

## O&K Diagnostics – A list of things to check if you are having problems getting your chassis running.

- Motor
  - Is motor mechanically or electrically damaged? (consider replacement)
    - Excessive end play in shaft (more than 0.5mm)
    - Runs unevenly or very slowly when unloaded
    - Runs much faster one way than the other when unloaded
    - Does not always start or starts only by 'twiddling' shaft
  - Is motor hinge free moving but not too sloppy?
    - Ease or tighten hinges
  - Is motor loose between guides but not too sloppy?
    - Slightly open out or close up the motor guides.
- Friction drive
  - Is motor spring tension adequate without being excessive?
    - Adjust spring
      - Fold section between bracket and bend horizontal
      - Fold bend so free end is flat on motor whilst motor shaft adapter is on friction wheel
      - Fold up section between bracket and bend to force free end down on motor, keeping this central.
      - Check motor shaft adapter is sprung lightly against friction wheel.
  - Does shaft adapter run in continuous contact with friction wheel?
    - Look for daylight between shaft adapter and friction wheel when running at full speed.
    - Check concentricity of shaft adapter and consider replacing
  - Is O ring damaged? Consider replacement
  - Is O ring contaminated with oil or grease? Clean with lighter fluid on pipe cleaner
  - Is O ring slipping on brass centre? Replace O ring or glue with epoxy
  - Is brass centre slipping on lay shaft? Fix with thread lock
  - Is end play on lay shaft excessive so friction wheel catches on frames? Reduce by bending front bracket
  - Is lay shaft end play zero or holes in chassis too small so shaft is tight? Bend front bracket or ease holes.
- Worm drives
  - Is lay shaft position too high (intermittent jamming as worm gear slips over worm thread)? Lower lay shaft
  - Is lay shaft too low (permanent lock up of worm to worm gear or tight spot because of slightly eccentric worm gear on wheel shaft) ? Raise lay shaft
  - Are worms or worm gears damaged? Check for melted worm gears and consider replacement
- Wheels
  - Wobbly wheels
    - Check insulating bush fitted correctly (consider replacing insulated wheel)
    - Check pickup is not jamming on flange with slight wobble (causes uneven running).
  - Are wheelsets free running
    - Check each wheel axle is free in frames (work side to side). Ease axles holes if necessary.
    - Check axle to gear adapter allows slight side to side movement. Open out frames slightly if necessary.
- Fit to body
  - Chassis frame
    - Check length of chassis
      - Should be <27mm, if not consider adjusting cross pieces.
      - File ends of chassis flush
    - Check width of chassis
      - Should be <13mm
      - File sides of cross pieces
      - File outside corners of cross pieces
    - Cross pieces should sit flat on lower side of running plate
  - Wheel axles
    - Check fit between cosmetic frames; file more off points if necessary.
  - Motor Position
    - Front to back should have around 0.5mm of movement when mounted in body
    - Adjust motor horizontal position by bending lower hinge bracket backwards or forwards.
    - Check vertical position against side elevation diagram.
    - Adjust vertical position by increasing or decreasing curl on lower hinge.
    - Check motor spring is not bent up too far and interfering on body. Re-adjust if necessary (see 'Friction Drive' section).
    - Check shaft adapter is not catching on body. Ease gearbox/sandbox casting if necessary

Replacement parts are available from [NigellLawton009@fsmail.net](mailto:NigellLawton009@fsmail.net). Please email me for details. For small parts I ask only that you cover P&P/S&H.