

# 5.5 in (140mm) Bottom w/ 5 in (127mm) 7-8 Lobe 3.1 Stage HR

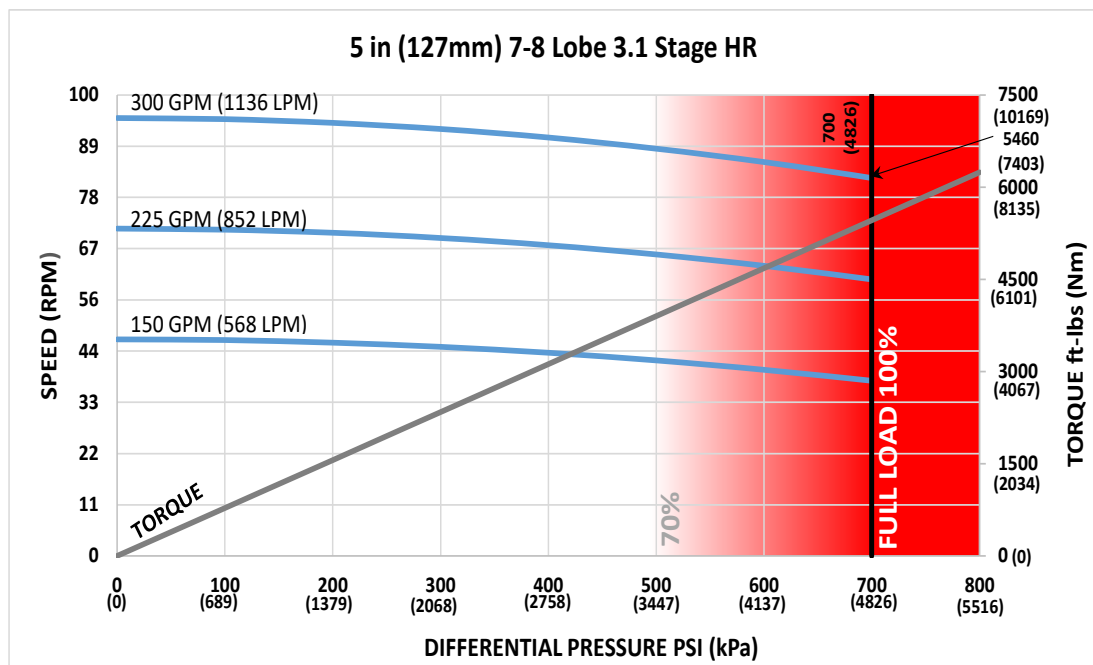
## 3.1 Stage HR SERIES 1



<b>Bit Size Range</b>	6-3/4 - 8-1/2 in	171 - 216 mm
<b>Bit Box Connection</b>	3-1/2 REGULAR	
<b>Dynamic Bearing Load On/Off Bottom</b>	82090 lbf	36500 daN
<b>Static Bearing Load On/Off Bottom</b>	289185 lbf	128600 daN
<b>Max. Overpull (For Re-run)</b>	243000 lbf	108100 daN
<b>Absolute Overpull</b>	405000 lbf	180200 daN
<b>Adjustable Makeup Torque</b>	13000 ft-lbs	17600 Nm
<b>Stab/Thread Protector Makeup Torque</b>	7000 ft-lbs	9500 Nm
<b>A = Bit to Stabilizer (Centre)</b>	15.8 in	0.4 m
<b>B = Bit to Bend</b>	Adjustable 57 in	1.45 m
	Fixed 46.6 in	1.18 m
<b>C = Overall (With Dump Sub)</b>	356.03 in	9.04 m
<b>Weight</b>	1525 lb	692 kg

<b>Lobe Configuration</b>	7-8 Lobe 3.1 Stage HR	
<b>Displacement (No Load)</b>	0.316 rev/gal	0.08 rev/l
<b>Max. Differential (Full Load)</b>	700 psi	4826 kPa
<b>Max. Torque</b>	5460 ft-lbs	7403 Nm
<b>Max. Power</b>	85 HP	64 kW

Flow Rate		Speed
GPM	LPM	RPM
150	568	38 - 47
225	852	60 - 71
300	1136	82 - 95



Possible damage may occur when motor is run higher than 70% of Maximum Differential Pressure.

### ADJUSTABLE BUILD RATE

Hole Size	SLICK				STABILIZED			
	6-3/4 (171mm)	7-1/4 (184mm)	7-7/8 (200mm)	8-1/2 (216mm)	6-3/4 (171mm)	7-1/4 (184mm)	7-7/8 (200mm)	8-1/2 (216mm)
<b>BEND ANGLE</b>	Degrees per 100 Feet (30m)				Degrees per 100 Feet (30m)			
0.39	0.6	-	-	-	2.3	2.7	3.1	-
0.78	3.4	1.9	-	-	4.7	5.1	5.5	5.9
1.15	6.0	4.5	2.7	0.8	7.0	7.3	7.7	8.1
1.50	8.5	7.0	5.1	3.3	9.1	9.5	9.9	10.3
1.83	10.8	9.3	7.5	5.6	11.2	11.5	11.9	12.3
2.12	12.8	11.4	9.5	7.6	12.9	13.3	13.7	14.1
2.38	14.7	13.2	11.3	9.5	14.7	14.9	15.3	15.7
2.60	16.2	14.8	12.9	11.0	16.2	16.2	16.6	17.0
2.77	17.4	16.0	14.1	12.2	17.4	17.3	17.7	18.1
2.90	18.4	16.9	15.0	13.2	18.4	18.0	18.5	18.9
2.97	18.9	17.4	15.5	13.7	18.9	18.5	18.9	19.3
3.00	19.1	17.6	15.7	13.9	19.1	18.7	19.1	19.5

