

My tractor makes a growling noise whenever I am on a steep grade and it also runs away on me .

On tractors built before the PIN's listed below, the growling noise is perfectly normal. If you are on a grade, gravity wants your tractor to roll down that grade. The combined weight of you, the tractor and any load you might be hauling is now exerting gravitational force onto the drive motor and trying to make it rotate. The steeper the grade and the higher the combined weight, the greater the force on the drive motor, trying to make it spin. It doesn't want to rotate but it has no choice and it emits that growling sound because the weight overpowers it.

There are two ways to overcome this issue. Those of you with the correct Operator's Manual will find a procedure outlined that deals with descending grades. You MUST keep the engine running at wide-open throttle (WOT) at all times. By doing so, the pump produces maximum oil flow and can also develop maximum pressure when needed to properly execute this procedure. As you approach a steep grade, you need to stop on a flat area first. Make sure the trans-axle is in Lo Range. Never attempt to descend a grade in Hi Range.

Proceed to the grade and begin to descend slowly. You will feel the tractor begin to descend the grade on its own and pick up speed. Depress the brake pedal and immediately pull the travel lever back into the "RETARD" area shown on the dash decal just above the Neutral position. Do NOT let go of the Travel Lever while you are depressing the brake pedal or the Travel Lever will immediately be move to Neutral, thus stopping the hydraulic braking action found in the RETARD area. There are two RETARD areas, one on either side of the Neutral position.

Initially choose the first RETARD area on the "forward" side of Neutral. Under most situations, you should be able to control the tractor's rate of descent. If the tractor shows signs of picking up speed, then go past Neutral to the "reverse" RETARD area and now the pump will be trying to force the motor to rotate the other way. You will not hurt the system by doing this. You must keep a firm grip on the travel lever at all times until the descent has been completed.

The above is a "learned procedure" that should be practiced several times until it becomes second nature. Failure to implement the procedures in the correct order could be devastating to your personal safety, the safety of other people in the area and cause expensive damage to your tractor. It is not to be taken lightly.

Case recognized that many people fail to read the Operator's Manual provided with each new tractor. A solution was sought and an item called a "Holding Valve Kit" was developed. It consists of a rectangular block with four ports in it. This was primarily a dealer-installed item for customers who found it necessary to

have one due to the terrain of their property, however it was also available as a factory-installed option on new tractors ordered at the dealer. Different kits became available for different models and years of tractors. (See the FAQ titled "All about the Holding Valve")

The actual holding valve gets mounted directly to the drive motor by way of a double-ended hydraulic fitting that couples one of the four ports in the valve to the fitting on the side of the motor. The other motor fitting is then plumbed by way of a steel line directly to the second port on the valve located on the same side as the first port.

The two ports (port 3 and 4) located on the opposite side of the valve are connected by two more custom bent high-pressure steel hydraulic lines to the ports located on the underside of the travel valve.

This holding valve is essentially a "pilot operated" safety valve similar to ones used to lock hydraulic cylinder in position. As long as there is no pressure being applied to the holding valve by the travel valve, then the drive motor is prevented from rotating due to being locked up hydraulically. The fluid inside the motor has no place to go due to the holding valve acting as a shut-off on both motor ports.

The only way the motor "unlocks" is when the operator moves the travel lever from neutral to forward or reverse, thus sending some pressure into the holding valve causing the internal pilot valves to open the main valve.

These kits do show up on e-Bay for sale. Make sure that all three steel lines and the double-ended fitting are included. If they are not there, then forget it. You cannot buy those lines from Case or Ingersoll and substituting hoses would likely be a problem, especially on the motor side of the valves.

The alternative to the kit is to purchase a used travel/lift valve from a parted out tractor that has the holding valve feature built into it. These too show up on e-Bay frequently. They will fit in almost the same spot as your current travel/lift valve does but you will have to drill two new holes in the check plate floor and countersink them for this valve. You will also need to carefully tweak the original steel lines that go to the drive motor due to the new position of the valve and the increased height of the two ports on the travel valve that supply the oil to the drive motor.

For those wondering if their tractor has this valve or not, the list below shows the PINS for each model indicating the beginning point of when the travel/lift/holding valve became standard.

220 #14090930 start of 1986

222 #14069687 early 1986

224 #14070796 early 1985

226 #14093640 start of 1986
444 #14094620 start of 1986
446 #14074315 early 1985
448 #14075995 early 1985

While the holding valve does make a big difference to these tractors on steep grades, no one should get too cocky. Grass is slippery. Wet grass is even slipperier as is wet clay. Sandy soils give way under weight. The holding valve may lock up the drive motor but it will not stop a tractor from sliding down too steep a slope or a slope where traction is marginal. The use of wheel weights, loaded tires, tire chains or Ag style tires will all improve traction but common sense will also keep you out of trouble in the first place. Your tractor weighs about 800 pounds by itself. When you add attachments, loaded tires, wheel weights, counter weights etc, the gross weight can quickly climb to 1400 pounds with you in the seat. Don't haul items up or down a hill that weigh more than you and your tractor combined. That's the rule of thumb for safe hauling. Bend that rule and you do so at your own personal risk.

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