

ADVANTAGES & BENEFITS

OF GRADALL STANDARD TILT AND QUICK CHANGE DESIGN VS. CONVENTIONAL TILT AND QUICK CHANGE ATTACHMENTS

There is a considerable reduction in bucket breakout forces with conventional excavators that utilize tilt quick coupler and tilt attachment mechanisms. Here is a formula to calculate that loss of breakout force:

FORMULA:

A=Pin to tip radius

B=Pin to tip radius plus a quick coupler and tilt mechanism

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

Quick coupler = 12" pin to pin



example:

VOLVO EW 170 WITH QUICK COUPLER AND TILT MECHANISM

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] = **86"**

$$\frac{(86-56) \times 100}{86} = 34.9\% \times 23,370 \text{ lb} = 8,156 \text{ lb}$$

23,370 lb - 8,156 lb = **15,214 lb actual force**

POWER BOOST = 34.9% x 25,350 lb = 8,847 lb
25,350 lb - 8,847 lb = **16,503 lb actual force**

