

# HOW TO:

## R & R [Remove & Replace]

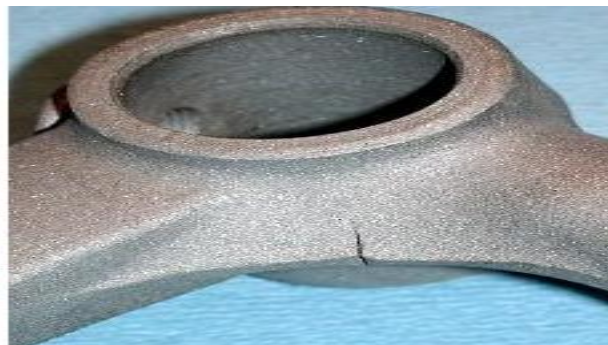
### WW2 Jeep Bell Crank pin easily

*Gindi (echelon1 on G503) 2015 April 2nd*



Notice the difference in the shaft slot size/depth....original v/s repro. This is why some pins are mushroomed & outside the axle housing receiver because they do not fit properly as intended.

Worn bell crank shaft & bearings on old tired vehicles can contribute to wandering steering plus add another dimension to the 'death wobble syndrome' generally caused by king pin swivel bearings & other loose steering related components.



When the bell crank is off check carefully for cracks that they are renowned for, replace as needed. There was an official modification the Australian Army used to rectify the issue. Some welders are better than others I guess.



If a worn bell crank shaft needs replacing, they are not easy to remove using the TM method of driving out the tapered [with a flat that engages the flat on the bell crank pin] lock pin toward the left front wheel.

It is recommended on a rebuild where the differential carrier is out that then is the best time to remove the pin if the bell crank shaft is worn. SO THINK AHEAD, then you can get a good swing on a real hammer & drift or better still use an air hammer.

Otherwise there is little room to manoeuvre so I came up with a fool proof easy way to remove this pin. Don't forget this method can be used in many other places to remove the irremovable.

After setting the front LH axle on a stand remove the LHF wheel.

Clean the end of the bell crank lock pin & flatten using an angle grinder if any pin is outside the bell crank. This sometimes happens when the shaft pin groove is not deep enough when the pin is installed [repros?].



Centre pop the pin if @ all possible, it will save you grief.

I used metric drill sizes 4mm then 6.8mm next tap 8mm or M8

The pin is 0.375" [3/8"] so you need to drill straight into & right through the pin & ONLY THE PIN using a Size F drill bit for a 0.3125" [5/16"] NC thread



Once the hole is drilled, start tapping the thread.

Be very careful not to break the tap & use lubricant.

2 or 3 full turns in then 1 turn back repeatedly until tapped right through.

If the tap feels too tight, it is! So clear the swarf & check you are not trying to thread the hard shaft before continuing.

If possible first use a taper then a plug tap.



Next get a **grade 8 or better bolt & nut.** NO SOFT STUFF

The bolt should be fully threaded & should be long enough to screw right through the old now threaded pin with about a pin length longer. So you need about a 2 - 2.5" long bolt.

Now we need a spacer that has an ID a little more than the pin hole. An old nut like I used is more than adequate. Shave off one end of the nut/spacer so that it matches the taper of the axle housing attaching bracket so you are getting a good straight pull on the pin you are removing.



Set up like above with the bolt thread full engaged in the now threaded tapered pin. Then screw the bolt's grade 8 nut in a clockwise, off the bolt direction, while holding the bolt head, if needed.

This will pull the tapered pin out & once a little bit is achieved, the whole lot is very loose & will fall out. If very tight load up the nut so as to not start stripping the thread then give the bolt head a SHOCK hit [not an all out whack] with a 2# hammer.



This pin broke in 2 pieces so I had 2 goes @ it, but a slightly longer grade 8 bolt/nut may have alleviated this.

### REPLACEMENT:

Clean all parts including the axle bracket & its tapered pin hole.

Make sure the new shaft is going to be a good tight fit in the axle mount.

A little loose? Consider the right Loctite product perhaps 609 620 or 660 to take up the slack.



Check & ensure the new pin fits in the shaft slot deep enough before assembly.

Fit the shaft so the flat is aligned & parallel with the pin bore & knock the pin home tightly in place.

Assemble the bell crank in the correct sequence: tighten the holding nut then fit the split/cotter pin.

Once fitted there should be no up & down movement or 'rocking' play on the bell crank extremes.

Never use heat to try solving this problem, as it will not help you when both parts are heated equally.

But more importantly:

**NO STEERING PARTS SHOULD BE HEATED, PERIOD for SAFETY RELATED REASONS.**



Bubba @ work in an earlier 2007 thread

Keep your steering [& brakes] healthy & that will help us all stay on the straight & narrow,

*Gindi & JR*