

445.

## Edwin Hall Twist

We have received a report from a UK registered inspection body that during the inspection of an Edwin Hall Twist, movement was found around the main drive pinion and both brake pinions. Removing the centre cover plates and rocking the ride back and forth can detect this movement. The movement in the drive pinion was easily identified as sheared bolts as the bolts are accessible. However, the brake pinion bolts are not. To investigate the movement around the brake pinions the ride centre has to be removed. Once removed it was discovered that the bolts holding the brake pinions in place had also sheared.

It is worth noting that this ride shares similar design features with the Eli Bridge Scrambler.

As the pinions are meshed with both an inner and outer toothed ring, failure of the pinion mounting can cause it to move and jam the ride. Should this happen when the ride is at full speed the potential sudden stop could cause severe structural damage to the ride and impact injures to the public.

Please see accompanying photographs.



The centre needs to be removed to gain access to the brake pinion bolts.



The missing bolts that have sheared on the brake pinions.



Above can be seen the six Allan key studs securing the gearbox and drive pinion. They had all sheared and could be lifted out by hand.





Replaced bolts.



Two additional steel plates (angle steel) have been welded into the chassis to give additional support to the gearbox against the twisting movements created during ride acceleration.