

PING

OPTIMAL LAUNCH & SPIN (BALL SPEED, ANGLE OF ATTACK)

DRIVER BALL SPEED	180 mph/290 km/h	3.0° 3310 rpm	4.3° 3090 rpm	5.6° 2900 rpm	7.0° 2730 rpm	8.5° 2570 rpm	9.9° 2400 rpm	11.3° 2240 rpm	12.8° 2080 rpm	14.5° 1970 rpm	15.8° 1790 rpm	17.5° 1680 rpm
	170 mph/274 km/h	3.6° 3290 rpm	5.0° 3120 rpm	6.3° 2920 rpm	7.7° 2760 rpm	9.1° 2590 rpm	10.5° 2420 rpm	12.0° 2290 rpm	13.4° 2130 rpm	14.9° 1980 rpm	16.3° 1820 rpm	17.8° 1690 rpm
	160 mph/257 km/h	4.5° 3330 rpm	5.8° 3140 rpm	7.1° 2950 rpm	8.3° 2760 rpm	9.8° 2630 rpm	11.1° 2440 rpm	12.6° 2300 rpm	14.0° 2150 rpm	15.4° 2000 rpm	16.9° 1860 rpm	18.3° 1710 rpm
	150 mph/241 km/h	5.6° 3370 rpm	6.7° 3160 rpm	7.9° 2970 rpm	9.2° 2790 rpm	10.4° 2620 rpm	11.9° 2480 rpm	13.2° 2310 rpm	14.7° 2180 rpm	16.0° 2020 rpm	17.4° 1880 rpm	18.8° 1733 rpm
	140 mph/225 km/h	6.6° 3380 rpm	7.7° 3170 rpm	8.9° 2990 rpm	10.1° 2820 rpm	11.3° 2640 rpm	12.7° 2490 rpm	13.9° 2320 rpm	15.2° 2170 rpm	16.7° 2040 rpm	18.0° 1880 rpm	19.4° 1750 rpm
	130 mph/209 km/h	7.6° 3350 rpm	8.7° 3160 rpm	9.9° 3000 rpm	11.1° 2810 rpm	12.2° 2640 rpm	13.4° 2480 rpm	14.8° 2340 rpm	16.1° 2190 rpm	17.3° 2040 rpm	18.7° 1900 rpm	20.0° 1760 rpm
	120 mph/193 km/h	8.9° 3320 rpm	9.9° 3130 rpm	10.9° 2950 rpm	12.1° 2800 rpm	13.2° 2620 rpm	14.4° 2480 rpm	15.6° 2320 rpm	16.9° 2180 rpm	18.1° 2030 rpm	19.3° 1880 rpm	20.7° 1750 rpm
	110 mph/177 km/h	10.2° 3270 rpm	11.1° 3090 rpm	12.1° 2910 rpm	13.2° 2760 rpm	14.2° 2590 rpm	15.3° 2420 rpm	16.6° 2300 rpm	17.8° 2150 rpm	18.9° 2000 rpm	20.2° 1870 rpm	21.3° 1720 rpm
	100 mph/161 km/h	11.3° 3150 rpm	12.4° 3000 rpm	13.3° 2840 rpm	14.3° 2680 rpm	15.4° 2530 rpm	16.4° 2380 rpm	17.4° 2220 rpm	18.6° 2090 rpm	19.8° 1960 rpm	20.9° 1820 rpm	22.1° 1680 rpm
	ANGLE OF ATTACK		-10°	-8°	-6°	-4°	-2°	0°	2°	4°	6°	8°

LEGEND
325 yds/297 m
300 yds/274 m
275 yds/251 m
250 yds/229 m
200 yds/183 m
175 yds/160 m
150 yds/137 m

FIRM FAIRWAYS OR WINDY CONDITIONS

FASTER BALL SPEEDS (>155 mph/249 km/h)

Decrease launch angle by 0.5°-1°

Decrease spin by 150-250 rpm

LOWER BALL SPEEDS (<125 mph/201 km/h)

Decrease launch angle by 1.5°-3°

Decrease spin by 250-400 rpm

SOFT FAIRWAYS

FASTER BALL SPEEDS (>155 mph/249 km/h)

Increase launch angle by 0.5°-1°

Increase spin by 150-250 rpm

LOWER BALL SPEEDS (<125 mph/201 km/h)

Increase launch angle by 1.5°-3°

Increase spin by 250-400 rpm

For a given angle of attack and ball speed, the table provides a recommended launch angle and spin rate to optimize distance in standard conditions. In general, launch angles within 1° and spin rates within 300 rpm of the chart would be near optimal.

NOTE: The angle of attack measurements are based on a radar-based launch monitor which tracks the center of the clubhead's movement as it approaches the impact. For camera-based launch monitors, which measure the clubface's movement, the angle of attack measurements will be approximately 2 degrees higher. For example, for a +4 angle of attack measurement on a camera-based launch monitor, you should reference the +2 angle of attack column in the table.