Note: Stabilizers are 1/8" undergauge

### FBH BUILD RATE

Hole Size	SLICK				STABILIZED			
	6-3/4 (171mm)	7-1/4 (184mm)	7-7/8 (200mm)	8-1/2 (216mm)	6-3/4 (171mm)	7-1/4 (184mm)	7-7/8 (200mm)	8-1/2 (216mm)
<b>BEND ANGLE</b>	Degrees per 100 Feet (30m)				Degrees per 100 Feet (30m)			
1.25	6.2	4.5	2.3	0.1	7.9	8.2	8.6	9.0
1.50	8.0	6.2	4.0	1.8	9.5	9.8	10.2	10.6
1.75	9.8	8.0	5.8	3.6	11.1	11.4	11.8	12.2
2.00	11.5	9.8	7.6	5.4	12.7	13.0	13.4	13.8
2.25	13.3	11.5	9.3	7.1	14.3	14.6	15.0	15.4
2.50	15.0	13.3	11.1	8.9	15.9	16.2	16.6	17.0

This information is for reference only. Build rates are theoretical calculations using three-point geometry and new motor builds. Actual rate predictions will depend on formation characteristics, bit profiles, and WOB.

For custom motor configurations and build rates, please contact your DYNOMAX office.

**FISHING DIMENSIONS**

USC - IMPERIAL (Lengths, Diameters = in)  
SI - METRIC (Lengths = m, Diameters = mm)



EXTERNALS		USC	SI
END CAP	A	8.5	0.22
BEARING HOUSING	B	--	--
PISTON HOUSING	C	12.3	0.31
STABILIZER SHOULDER	D	25.7	0.65
KICK/FIXED HOUSING	E	37.8	0.96
BIT TO BEND (ADJUSTABLE)	F1	57.0	1.45
ADAPTOR HOUSING (ADJUSTABLE)	G1	70.0	1.78
BIT TO BEND (FIXED)	F2	46.6	1.18
ADAPTOR HOUSING (FIXED)	G2	56.3	1.43
STATOR START	H	86.9	2.21
STATOR END	I	324.9	8.25
OVERALL LENGTH	J	356.0	9.04
BIT BOX Ø	K	4.70	119.4
END CAP/BEARING HOUSING Ø	L	5.50	139.7
THREAD PROTECTOR Ø	M	6.00	152.4
PISTON HOUSING Ø	N	5.50	139.7
KICK/FIXED HOUSING Ø	O	5.50	139.7
PAD (ADJUSTABLE) Ø	P1	5.88	149.4
PAD (FIXED) Ø	P2	5.88	149.4
ADJUSTABLE MANDREL PIN Ø	Q	3.31	84.1
ADAPTOR HOUSING Ø	R	5.50	139.7
ADAPTOR PIN Ø	S	3.35	85.1
STATOR TUBE OUTER Ø	T	5.00	127.0
STATOR TUBE INNER Ø	U	3.75	95.3
ROTOR CATCH SUB BLADE Ø	V	5.25	133.4
ROTOR CATCH SUB Ø	W	5.00	127.0



INTERNALS		USC	SI
BIT BOX	A	7.9	0.20
THRUST SHOULDER	B	16.7	0.42
WASHPIPE START	C	20.2	0.51
HEX END	D	24.5	0.62
BEARING ASSEMBLY ADAPTOR	E	36.5	0.93
BAA CAP	F	49.0	1.24
ROTOR ADAPTOR CAP	G	80.8	2.05
ROTOR START	H	86.9	2.21
ROTOR END	I	315.9	8.02
CATCH STEM	J	327.8	8.33
BIT BOX Ø	K	4.70	119.4
MANDREL Ø	L	4.13	104.9
THRUST Ø	M	3.60	91.4
WASHPIPE LARGE Ø	N	4.38	111.3
WASHPIPE SMALL Ø	O	3.50	88.9
BEARING ASSEMBLY ADAPTOR Ø	P	3.90	99.1
DRIVESHAFT Ø	Q	2.16	54.9
ROTOR ADAPTOR Ø	R	3.90	99.1
ROTOR MAJOR DIA. Ø	S	3.10	78.6
ROTOR CATCH STEM Ø	T	2.13	54.0

This information is for reference only. Assemblies are displayed in an "Adjustable Configuration"

Rotor Catch and Rotor Catch Float Sub Lengths may vary based on configuration, and use of Dump Subs or combination Rotor Catch and Float Housings.

If any additional information is required, please contact your local DYNOMAX office.