

ADVANTAGES & BENEFITS

OF GRADALL STANDARD TILT VS. CONVENTIONAL TILT ATTACHMENT

Conventional excavators significantly reduce bucket breakout force capability when they use a tilt attachment mechanism. Use the following formula to calculate the percentage of breakout force reduction based on measurements of the attachment.

FORMULA:

A = Bucket pin to tip radius
 B = Bucket pin to tip radius plus tilt mechanism

$$\frac{(B-A) \times 100}{B} = \% \text{ LOSS OF BUCKET BREAKOUT}$$

Tilt mechanism = 18" from pin to pin



examples:

CAT M318 WITH TILT ATTACHMENT

Published bucket breakout force = 25,650 lb

A [Bucket pin to tip radius] = **53"**

B [Bucket pin to tip radius plus tilt mechanism] = **71"**

$$\frac{(71-53) \times 100}{71} = 25.4\% \times 25,650 \text{ lb} = 6,515 \text{ lb}$$

25,650 lb - 6,515 lb = **19,135 lb actual force**

KOMATSU PW 170 WITH TILT ATTACHMENT

Published bucket breakout force = 23,038 lb
 Power max = 25,413 lb

A [Bucket pin to tip radius] = **54"**

B [Bucket pin to tip radius plus tilt mechanism] = **72"**

$$\frac{(72-54) \times 100}{72} = 25\% \times 23,038 \text{ lb} = 5,960 \text{ lb}$$

23,038 lb - 5,960 lb = **17,078 actual force**

POWER MAX = 25% x 25,413 lb = 6,353 lb
 25,413 lb - 6,353 lb = **19,060 lb actual force**

VOLVO EW 170 WITH TILT ATTACHMENT

Published bucket breakout force = 23,370 lb
 Power Boost = 25,350 lb

A [Bucket pin to tip radius] = **56"**

B [Bucket pin to tip radius plus tilt mechanism] = **74"**

$$\frac{(74-56) \times 100}{74} = 24.3\% \times 23,370 \text{ lb} = 5,679 \text{ lb}$$

23,370 lb - 5,679 lb = **17,691 actual force**

POWER BOOST = 24.3% x 25,350 lb = 6,160 lb
 25,350 lb - 6,160 lb = **19,190 lb actual force**