



GreenMech SafeTrak 19-28 Mk2 buying guide by Ashley Stevens of GA Groundcare Ltd 30/4/2021

I have chosen to write this guide to help aid the purchase of used SafeTrak 19-28 woodchippers after seeing several customers buy machines which then require extensive reworking, often in our workshops here in Wiltshire. I would like to make note I take no responsibility in the machine which you do decide to purchase.

The SafeTrak 19-28 Mk2 complete with Kubota V2203 engine is a very well put together and strong machine. However, the railway environment offers some of the most challenging conditions and it is always ex rail woodchippers that have had the hardest life. Machines are used all year around, often hidden away trackside overnight in the elements and then asked to do another full day chipping the following day. Sometimes for months on end without access to carry out daily or weekly maintenance such as blowing the coolant radiator out properly with an airline.

I have broken the machine down into a handful of key sections.

Engine

The Kubota V2203 4 cylinder normally aspirated diesel is widely regarded as a brilliant engine, which if serviced regularly can easily clock thousands of hours. I have first-hand witnessed the original factory grey Kubota oil filter still fitted with the clock reading over 500 hours! The first service is due at 50 hours and replacement Kubota oil filters are white. The coolant radiator will attract / suck in dust and this needs meticulously cleaning out regularly with an airline throughout the whole core. A backpack or handheld blower is of zero use here. Failing to blow out the radiator properly will lead to blocking and subsequent overheating of the engine. Imagine cutting a cardboard template out and blocking the front of your pick-ups radiator and driving it all day everyday...

Overheating of the engine will glaze the piston bores and the engine will lose compression over time. Kubota stipulate in their handbook the minimal serviceable allowance is 327psi. A good healthy engine should be in the region of 450 psi and all bores within 10% of each other. Usually if overheated the inner middle two bores suffer the worst. Really anything less than 350psi is bad news.

For reference we have had four SafeTrak 19-28 chippers in our workshops over the past year which have all suffered long periods over overheating due to blocked radiators. Overheating can cause the cylinder head to crack, glazing of the bores amongst other issues such as burning the injector tips. The only remedy for an overheated engine is a full strip down and rebuild. We can usually offer an engine on a service exchange basis.

Overheated engines can be hard to start from cold whilst pumping smoke but usually start ok when hot. If the cylinder head is cracked compression gasses can enter the coolant system and pressurise, sometimes you will be able to see compression gasses creating bubbles in the coolant with the radiator cap removed when running (do not open rad cap with engine warm). Overheated engines will usually be slow to rev up and a keen ear can tell they “just don’t sound right”



Picture of service exchange engine in our stores

Track base and variable leg system

The patented variable leg system is a cross “X” leg design. Inside each boom is a hydraulic ram to extend the legs outwards and back inwards. There is greaseable wear pads which are located on the chassis. These are often out of adjustment and can be spotted visually as the machine will sit nose down towards the operator’s platform. Adjusting the wear pads can be difficult if the bolts are seized due to lack of adjustment throughout the machine’s life. The machine needs to physically be in the air with the ability to have the weight off both tracks on a flat, hard surface. The simplest way to achieve this is by having 4x large correctly rated axle stands. Extend the legs outwards, place an axle stand at each corner then bring the legs inwards slowly, making sure the axle stands maintain a good position. With the weight off the track legs the wear pads can be adjusted up using a combination of a 24mm spanner and 24mm socket with breaker bar. Adjust the wear pads up until physical play is removed from the leg boom and then lock off the backing nuts.

Due to the environment the tracks work in, the bearings in the track idler wheels are often overlooked and worn. The tracks can be slackened by using a 27mm spanner on the tensioning grease point and idler wheels checked for rough / worn bearings. It is possible to rebuild the idler wheels with new bearings if the centre shafts are serviceable.

Feed rollers, anvils, blades and flywheel

It is common for these components to deal with foreign objects. Check over all areas as thoroughly as possible. The flywheel should be in good condition with no visible cracks or damage, remove blades and check blade pockets for signs of damage. There is a long threaded M16 bolt which is used to slacken the flywheel drive belts. Drive belts need to be slackened to check for play in the bearings. A lever bar down between the flywheel housing and flywheel is the best way to check for any play / end float. It is important the rear flywheel bearing gets plenty of grease. There is no physical rear seal on this bearing, it would not last 5 minutes if there was due to the location of the bearing. The grease plays an important part in both keeping the debris out of the bearing area and keeping the bearing well lubricated. This bearing will take some 100+ pumps of grease if empty until grease can be seen coming out of the housing area.

