OVERALL MOTORCYCLE COMPARISON

60mph Footpeg Vibration — Root Mean Square (RMS)

x–Axis

Motorcycle

1994 BMW K1100LT
1974 BMW R90S
1969 BSA ROCKET 3
1998 DUCATI ST2
2000 HARLEY-DAVIDSON FAT BOY
1978 HONDA CBX
1987 HONDA VFR700F2
1968 TRIUMPH TR6C
1959 VELOCETTE VENOM

Units of Gravity (G)

y–Axis

Motorcycle

1994 BMW K1100LT
1974 BMW R90S
1969 BSA ROCKET 3
1998 DUCATI ST2
2000 HARLEY-DAVIDSON FAT BOY
1978 HONDA CBX
1987 HONDA VFR700F2
1968 TRIUMPH TR6C
1959 VELOCETTE VENOM

Units of Gravity (G)

z–Axis

Motorcycle

1994 BMW K1100LT
1974 BMW R90S
1969 BSA ROCKET 3
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Units of Gravity (G)
It’s important, in evaluating our results, to understand how the vibration forces were gathered by the accelerometers. For example, the transducers measured vibration with three axes of reference—$x$, $y$, $z$—aligned thus:

**HANDLEBAR**

$x$-axis: perpendicular to handlebar (+ points backward)

$y$-axis: perpendicular to handlebar (+ points upward)

$z$-axis: parallel to handlebar (+ points left)

**SEAT**

$x$-axis: perpendicular to bike longitudinal axis (+ points left)

$y$-axis: parallel to bike longitudinal axis (+ points backward)

$z$-axis: perpendicular to bike longitudinal axis (+ points upward)

**FOOTPEG**

$x$-axis: parallel to bike longitudinal axis (+ points forward)

$y$-axis: perpendicular to bike longitudinal axis (+ points right)

$z$-axis: perpendicular to bike longitudinal axis (+ points upward)