


PCP OPERATION & COMPLETION RECOMMENDATIONS

PCM MOINEAU™ & PCM SLUGGER

keep it moving 

HYDRAULICS

	PCP Size	Setting depth (mMD)	Dog leg (°/100ft)	Min.	Recommended	Max.
Speed* (rpm)	2" 3/8 - 2" 7/8	< 1500	< 4	50	100-400	500
		> 1500	> 4	50	100-350	450
	3" 1/2 - 4"	< 1250	< 4	50	100-350	400
		> 1250	> 4	50	100-300	350
	5" - 6" 5/8	< 1000	< 4	50	100-300	350
		> 1000	> 4	50	100-250	300

* Min/max speed are PCM recommended values to ensure good run life of PCP system, but all pumps can be use in the range of 50-500RPM

		Min.	Recommended	Max.
Loading on head (%)	Elastomer 159, 194, 198, 205	-	0-75	90
	Elastomer 204	-	0-65	80
Friction losses vs total head (%)		-	0-30	90
Submergence (m)	with downhole level monitoring system	10	30 and above	-
	without	30	100 and above	-
GVF at pump (%)	PCM Moineau™	-	0-20	40
	PCM Slugger	-	0-70	90



Artificial Lift Solutions

PCM Moineau™ operation & completion recommendations
WELL GEOMETRY & COMPLETION

		Min	Recommended	Max
Pump setting depth MD (m)		-	0-1500	2 200
Dog leg above pump (°/100ft)	with sucker rods	-	0-6	12
	with continuous & hollow rods	-	0-10	16
Dog leg at pump depth (°/100ft)		-	0-3	6
Hole angle at pump depth (°)		-	0-80	90
Tubing & stator assembly radial clearance vs CGS ID (mm)		5	10 and above	-
Rotor radial clearance vs tubing ID (mm)		1	3 and above	-
Rod coupling radial clearance vs tubing ID (mm)		4	8 and above	-
Max (D rotor+4E; D rotor head+2E; CPLG+2E) radial clearance vs pup joint ID (mm)		2	6 and above	-
Rod centralizer contact load (kg)		-	0-50	75
Rod torque and stress load (%)		-	0-80	95
Well head flowing pressure (psi)		-	0-400	500
Well head static pressure (psi)		-	0-800	1 000
Temperature at surface	with standard sealing	-	0-80	120
	with HT sealing	-	0-180	260
Drivehead axial load (%)		-	0-80	100
Motor torque and power load (%)		-	0-80	90

ELASTOMER & ROTOR SIZE

		Min	Recommended	Max
Specific oil gravity		-	8-30	45
BTEX aromatics solvent content (% vol.)		-	0-2	8
Water cut (%)		-	0-100	-
Sand volume cut (% vol.)		-	0-10	60
CO ₂ content (% vol.)		-	0-3	8
H ₂ S content (% vol.)		-	0-3	8
Elastomer swelling (%)		-3	(-1)-3	8
Elastomer hardness variation (shore A)		-10	(-3)-3	10
Viscosity at pump intake		-	up to 3 000	12 000
Temperature at pump (°C)	Elastomer 159, 199	-	0-80	125
	Elastomer 194, 205, 210	-	0-50	70
	Elastomer 198	-	0-120	150
	Elastomer 204	-	0-60	80

PCM Moineau™ operation & completion recommendations

TUBING STRING COMPLETION



ITEM	REQUIREMENT	DESCRIPTION	COMMENTS
1		Tubing	Control radial clearance of tubing & stator assembly (especially Cross Overs) with Casing ID
2		Cross over	Control radial clearance of Cross Overs with Casing ID
3	Compulsory	Pup joint (min length = total space out + 2ft)	To avoid rotor head contact on tubing, PCM recommends to install a Pup Joint above Stator. Control radial clearance of Rotor Head (specially coupling) with Pup Joint ID. Pup Joint length should be equal to total space out value +2ft minimum, usually equal to 4ft or 6ft (shorter lengths are prohibited, longer lengths are ok providing that it guaranty 1 st rod centralizers will not be located inside pup joint)
4	Compulsory	Cross over	Control radial clearance of Cross Overs with Casing ID.
5	Compulsory	PCM Moineau™ or PCM Slugger (HRPCP) stator	
6	Compulsory	Tag bar (or top bushing)	Perforated plate should be preferred vs transversal pin to avoid rotor blockage in case of low space out. Minimum flowing area equal to tubing flowing area should be guaranteed. No side slot design to limit solid at intake.
7	Compulsory	Torque anchor	To limit vibration and risk of tubing back off, PCM highly recommends to install torque anchor.

PCM Moineau™ operation & completion recommendations

ROD STRING COMPLETION



ITEM	REQUIREMENT	DESCRIPTION	COMMENTS
1	Compulsory	Polished rod	
2	Compulsory	Polished rod coupling	Provide additional PR coupling as spare parts, for back up on field
3	Compulsory	Pony rod	As per space out requirement, but at least 1 pony rod in order to connect 1 x centralizer as close as possible to Polished Rod (but no centralizer directly connected to polished rod)
4	Compulsory	Rod centralizer #3	To limit drive head sealing wear, PCM recommend to install 1 x rod centralizer close to surface (but not directly on polished rod to avoid possible connection issues or damages on polished rod, but below a pony rod connected to polished rod)
5	Recommended	Sucker rods & centralizers or continuous rod	For sucker rod completion, at least 1 x Rod Centralizer every 10 x sucker rods should be installed along rod string. More centralizers may be installed depending on application : deviation, load, oil property, Tbg & Rod size,...
6	Recommended	Rod centralizer #2	A second rod centralizers above rotor and above a second pony rod, may be installed in order to absorb more eccentricity.
7	Recommended	Pony rod 12ft	
8	Compulsory	Rod centralizer #1	To properly absorb PCP eccentricity and so limit vibration and wear of PCP system, PCM recommends to install a Rod Centralizers above a 12ft (10ft mini) pony rod above rotor. Centralizer should never be installed directly above rotor.
9	Compulsory	Pony rod 12ft	To manage properly eccentricity of PCP and taking into account flexibility of rod, PCM recommends to install a 12ft pony rod above stator (10ft long pony rod mini).
10	Compulsory	Coupling sim hole	Full size CPLG can be ok but double check clearance vs PJ
11	Compulsory	Rotor	PCM Moineau™ or PCM Slugger HRPCP rotor