There should also be a strip of metal on the upper flywheel housing to stop material discharging before it is processed, check this is present. It is not a huge job to fabricate and weld in a replacement piece, but it does make a difference! Check for damage around the feed roller box and feed rollers themselves, this is straight forward to do visually. Each feed roller costs around £340 ex vat so something to bear in mind if they have seen a lot of action.

Anvils should be a sharp edge and not rounded, damaged or dull. It is also possible for them to crack if foreign objects have entered the machine. Often this is unnoticed until an anvil turn is required. Usually resulting with the anvil dropping out in two!

Below is a picture of the upper feed roller pivot arm. There is a long large pin that goes through the pivot arm and into the receiving socket welded on the roller box. The large pin should be a tight fit into the socket. If the pin is not a tight fit, then it should be replaced directly. If the new pin does not fit tight then the socket is worn.

A worn pin and/or socket will lead to the long M16 x 240mm high tensile bolt snapping off leaving a proportion of the bolt stuck in socket. This can often be a challenge to remove.

The socket in this picture is worn, an additional bolt has been added to pinch the pin to help stop any twisting which leads to the M16 x 240mm bolt snapping. Simply drilling and tapping an M12 thread in the socket is an easy solution. Adding two clamping bolts is even better to help clamp the pin evenly.



Discharge chute

Later models from around 2017 have round discharge chutes as standard. The square chutes do not discharge material as well, especially if wet. This is more due to the radius than the physical shape itself. The square chute has a tight spot on the “neck” area whereas the round chute has a nice sweeping curve. Round chute upgrades can be purchased from any GreenMech dealer and are a simple retro fit.

Electrics and hydraulics

The Mk2 has an electric throttle which only operates in chip mode. There is a manual cable throttle for tracking so the operator can have better control over tricky ground at lower revs. If you flip the toggle switch from chip to track the engine revs will drop to wherever the hand throttle has been left.

The variable track legs are individually operated by a rocker switch near the forward / reverse spool levers and only work when in track mode.

The feed rollers are controlled by an electro-hydraulic system with automatic stress control, on older Mk2 models even though reverse is on the stop bar, the linkage still operated a roller switch which in turn activates the hydraulic valve block. The latest SafeTrak models with the floating bar have blue reverse buttons on the infeed both sides and green for feed.

The forward / reverse valve block is mounted under the hydraulic tank, check for hydraulic leaks in this area. Also, as the forward coil is 90% doing the work, check for fatigue / cracking / overheating of the forward coil. It is now possible to replace this coil on its own, but it can be difficult to remove from the hydraulic valve shaft. From factory there is a pair of extra tracking pump belts clamped onto the engine area. Check if these belts are present and if not, fit a spare pair of belts. They may just get you out of trouble one day.

Water can find its way into anywhere, especially if the machine is left out in the elements. There is a harness plug by your right knee when stood on the operator’s platform, it is worth checking this plug for water if the machine is doing strange things. There is a couple of large harness plugs by the battery and another plug in the infeed for the hopper switches / buttons.

The main fuse box is in the battery compartment area. The main power fuse is a 40amp fuse, on high hour machines it has been known for the fuse to lose connection in the fuse box momentarily and the machine will cut out, often with the ability to restart it straight away again.

The stress control system is an alternator sensed system so tensioned flywheel belts and alternator belt is critical. You can test the stress control operation without wood by using the throttle to quickly power down the engine and then power up again. Max flywheel rpm is in the region of 1440/1450rpm.

Fuel system

It is common to find all sorts of debris in fuel tanks which can lead to many breakdowns. Our most common call out is fuel related. It is worth flushing the tank out with diesel, sieve it back in through a fine mesh filter several times until the tank is free of debris. All machines now come with in line non return valves, these look like tiny metal fuel filters. I believe they were standard from about 2014. These were fitted to stop fuel draining back from the engine to the fuel tank overnight. If your machine struggles to fire up check the in-line non return valves are fitted.

Spares

It is worth keeping a few essential spares either with the machine or in a vehicle. I recommend the following spares.

- Set of three flywheel belts
- Set of two hydraulic pump belts
- Fuel filters, inline and spin on
- Chip / track toggle switch
- Grease & grease gun
- 40amp fuses,

I hope you have enjoyed reading this guide and it has been of some help.

A Stevens

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