

HBR Competition Engines

CWT

INITIAL SPIN

CWT

LEFT SIDE

2.899 Oz-Inch

RIGHT SIDE

1.726 Oz-Inch

| Weight | RPM | Radius | Force in lbs. | Frequency |
|--------|--------|--------|---------------|-----------|
| 23.486 | 1000 | 3.500 | 5.150 | 16.6 |
| 23.486 | 2000 | 3.500 | 20.598 | 33.3 |
| 23.486 | 3000 | 3.500 | 46.345 | 50.0 |
| 23.486 | 4000 | 3.500 | 82.392 | 66.6 |
| 23.486 | 5000 | 3.500 | 128.738 | 83.3 |
| 23.486 | 6000 | 3.500 | 185.383 | 100.0 |
| 23.486 | 7000 | 3.500 | 252.325 | 116.6 |
| 23.486 | 8000 | 3.500 | 329.568 | 133.2 |
| 23.486 | 9000 | 3.500 | 417.111 | 150.0 |
| 23.486 | 10,000 | 3.500 | 514.951 | 166.6 |

| Weight | RPM | Radius | Force in lbs. | Frequency |
|--------|--------|--------|---------------|-----------|
| 13.983 | 1000 | 3.500 | 3.066 | 16.6 |
| 13.983 | 2000 | 3.500 | 12.263 | 33.3 |
| 13.983 | 3000 | 3.500 | 27.592 | 50.0 |
| 13.983 | 4000 | 3.500 | 49.053 | 66.6 |
| 13.983 | 5000 | 3.500 | 76.645 | 83.3 |
| 13.983 | 6000 | 3.500 | 110.369 | 100.0 |
| 13.983 | 7000 | 3.500 | 150.224 | 116.6 |
| 13.983 | 8000 | 3.500 | 196.211 | 133.2 |
| 13.983 | 9000 | 3.500 | 248.331 | 150.0 |
| 13.983 | 10,000 | 3.500 | 306.580 | 166.6 |

Date Tested 4/17/2023

Target Tolerance 0.200 OzInch

CWT

FINAL SPIN

CWT

LEFT SIDE

0.059 Oz-Inch

RIGHT SIDE

0.175 Oz-Inch

| Weight | RPM | Radius | Force in lbs. | Frequency |
|--------|--------|--------|---------------|-----------|
| 0.481 | 1000 | 3.500 | 0.105 | 16.6 |
| 0.481 | 2000 | 3.500 | 0.422 | 33.3 |
| 0.481 | 3000 | 3.500 | 0.949 | 50.0 |
| 0.481 | 4000 | 3.500 | 1.687 | 66.6 |
| 0.481 | 5000 | 3.500 | 2.636 | 83.3 |
| 0.481 | 6000 | 3.500 | 3.796 | 100.0 |
| 0.481 | 7000 | 3.500 | 5.167 | 116.6 |
| 0.481 | 8000 | 3.500 | 6.749 | 133.2 |
| 0.481 | 9000 | 3.500 | 8.542 | 150.0 |
| 0.481 | 10,000 | 3.500 | 10.546 | 166.6 |

| Weight | RPM | Radius | Force in lbs. | Frequency |
|--------|--------|--------|---------------|-----------|
| 1.414 | 1000 | 3.500 | 0.310 | 16.6 |
| 1.414 | 2000 | 3.500 | 1.240 | 33.3 |
| 1.414 | 3000 | 3.500 | 2.790 | 50.0 |
| 1.414 | 4000 | 3.500 | 4.960 | 66.6 |
| 1.414 | 5000 | 3.500 | 7.750 | 83.3 |
| 1.414 | 6000 | 3.500 | 11.160 | 100.0 |
| 1.414 | 7000 | 3.500 | 15.191 | 116.6 |
| 1.414 | 8000 | 3.500 | 19.841 | 133.2 |
| 1.414 | 9000 | 3.500 | 25.111 | 150.0 |
| 1.414 | 10,000 | 3.500 | 31.001 | 166.6 |