

WHAT OIL SHOULD I USE IN MY TRANS-AXLE?

Every Operator Manual written by Case and Ingersoll beginning with the 1969 garden tractor models, right up to today; has said the same thing. The owner can use EP80 Gear Oil or 20W40 Motor Oil. The manual also says that owners should be changing their trans-axle oil every 500 hours or ANNUALLY, whichever comes first. That's something that many owners fail to notice when reading their manual.

So let's talk about the oil issue first because oil choice is a subject that is debated as hotly as religion, politics and sex. The question is more about "Is there a wrong choice?" than it is about "Is there a best choice?". If either type of oil were incorrect, then the manufacturer would specify just one type of oil and stick with that. So it really comes down to your own personal opinion and ultimate choice.

Some minor issues to consider are these.

COST: Usually, 20W50 can be bought for less money per quart than any of the dino EP or Hypoid type gear oils. Is the difference in cost between the two types a major issue? Not really. It certainly wouldn't sway me either way.

EFFECTIVENESS: EP or Hypoid type gear oils were primarily developed for car and truck rear ends that used hyperbolically cut gears. This type of gear has teeth that are formed on a sweeping angle that provides great strength in a small space. The problem with this design is that the gears slide on each other during rotation. This creates a lubrication problem when conventional oils are used. The oil industry formulated the Extreme Pressure oils to solve the problem.

The Case and Ingersoll garden tractors do not use hyperbolically cut gears. Instead, they use "straight cut" gears. Straight cut gears do not slide on each other. Therefore, the need for EP Gear Oil is not there. Just the same, EP Gear Oil is an excellent gear lubricant. All I am saying here is that oil was created to solve a problem that does not exist in my tractor or your tractor. It does no harm to use it and whether using it causes any real good is highly debatable.

ODOR: Once again, this is a subjective topic but it needs to be mentioned in passing. To me, motor oil does have an odor but it is not as repugnant as gear oil. I don't know how anyone could mistake the two because I find the difference dramatic. Of course, personal choice enters the picture. Some people find the smell of gear oil very offensive while others do not. The odor factor is only present during the oil change. Once the trans-axle is closed up and the old oil is safely bottled for recycling, then the smell will disperse quickly as long as all spills are cleaned up. That includes

safe disposal of any rags with gear oil on them and the washing of any clothing that may have had gear oil spilled on them.

QUANTITY: Ever since the 1969 models arrived on the scene, the bulk of the garden tractor models called for 3 US quarts of oil to be added to the trans-axle. The plug on the rear of the trans-axle served two purposes. Primarily, it was a “fill plug” but it was also a “level plug” to prevent over-filling or under-filling of the trans-axle. In or around the year 1983, a third plug was added to the right side of the trans-axle and the amount of oil specified was reduced from 3 quarts to just one pint. I have yet to see an explanation for this. Dealers who have commented on this say that; they disregard the one pint spec and put a full quart in. They also ignore the third plug that had been added as a dedicated level plug because they are adding more oil than the factory specifies. There were no internal changes to the trans-axle that would coincide with the call for 1/6th the amount of oil specified previously.

So once again, we find ourselves in the land of subjectivity on this issue. Is it a big deal? Not in my opinion. The more oil in the trans-axle the better. Small amounts of oil get contaminated more than large amounts because the contaminants are six times more concentrated in a single pint of oil than they are in six pints of oil. That's just common sense.

We do hear about trans-axle seals leaking and the odd axle bearing wearing out as well as the problems with the 4 carrier bolts shearing off but none of that is related to oil type or to oil quantity. What we never hear about is failure of the gears due to lubrication issues. Therefore, oil quantity and oil choice are non-issues as far as I'm concerned and that point of view is shared by most dealers and knowledgeable owners alike. What is an issue is making sure that the trans-axle oil is clean and uncontaminated. Changing it once a year when the oil is up to operating temperature ensures clean, uncontaminated oil. And even though the oil that comes out looks clean to you, it often contains microscopic particles that do not affect the color but they can sure affect the surfaces of the gears and bearings in the trans-axle.

SYNTHETIC? Once again...your dime, your choice.

Synthetic oils work really well in sub-zero temperatures. They flow much easier and provide better lubrication initially than dino based oils do. All I can point to on this issue is the lack of complaints about gear problems with Case and Ingersoll GT's that resulted from poor lubrication. If using synthetic oil in the trans-axle makes you feel good, then go ahead and put it in. Just remember this. There is no oil filter on the trans-axle oil to keep any type of oil clean. Only annual oil changes can ensure that the rear end gears are being bathed in clean oil. Synthetic oils are not magic. They do not “eat” metal particles or other contaminants.

HELPFUL HINT: Getting the old oil out of the trans-axle is simple. Remove the drain plug and let it flow into an appropriate container. Putting oil back in is not as easy

because the fill plug is horizontal. Your tractor has a seat pedestal that is made up of the fenders, a front panel where the Hi/Lo shifter is and a rear panel. On the right side of the rear panel is a ½" diameter bolt that can be removed with a ¾" socket. The threaded hole for that bolt has no bottom. It goes right through the trans-axle housing into the interior. If you purchase a funnel with a long neck that is small enough to go into that threaded hole, you can fill your trans-axle through that hole. That allows you to leave the regular fill hole open and allow it to confirm when the trans-axle is topped up.

Even if you are adding just one quart to your later model trans-axle that has 3 plugs, this is an easier way to get that oil in.

All materials on this site, including articles, pictures, and the like are protected by Copyright laws and may not be reproduced, distributed, transmitted, displayed, or otherwise published without the prior written permission of Tom Arnold(Casecoltingersoll.com) As long as you do not remove the Copyright or other notices you may download and print one copy for your personal non-commercial use. You may not transmit or store the content of this site in any other website or other form of electronic retrieval system without the prior written consent of CaseColtIngersoll.com. Website disclaimer. The information contained in this website is provided by Casecoltingersoll.com as a public service and while we attempt to provide accurate and up to date information, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information contained on the website. Under no circumstances shall we be liable for any loss or damage, direct, indirect or consequential arising out of the use of the information found in this website. Within this website you may be able to link to a number of websites that are not under the control of Casecoltingersoll.com. Casecoltingersoll.com has no control over the content found in those links, and their inclusion does not imply an endorsement of the information or views expressed in them.