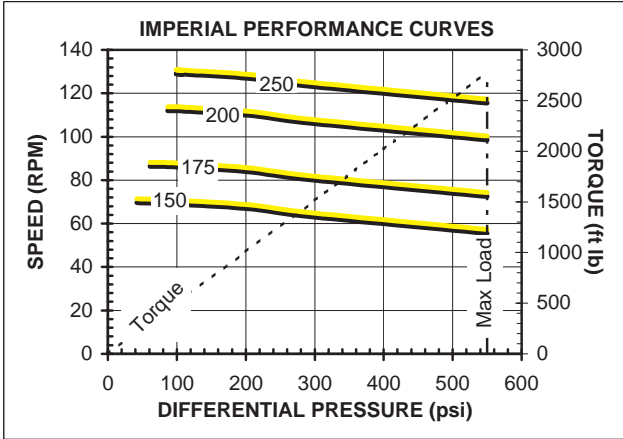
	Imperial		Metric	
A. Distance to stabilizer	18	inch	457	mm
B. Box to Bend	62	inch	1,575	mm
C. Overall Length	316	inch	8,026	mm
D. Thread Prot. Diameter	5.38	inch	137	mm
E. Kick Pad Diameter	5.25	inch	133	mm

Top Connection	AS PER REQUEST				
Bottom Connection	3 1/2" Reg		3 1/2" Reg		
Weight	1,078	lb	480	daN	
Maximum Flow Rate	250	gpm	0.95	m ³ /min	
Maximum Torque	2,960	ft-lb	4,020	N-m	
Maximum Power	65	hp	49	kW	
Maximum Weight on bit	Dynamic	43,000	lb	19,000	daN
	Static	118,000	lb	52,000	daN
Maximum Allowable Pull	118,000	lb	52,000	daN	
Pull to Yield Motor	200,000	lb	90,000	daN	

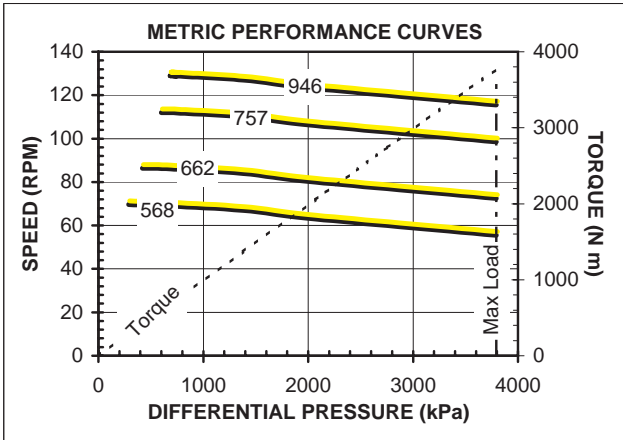
Build Rate (degrees/100ft(30 m))				
Bend Settings (degrees)	Hole Sizes (in, mm)			
	5 7/8"	6 1/8"	6 1/4"	6 3/4"
	149 mm	156 mm	159 mm	171 mm
0.26	0.47	0.46	0.93	0.00
0.52	2.70	1.76	1.30	0.58
0.78	4.93	3.99	3.53	1.65
1.03	7.07	6.14	5.67	3.80
1.27	9.13	8.19	7.73	5.86
1.50	11.10	10.17	9.70	7.83
1.72	12.99	12.02	11.59	9.71
1.93	14.79	13.86	13.39	11.52
2.12	16.42	15.49	15.02	13.15
2.30	17.97	17.03	16.56	14.69
2.60	20.54	19.31	19.14	17.27
2.82	22.43	21.50	21.03	19.16
2.95	23.55	22.61	22.15	20.27
3.00	23.98	23.04	22.58	20.70

4 3/4" (121 mm) 7-8 3.8 Stage

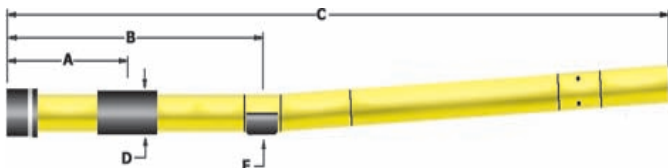
Maximum Pump Rate	250 gpm	950 Lpm
Revolutions per unit volume	0.560 rev/gal	0.148 rev/L
Pressure at full Load	570 psi	3,930 kPa
Torque at full load	2,960 ft lb	4,020 N m



Drilling Fluid Flow (GPM)	150	175	200	250
Pressure Drop Across Motor with No Load (off-bottom pressure) (PSI)	42	61	87	108
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (PSI)	508	489	463	442



Drilling Fluid Flow (L/min)	568	662	757	946
Pressure Drop Across Motor with No Load (off-bottom pressure) (kPa)	290	421	600	745
Maximum Allowable Differential Pressure (on-bottom - off-bottom pressure) (kPa)	3503	3372	3192	3047



