

Kohler Troubleshooting

Engine Will Not Crank

- Safety switches on unit malfunctioning
- Improper ground
- Loose battery connections
- Drive belt wedged between idler pulley or guide
- Transmission tight or locked up
- Key switch or wire harness improperly connected
- Blown diodes in system
- Positive lead on starter solenoid interfering with solenoid – terminal on solenoid
- Starting battery low on charge or not charged
- PTO clutch locked up
- Starter or solenoid malfunction or starter pinion stuck
- No current supplied to starter
- Starting leads from battery reversed
- Key switch malfunction
- Wire harness fuse blown
- Starting system cable connectors loose/corroded or worn
- Wired incorrectly
- Compression release inoperative
- Engine seized up
- Combustion chamber flooded with fuel or oil

Engine Cranks but will not start

- Fuel turned off or out of fuel
- Carb fuel solenoid inoperable
- Not firing at plug – bad coil
- Safety switches not working on unit
- Transmission in gear or neutral switch defective
- PTO clutch switch on
- Engine flooded
- Cranks too slow
- Choke is not closing all the way
- Fuel filter or fuel line clogged
- Plug wire loose or not connected
- Water in fuel
- Low or no compression
- Engine or unit improperly wired
- Fuel hose kinked or pinched
- Wire harness connections loose

- Diode burned in harness
- Low power going to spark advance module

Engine Starts –will not accelerate or run at idle

- Engine not warmed up
- Low idle RPM set too low –check spec book
- Low idle fuel mixture set too lean
- Running out of fuel
- Parasitic load on PTO (hydro pump, belts, etc)
- Bad fuel, old fuel, water in fuel
- Governor set improperly – linkages, etc.

Engine runs/Backfires on full throttle

- Throttle cable/choke improperly set
- Blown fuse in unit control box
- Safety switches malfunctioning
- Carb fuel solenoid malfunctioning
- Fuel mixture set too rich or too lean
- Water in fuel bad fuel
- Foreign material in carb
- Valves hanging up or sticking
- Ignition out of time – sheared flywheel key
- Gear timing incorrect

Engine Runs – stops on high RPM – no load

- Out of fuel – fuel cap not breathing
- Very low or poor lubrication – engine seizes or starts to seize
- Carb solenoid malfunction
- Safety switches malfunctioning
- Key switch malfunctioning
- Spark plug lead loose or disconnected
- Wiring connections losing contact or shorting

Engine will not hot restart

- Battery cables reversed causing stator to short out
- Defective regulator or rectifier causing stator to short out
- Defective ignition module(s)
- Vapor lock (fuel) pump - sags in fuel line – fuel cap not breathing
- Carb solenoid malfunctioning
- Low oil pressure – unhook low oil switch if used

Not able to obtain top RPM no load

- Throttle cable not traveling far enough
- Choke not opening all the way
- Need engine warm up 3-5 minutes
- Fuel restriction – filter – fuel pump – fuel lines – fuel tank
- Drive system binding
- Foreign material in carb
- Engine timing
- Gov adjustment and linkages
- Gov hung up internally

Backfiring at shut down

- Carbs with solenoids must be shut down at ½ to ¾ throttle
- Carbs without solenoids must run at idle for 2 to 3 minutes

Cold Starting Engines

- Full choke (all seasons)
- May need choke assist until engine is warmed up
- Warm up time 3 to 5 minutes before putting under a load
- On units with larger decks you may need choke assist until engaged

Service Tips and References from Update Books

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|---------------------------------------------------|------------------|----------|
| • EFI – water issues | 2003-2004 | pg 5 |
| • EFI – new rectifier regulator | parts bulletin | 236 |
| • EFI – OEM Issues | 2003-2004 | pg 8-16 |
| • Command Twin camshaft Lobe wear and break in | 2003-2004 | pg 21 |
| • Battery recommendations | 2003-2004 | pg 23 |
| • OHC conversion to CH Walker/Grasshopper | 2003-2004 | pg 24-25 |
| • Damaged main bearings (Electric Clutch/Stators) | service bulletin | 240 |
| • Command singles – adjustable valve trains | 2003-2004 | pg 29-33 |
| • Testing solenoids shift starters | service bulletin | 266 |
| • Metal to plastic fuel tank conversion | 2003-2004 | pg 47 |
| • New style fuel pump CV singles | 2003-2004 | pg 50 |
| • New Engine ID numbers | 2003-2004 | pg 53-55 |
| • Charging system review | 2003-2004 | pg 61-62 |
| • Carb service kits | 2003-2004 | pg 63 |
| • Oil pump change | 2002-2003 | pg 19 |
| • Solenoid starter change | 2002-2003 | pg 20 |
| • Cylinder bore change – command 25 | 2002-2003 | pg 21 |

- Air separator kit – twin CV – lifter noise 2002-2003 pg 21
- Smart spark troubleshooting service bulletin 253
- Crankcase sealant recommendations service bulletin 252
- Command twin product improvements 2002-2003 pg 31
- Command singles – new style push rods 2002-2003 pg 33
- Testing ignition modules secondary resistance 2002-2003 pg 36
- Ignition switch configuration/wiring 2001-2002 pg 18
- CV twin – breather reed failures service bulletin 258
- Dipstick and tube change – CH and TH parts bulletin 227
- Certified schools to do EETC/OPEESA certification 2001-2002 pg 29-31
- CV16 – wiring diagram – smart spark 2000-2001 pg 16
- Splined crankshaft information service bulletin 221
- Command twin – change from 6 to 8 mm gov cross shaft service bulletin 257
- Command twin – shortblocks with new 8mm cross shaft 2000-2001 pg 26-28
- Command twin diode failures – electrical harness 1999-2000 pg 23
- Broken teeth on camshaft/crankshaft 1999-2000 pg 31
- CV25 – oil pan gasket info 1999-2000 pg 32
- Air cleaner change TH16-18 1999-2000 pg 41
- Command 25hp – head gasket leakage service bulletin 243
- Pinning gov shaft – KT – M18-20 – MV16-20 service bulletin 246
- Use of oversize cylinders and pistons – new production parts bulletin 217