



Benefits

- Get more meters out of opener
 - No trips for worn out cutters
 - No bearings to wear out
 - No cutters to lose in hole
 - Better rate of penetration
 - Bi-directional without breaking off drill string
 - No having to switch openers to do formations changes (good in soft or hard formation)
- Custom sizes available upon request

Specifications

Tool Series	Pilot Hole	Opening Size	WOB (lbs)	RPM's	Number of Blades	Body OD (in)	Threads Box X Box
MRK-4	5-7/8"	12" - 18"	15000-20000	40-70	5	4-1/2"	2-7/8" IF
MRK-6	7-7/8"	14" - 20"	15000-20000	40-70	5	6-1/2"	4-1/2" IF
MRK-8	9-5/8"	18" - 24"	15000-20000	40-70	5	8"	6-5/8" REG
MRK-9	10-5/8"	24" - 36"	20000-25000	40-60	6	9"	6-5/8" REG
MRK-10	10-5/8"	36" - 48"	25000-35000	40-55	9	10"	6-5/8" REG

Note: The suggested weights and RPM's are only a recommended guide.

Weights and RPM's should be adjusted to maximum penetration rates.

They will vary with formation and rig power. It will also depend on the size of or step you are taking.





Opener runs that have been completed

Distance	Formation	Wear On PDC Blades	Tool Size	Rate of Penetration	Pilot Hole
1108 Meters	Shale	50%	20"	15 Meters per hour	12.25"
450 Meters	Shale	50%	20"	11 Meters per hour	12.25"
366 Meters	Shale	25%	30"	16 Meters per hour	12 1/4"
366 Meters	Shale	20%	36"	21 Meters per hour	30"
1420 Meters	Shale	60%	36"	15 Meters per hour	12 1/4"
547 Meters	Shale	15%	24"	28 Meters per hour	12.25"
547 Meters	Shale	20%	36"	19 Meters per hour	24"
486 Meters	Clay	10%	24"	28 Meters per hour	12 1/4"
610 Meters	Clay/Shale	25%	24"	10.5 Meters per hour	12.25"
610 Meters	Clay/Shale	75%	30"	19 Meters per hour	24"
820 Meters	Clay/Shale	40%	30"	12 Meters per hour	12.25"
1307 Meters	Clay/Shale	80%	18"	27 Meters per hour	12.25"
733 Meters	Clay/Shale	50%	18"	27 Meters per hour	12.25"
440 Meters	Clay/Shale	40%	24"	27 Meters per hour	18"
350 Meters	Clay/Shale	35%	24"	18 Meters per hour	12.25"
806 Meters	Clay/Shale	20%	20"	22 Meters per hour	12.25"
368 Meters	Clay/shale	10%	18"	30 Meters per hour	12.25"
564 Meters	Clay/Shale	25%	36"	20 Meters per hour	12.25"
498 Meters	Clay/Shale	30%	18"	30 Meters per hour	12.25"
635 Meters	Clay/Limestone	70%	24"	14 Meters per hour	12.25"
955 Meters	Clay/Limestone	70%	36"	13.5 Meters per hour	24"
955 Meters	Clay/Limestone	80%	48"	13.5 Meters per hour	36"
360 Meters	Clay/Sandstone	15%	18"	22 Meters per hour	9 7/8"
360 Meters	Clay/Sandstone	25%	24"	30 Meters per hour	18"
597 Meters	Sandstone	10%	12"	21 Meters per hour	6 1/4"
1132 Meters	Sandstone/Cobble	85%	24"	16 Meters per hour	12 1/4"
740 Meters	Shale/Sandstone	30%	24"	14 Meters per hour	12 1/4"
740 Meters	Shale/Sandstone	30%	30"	14 Meters per hour	24"
740 Meters	Shale/Sandstone	30%	36"	14 Meters per hour	24"
814 Meters	Shale/Sandstone	40%	24"	20 Meters per hour	12.25"
799 Meters	Shale/Limestone	35%	18"	23 Meters per hour	12.25"
700 Meters	Limestone/Cobble	90%	20"	10.5 Meters per hour	12.25"
1958 Meters	Tar Sands	75%	18"	22 Meters per hour	12 1/4"