	Imperial		Metric	
A. Distance to stabilizer	18	inch	457	mm
B. Box to Bend	62	inch	1,575	mm
C. Overall Length	358	inch	9101	mm
D. Thread Prot. Diameter	5.38	inch	137	mm
E. Kick Pad Diameter	5.25	inch	133	mm

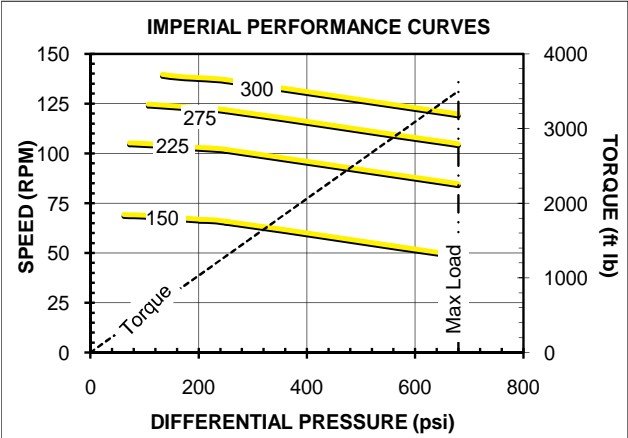
Top Connection	AS PER REQUEST				
Bottom Connection	3 1/2" Reg		3 1/2" Reg		
Weight	1,164	lb	516	daN	
Maximum Flow Rate	300	gpm	1.140	m ³ /min	
Maximum Torque	3,500	ft-lb	4,750	N-m	
Maximum Power	83	hp	62	kW	
Maximum Weight on bit	Dynamic	43,000	lb	19,000	daN
	Static	118,000	lb	52,000	daN
Maximum Allowable Pull	118,000	lb	52,000	daN	
Pull to Yield Motor	200,000	lb	90,000	daN	

Build Rate (degrees/100ft(30 m))				
Bend Settings (degrees)	Hole Sizes (in, mm)			
	5 7/8"	6 1/8"	6 1/4"	6 3/4"
	149 mm	156 mm	159 mm	171 mm
0.26	0.47	0.46	0.93	0.00
0.52	2.70	1.76	1.30	0.58
0.78	4.93	3.99	3.53	1.65
1.03	7.07	6.14	5.67	3.80
1.27	9.13	8.19	7.73	5.86
1.50	11.10	10.17	9.70	7.83
1.72	12.99	12.02	11.59	9.71
1.93	14.79	13.86	13.39	11.52
2.12	16.42	15.49	15.02	13.15
2.30	17.97	17.03	16.56	14.69
2.60	20.54	19.31	19.14	17.27
2.82	22.43	21.50	21.03	19.16
2.95	23.55	22.61	22.15	20.27
3.00	23.98	23.04	22.58	20.70

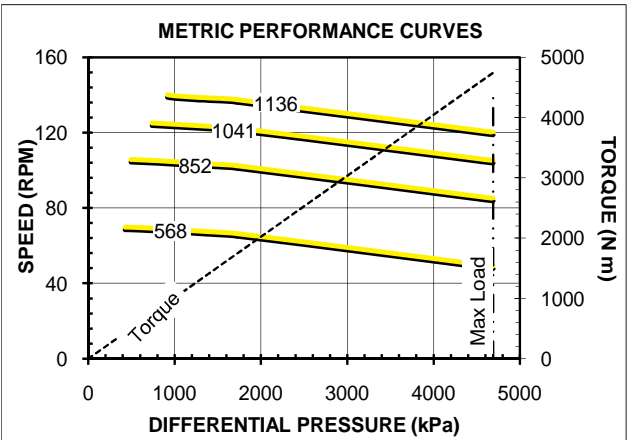
4 3/4" (121 mm) 7-8 4.5 SX Stage



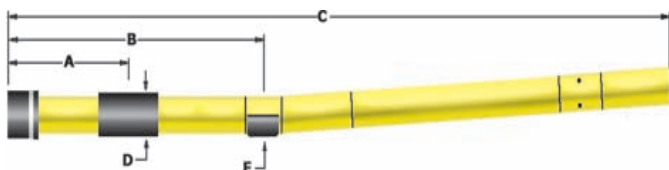
Maximum Pump Rate	300 gpm	1,140 Lpm
Revolutions per unit volume	0.463 rev/gal	0.122 rev/L
Pressure at full Load	680 psi	4,688 kPa
Torque at full load	3,500 ft lb	4,745 N m



Drilling Fluid Flow (GPM)	150	225	275	300
Pressure Drop Across Motor with No Load (off-bottom pressure) (PSI)	62	72	107	133
Maximum Allowable Differential Pressure (on-bottom minus off-bottom pressure)	618	608	573	547



