Proper Clutch Engagement & Use on Grillo G110 Walk-Behind Tractors equipped with "Active" clutch

After shifting your walk-behind tractor into a wheel-speed, engaging the PTO (implement drive), or shifting between forward and reverse, the clutch lever (the red lever on TOP of the left-hand handlebar grip) must be pushed down all the way to engage engine power to the machine; pushing the lever down brings the clutch lining into contact with the clutch plate, and transfers power. Consequently, during shifting of any of the above-mentioned operations (wheel speeds, forward/reverse, or PTO), the clutch lever must be RELEASED (let go of), so the gears aren't turning while shifting (otherwise you'll get a nasty grinding sound!).

Sometimes, when shifting gears OR trying to engage the PTO, you may find that the shift lever does not want to engage fully. This is because the gears in the transmission are not aligned properly. To get the gearshift or PTO lever to engage fully, put some pressure (NOT shoving or jerking…just firm pressure) on whichever lever you are having difficulty with, and push the clutch lever down ***very slowly***, and as soon as the gears begin to rotate, the pressure you have on the gears will pop the gear into place as soon as it aligns. (The technical term for this type of operation is "Feathering" the clutch) You can also just "bump" the clutch lever down slightly. If you push/bump it down too hard or quickly, you will hear some grinding…this is a "learning grind", just be more gentle next time!!

Once your shift levers are fully engaged, when then pushing down the clutch lever to engage power to your tractor & implement, you should **never** exceed about 1 to 1.5 seconds to **fully** depress the handle. On lighter loads, such as tillers, sickle bars, power harrows, rotary plows, etc.: the clutch handle can be pushed down virtually instantly (1/2 second or less, basically just grabbing the handle), but when operating heavier loads (implements) that operate at a high RPM (Revolutions Per Minute), more care must be taken to not overload the engine OR damage the clutch. As a rule, you are better off bogging the engine down by depressing the clutch quicker, rather than depressing it too slowly and wearing the clutch lining prematurely through excessive heat/friction.

Here are some tips when engaging heavy-load implements which need to operate at FULL engine throttle (such as Flail mowers, larger Brush & Finish [lawn] mowers, Chipper/shredders, etc.):

---Have the engine at 1/3 to 1/2 throttle (rather than full throttle) during engagement of the clutch, then, after the clutch handle is fully depressed, accelerate the engine to maximum throttle.

---During initial start-up of the implement (that is, whenever the implement is at a dead stop), DO NOT have the implement "under load" (that is, a rotary mower should not be starting up while in high grass...the mower needs to come up to speed, and THEN encounter the high grass/weeds/etc.) If you are starting the mower up from a dead stop in the middle of a field of tall material and there is no "mowed" place to "get started" in, you can always push down on the handlebars to lift the mower off the ground during the first few seconds of the mower getting up to speed.

---You can even do a "double-clutch"...that is, "bump" the clutch lever down pretty quickly, and let the engine pull waaaay down for a second (nearly stalling it), while it starts getting the implement up to speed, then let up off the clutch handle for a second or two and let the engine "recover"...the implement is still spinning, so when you depress the clutch a second time, the engine hardly bogs at all. It's the INITIAL start (from a dead stop) on high-RPM implements that is the hardest on the clutch. (This trick works best for implements with HEAVY rotating "flywheels" that have to come up to speed…BIO-90, 100 & 150 chippers, 32" brush mowers)

When mowing, and maneuvering the tractor between forward and reverse (or when shifting between wheel speeds) the same care does not have to be taken as above, as long as the mower blades are still rotating somewhat. If they are, you can pretty much mash down the clutch handle instantly in between shifting, and leave the engine at full throttle.

Excessive “slipping” of the clutch (taking too much time to depress the handle, OR letting up the clutch handle partially when the engine is “bogging down”, OR trying to use the clutch as a “speed control” by depressing the clutch handle only partially to slow the machine down) when the machine is under load WILL result in clutch overheating, which causes premature clutch wear and possible complete clutch failure if the clutch is severely overheated. ***This is no different than what will happen if slipping the clutch excessively in a car or truck.*** (PLEASE NOTE: “Feathering” the clutch to engage gears [as described on the first page] is not a problem, since the machine is not “under load” at the time.)

As the clutch lining is worn away during use, the clutch linkage/cable "loosens up", meaning that you may notice that you have to push the clutch handle further down before the clutch begins to engage. To keep proper pressure against the clutch plate, the cable will need to be re-adjusted to the proper tension. Essentially, when adjusted properly, AS SOON as the clutch lever is depressed AT ALL from the resting (upright) position, the tractor will start to move. (Best to do the adjustment while in 1st gear, with the PTO NOT engaged.) Operating the machine with the clutch cable too loose will damage the clutch, because it will “slip” under load, and the resulting friction will quickly overheat it.

Please see our video for adjusting a G110 “Active” clutch (I recommend watching all 5 minutes of it): https://www.youtube.com/watch?v=rJLykiE44JY

If the clutch is severely overheated, the clutch lining will wear very quickly due to "crumbling" of the burnt lining. Usually, if this has occurred, there will be a very nasty burned clutch smell (like overheated brakes). The only fix for this is a new clutch lining.

The typical service life of a clutch in this equipment is anywhere from 1000 to 2000 hours of use. I have a walk-behind tractor with 12hp engine on it; I got about 1800 service hours out of the original clutch lining… and I don’t “baby” it; I use it hard. However, when "slipped" excessively and overheated, I have seen some folks ruin a brand-new clutch lining in **less than half an hour**. Hopefully, your reading, understanding, and implementing the above info will keep you OUT of the latter category!!

After reading the above thoroughly, if you have further questions, please contact us.

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