Drilling Fluid Flow (L/min)	568	852	1041	1136
Pressure Drop Across Motor with No Load (off-bottom pressure) (kPa)	427	496	738	917
Maximum Allowable Differential Pressure (on-bottom minus off-bottom pressure)	4261	4192	3951	3771



	Imperial		Metric	
A. Distance to stabilizer	18	inch	457	mm
B. Box to Bend	62	inch	1,575	mm
C. Overall Length	358	inch	9101	mm
D. Thread Prot. Diameter	5.38	inch	137	mm
E. Kick Pad Diameter	5.25	inch	133	mm

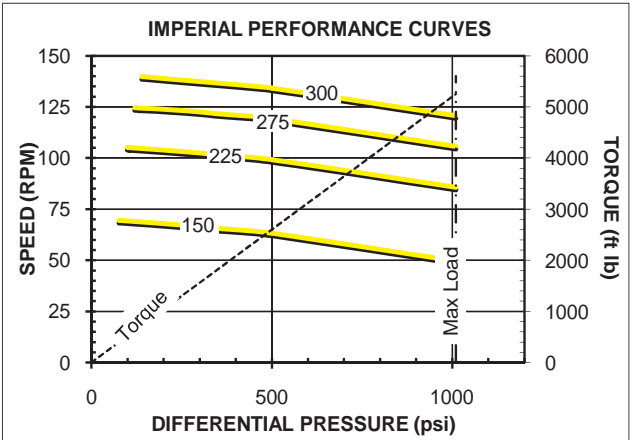
Top Connection	AS PER REQUEST				
Bottom Connection	3 1/2" Reg		3 1/2" Reg		
Weight	1,164	lb	516	daN	
Maximum Flow Rate	300	gpm	1.14	m ³ /min	
Maximum Torque	5,250	ft-lb	7,120	N-m	
Maximum Power	132	hp	98	kW	
Maximum Weight on bit	Dynamic	43,000	lb	19,000	daN
	Static	118,000	lb	52,000	daN
Maximum Allowable Pull	118,000	lb	52,000	daN	
Pull to Yield Motor	200,000	lb	90,000	daN	

Build Rate (degrees/100ft(30 m))				
Bend Settings (degrees)	Hole Sizes (in, mm)			
	5 7/8"	6 1/8"	6 1/4"	6 3/4"
	149 mm	156 mm	159 mm	171 mm
0.26	0.47	0.46	0.93	0.00
0.52	2.70	1.76	1.30	0.58
0.78	4.93	3.99	3.53	1.65
1.03	7.07	6.14	5.67	3.80
1.27	9.13	8.19	7.73	5.86
1.50	11.10	10.17	9.70	7.83
1.72	12.99	12.02	11.59	9.71
1.93	14.79	13.86	13.39	11.52
2.12	16.42	15.49	15.02	13.15
2.30	17.97	17.03	16.56	14.69
2.60	20.54	19.31	19.14	17.27
2.82	22.43	21.50	21.03	19.16
2.95	23.55	22.61	22.15	20.27
3.00	23.98	23.04	22.58	20.70

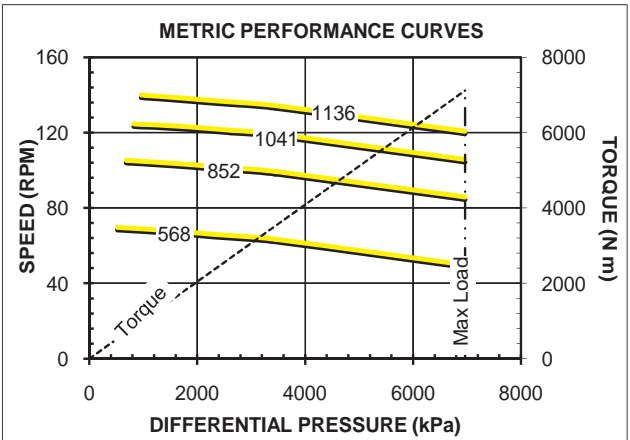
4 3/4" (121 mm) 7-8 4.5 SX HR Stage



Maximum Pump Rate	300 gpm	1,136 Lpm
Revolutions per unit volume	0.463 rev/gal	0.065 rev/L
Pressure at full Load	1,010 psi	6,964 kPa
Torque at full load	5,250 ft lb	7,118 N m



Drilling Fluid Flow (GPM)	150	225	275	300
Pressure Drop Across Motor with No Load (off-bottom pressure) (PSI)	76	105	120	140
Maximum Allowable Differential Pressure (on-bottom minus off-bottom pressure)	934	905	890	870



Drilling Fluid Flow (L/min)	568	852	1041	1136
Pressure Drop Across Motor with No Load (off-bottom pressure) (kPa)	524	724	827	965
Maximum Allowable Differential Pressure (on-bottom minus off-bottom pressure)	6440	6240	6136	5998

